

## Editorial

## Pursuing a Ph.D. Degree: Who has what it takes?

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## ABSTRACT [ENGLISH/ANGLAIS]

Nil

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## INTRODUCTION

Remembering an incident that occurred during initial days of our Ph.D. Members of Ph.D. advisory and evaluation committee were enquiring the newly enrolled Ph.D. students about their progress report. After a brief round of discussion, many of the students did not understand the basics; some were surprised at some of the questions and some confused by some of the answers and suffered from real turmoil in brain. This quote is suffice to explain the current status of minds of many of those who want to earn the most reputed and respected degree - "Doctor of Philosophy" in India

*Doctor of Philosophy*, abbreviated, as Ph.D. is one of the highest academic degree one can earn. Earning a Ph.D. requires extended study and intense intellectual effort and accomplishment which many people dream of but less than one percent of the total population enrolls to pursue it, furthermore only very few normally become successful in attaining it.

In the present scenario, after leaving the university even with master's degree, students often find it is not worth much in the work world. It is well said by Mark Dale, the dean of graduate studies at the University of Alberta, USA, that "It's fair to say there has been credential creep". Government research departments that were hiring B.Sc. holders back in the 1950s have been moving toward a

hiring Ph.D. This is not unreasonable, since the world has become more complicated and specialized. However, the question is does this advance degree give the desired result? Does it worth the investment of time and money?

In this editorial, we discuss "Know thyself" and "Be honest about how the skills and aspirations fit with expectations and goals of the Ph.D. degree." Here, the issue of 'fit' becomes very crucial.

## Mastering a Subject

Each University establishes general guidelines that a student must follow to earn a Ph.D., and each college or department within a University/Institute sets specific standards by which it measures mastery of a subject. Especially in the scientific disciplines, to demonstrate competence to complete and consummate skill of the subject, it's required to have high percentage/grade average, or take a battery of special examinations conducted by UGC/CSIR-NET/GATE/ICMR/ICAR/DBT and other scientific governing bodies. Therefore, examinations given as part of a Ph.D. curriculum assess expert knowledge, they have created and evaluated by one of the highest cadre committee of experts. After successfully crossing all through, the story of scholar begins to become the master of master. To master a subject, an inquisitive Ph.D. scholar searches the literature

to find and read almost everything that has been published so far starting with Google search and enchanting googlaa-ee-namah!!! day and night and then text in the books and eventually, the scholarly journals, the publications that scientists use to exchange information and record reports of their scientific investigations. Academia leads Ph.D. degree. "More of reading, more it leads towards perfection".

### Extending Knowledge

The essence of a Ph.D. degree, the aspect that distinguishes it from other academic field, can be summarized in a single word: "Research" – which should not be "Re Search". To extend knowledge, one must explore, investigate, and contemplate. The scientific community uses the term *research* to capture the idea. In order to prepare for this prestigious degree, one should know research implies experimentation, but research is more than mere experiments—it means deep understanding of research topic and extensive interpretation of experimental results. A researcher chooses the tools and techniques appropriate to answer each question that arises in a research investigation, and because new questions arise as an investigation proceeds, research activities vary from project to project and over time in a single project. A researcher must be mentally prepared to use a variety of approaches and tools to tackle any scientific problem or situation without creating a void or vacuum in them.

### For "beginners" there is often a dilemma and few questions might have to be answered

Many of the inspiring students trying to decide whether or not to pursue a Ph.D. degree and those who affirmatively decide will always remain in dilemma that whether or not I will be able to continue and complete it successfully. It's important to enter a program in which sincere interests dwells.

Here are a few questions a "beginner" might ask him/herself before deciding to join the Ph.D. research program.

#### 1. Do I really want a research career?

Before enrolling in a Ph.D. program, one should carefully consider ones long-term goals: a doctoral program is rewarding, but requires a big commitment. One must make sure this is really the career one wants to pursue, and all the pros and cons associated with it must be

carefully considered. For some reasons, everything in our world has two sides. Education turns out to be not an exception. If one chooses research as a standard path for the blooming career than they ought to have Ph.D. degree that too with sincerity, honesty and diligence (few people have managed to obtain a research position without a Ph.D., but this is the rare exception). If, however, one wants a non-research career then a Ph.D. would most likely (or sometimes, most definitely) not be important.

#### 2. Do I want an academic position?

A Ph.D. is the "open door access" for an academic position. Although it is possible to obtain an academic position without a Ph.D., but justice for the same comes only after an experience of hardship in our academia which is possible with the procedure to obtain doctorate degree. Most Universities/Institutes (and most colleges) require each member of their faculty to hold a Ph.D. to ensure that the appointed faculty has sufficient expertise and is updated in their chosen field. The Indian academia ranks the title "Professor" higher than the title "Doctor". It does so in recognition of academic requirements: most professors hold a Ph.D., but not all Ph.D. degree holders are professors (just like the scientific quote-"All enzymes are protein, but not all the proteins are enzyme").

