How long does it take to get a PhD?

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As part of their most recent strategic plan, the South African Department of Science and Technology have proposed that the training of PhD students should be the 'driver' to propel South Africa into a knowledge economy. The intention here is to drive significant economic growth in the country. I support this vision wholeheartedly. However, the length of time it takes for students to get degrees has become a strong point of contention, with higher education institutions seriously challenged to increase their throughput rates. As a deputy dean in a science faculty I am regularly engaged in discussions regarding throughput rates at many levels within the university at which I am employed. An important first step in this discussion is to realise that initiatives to improve throughput rates for bachelor's degrees will be different to those needed for postgraduate degrees.

As the ultimate degree, the PhD needs some special thought when it comes to speed of completion and the maintenance of appropriate international standards. I have guided more than 30 PhD students through their degrees during the course of the last two decades. Most are now employed in a variety of occupations across the globe. I thus feel fairly confident that I 'know' when a student has completed a sufficient body of work to have earned a PhD degree that would match those of others that I have witnessed as having been valuable in an international context. However, when I look back at these students, I see that their scientific output and impact has been very different. Some have produced vast tomes in the form of monographs, whereas others have produced far more modest documents. Some of their theses have resulted in many publications, others in only a few. And while some of these students completed their degrees in three years, others took more than six to finally 'clear the hurdle'. These examples alone should illustrate the fact that it is far from trivial to establish a fixed set of guidelines that dictate the requirements to complete a PhD.

I think I am in good company in not feeling comfortable in providing prospective students with fixed guidelines and time lines regarding the completion of a PhD. A PhD should not be regarded as a product for which there is a recipe, and consequently, any person owning 'the recipe' should not be considered as able to produce an acceptable output in a defined period of time. Thus, the question as to how long a PhD study should take is a very important one to understand. This is especially true in a country where it has become a national imperative to train as many PhD students as possible. It was therefore with this question at the back of my mind that I read Malcolm Gladwell's *Outliers*[1], in which he writes of the '10 000 hour rule'. Gladwell justifies this rule based on a 'mixed bag' of examples from sportsmen and