#### 3. Do I have what it takes?

It is very difficult for an individual to make an internal assessment for their own capabilities. Going for aptitude test will be the right thing to do but the following words of wisdom might be of some help.

#### Intelligence and common sense

One of the prime demands of research is intelligence, effort and endurance. Is intelligence enough to work efficiently and diligently over the years? Though "Common sense is not so common", does it really required?

#### Time investment for work/ungodly hours

It should be noted that research is not a 9:00 am-5:00 pm affair; it takes a toll on mind as well as on daily routine schedule, mostly at the expense of personal life. Am I willing to reduce or forego other activities? Am I prepared to tackle a project larger than any of one has undertaken before? Remembering always-Discipline is the refining fire by which talent becomes ability.

### *Creativity*

Creativity is required not only in experiment designing, but also in the way its presented specially the experimental results. Be creative enough to look at old facts in a new way.

### *Inquisitiveness about usual and unusual happenings*

A natural curiosity always makes research easier and interesting. Do I have the inborn desire or always been compelled to understand the world around and to find out how things work?

### *Adaptability/flexibility*

Most students are unprepared for Ph.D. program. They find it unexpectedly different than course work. Suddenly thrust into a world in which no one knows the answers, students sometimes flounder. Will I be able to adapt to new ways of thinking and tolerate searching for answers even when no one knows the precise questions?

### *Self-motivation*

By the time a student finishes undergraduate/post-graduate education, they have become accustomed to receive grades/percentage for each course and in each semester. In a Ph.D. program, work is not divided neatly into separate courses, research tasks are not partitioned into little assignments, and the student does not receive a grade for each small step. Obstacles will likely be thrown in the path which are to be to overcome. One's success depends on himself/herself. Be self-motivated enough to keep working toward a goal without day-to-day encouragement.

### *Competitiveness*

One has to compete with others at the top. More importantly, will be thrown in a field where one will be measured and judged in comparison to some of the brightest people in the world. Willing to compete with them at the Ph.D. level?

### *Maturity*

Compared to coursework, which is carefully planned by the professor, Ph.D. study is structure-less and will have more freedom to set own goals, determine daily schedule, and follow the interesting ideas. Success or failure depends on it. Mature enough to accept the additional responsibility that accompanies the additional freedom?

### *Common myths about Ph.D.*

Nowadays discussion of Ph.D. has got a reverse side. It is often stated that educational system works ineffectively, and the phenomenon of Ph.D. does not always fulfill its functions appropriately. First of all, one has to risk falling into a certain gap which appears between two worlds: an "inner world" of Ph.D. where one has to study, carry out a specific research and hardly worry about matters beyond this area, and an "outer world", where ones career and professional responsibilities set other requirements.. So, it is extremely important to consider the situation in the scientific labor market before enrolling into a Ph.D. program for the wrong reasons. Before starting one should realize that a Ph.D. itself is not just:

### *Prestigious*

Almost everyone who has obtained a Ph.D. is proud of their efforts and the result. However, one should understand that once graduated, one will work among a group of scientists each of whom hold a Ph.D. degree. (One faculty member often used to chide arrogant graduate students by saying, "I don't see why he/she think it's such a great accomplishment-all my friends have a Ph.D.!").

### *A guarantee of respect for all opinions*

Many students believe that once they earn a Ph.D., people will automatically respect all their opinions but soon realize, much to dismay that very few people assume a Ph.D. in one subject automatically makes the person an authority on others. It is especially true in the science community; respect must be earned.

### *A goal*

A Ph.D. degree prepares for research. If all it want is a diploma to hang on the wall, there are much easier ways to obtain one. After graduation, one will have occasion to compare record of accomplishment to those of other scientists. One will realize that what counts in the research work are publications accumulated after a scientist finishes their formal education.

### *A job guarantee*

During the time of economy recession, anyone can suffer. In fact, some companies reduce research before they reduce production, making Ph.D.s especially vulnerable. Furthermore, once a person earns a Ph.D., many

companies will not hire that person for a non-research position assuming that ones are over-qualified for that job.

### *A practical way to impress the family or friends*

Our family may be proud and excited when one enroll in a Ph.D. program. After all, they imagine that they will soon be able to brag about their child, "The Doctor". However, a desire to impress others is insufficient motivation for the multitude of effort required.

### *Something to "try" to find out how smart we are*

Sorry, but it just doesn't work that way. Unless one make a total commitment one will bound to fail. It will need to work long hours, face many disappointments and frustration of negative results, stretch mental capabilities, and learn to find order among apparently chaotic facts. Unless ones have adopted the long-range goal of becoming a researcher, the day-to-day demands will wear it down. Standards will seem unnecessary high; rigor will seem unwarranted. If one will only consider it a test, they will eventually walk away.

### *The only research topic will ever pursue*

Many scholars make the mistake of viewing their Ph.D. topic as a research area for life. Experienced researchers know that new questions arise constantly, and that old questions may become less interesting as time passes or new facts are discovered. Change is a natural process. The smart people change research topics and areas. It keeps them fresh and stimulates thinking. Plan to move on; prepare for change.

### *Better than the alternatives*

For many students, a Ph.D. can be a curse. They must choose between being at the top among people who hold a Masters degree or being a mediocre researcher. one must choose between being "captain of the B team" or a "benchwarmer of the A team". One has to decide what they want, and which profession will stimulate the most. But at the same time, students should be realistic about their capabilities. If it really cannot determine where they stands, then one must quit the research career.

### *A way to make more money*

One must know it isn't the best way to go if they want to be financially rich. While students used to estimate the "payoff" using the starting salaries of M.Sc. and Ph.D. positions, the average time required to obtain a Ph.D., the

value of stock options, and current return on investments. For a period of at least five years, the payoff is clearly negative. Suffice it to say that one must choose research because one loves it; a Ph.D. is not the well paved road to wealth.

### *A passport/visa for foreign tours*

This is a very latest assumption that one who get into Ph.D. degree, then they will be able to go abroad easily for post-doctoral fellowship or any offshore company will absorb them easily. As in most other professions, continued employment depends on continued performance.

### **Good news**

So, really think, what it takes!!!! If one has a soul desire for a research career, it can bring bounty full of rewards unequaled in any other profession and will get to meet and work with erudite on the planet. Will reach for ideas beyond the grasp, and while doing this, one can extend the intellectual capabilities and will be able to solve problems that have not been solved before and explore concepts that have not been explored. Will uncover the facts that will change the people's perspectives, thought process and they will be the trend-setters for the new era.

### **The joy of research-Ultimate Art of Research**

A colleague summed up the way many researchers feel about their profession. When asked why he spent so many hours in the lab, he stated that the alternatives were to go home, where he would do the same things that millions of others were doing, or to work in his lab, where he could discover things that none had ever discovered. The satisfaction and smile on his face told the complete story: for him, working on research was sheer joy.

In conclusion, becoming a *Doctor of Philosophy*, is ultimately based on ones philosophy of life and the success mantra of Ph.D. is "Never say Never".

### **Quick Reminder:**

- ✓ Be clear why I want to do a Ph.D. Proceed only if one has strong personal convictions. After committing himself/herself, never step back. Keep on at it until I complete my Ph.D. successfully.
- ✓ Purpose of Ph.D. is research training. Think about how it fits into my career trajectory. How

does it help to achieve my long term goals and objectives?

- ✓ Search carefully for a research field in which one is interested, supervisor, and University/Institute. Remember that good supervisor are all over, not just in big name University/Institute.
- ✓ Master your subject. Survey the research area and draft a clear and feasible research proposal.
- ✓ Plan and execute research with extensive care. When you encounter difficulties, consult with your supervisors, your fellow students, and those having expertise. Remember one can't fail to get a Ph.D. unless he/she give it up himself/herself.
- ✓ Write up research work in form of manuscript, present papers at conferences, and publish in journals.
- ✓ Submit thesis, make the necessary corrections, prepare carefully for oral defense and fulfil destiny armed with a Ph.D.

## REFERENCES

- [1] Estelle MP, Derek SP. How to get a Ph.D.: A handbook for students and their supervisors. Revised and updated 4th edition. Maidenhead, Berkshire, England: Open University Press, 2005.
- [2] James EM, Namgi P. Guide to the Successful Thesis and Dissertation: A Handbook for Students and Faculty. 5th edition. New York: Marcel Dekker, 2003.
- [3] Peter JB. The Ph.D. Application Handbook. Maidenhead, Berkshire, England:Open University Press, 2006.
- [4] An informational website for Ph.D. prep students, graduates and friends. Applying to a Ph.D. Program. URL: [http://www.byuaccounting.net/mediawiki/index.php?title=Applying\\_to\\_a\\_Ph.D.\\_Program](http://www.byuaccounting.net/mediawiki/index.php?title=Applying_to_a_Ph.D._Program)
- [5] Notes on a Ph.D. degree by Douglas Comer, Distinguished Professor of Computer Science, Purdue University. <http://www.cs.purdue.edu/homes/dec/essay.phd.html>
- [6] Roseman E. Pros, cons of getting a grad degree, A bachelor degree isn't always worth much these days. Toronto Star. 10 December 2006.

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## CONFLICT OF INTEREST

Nil

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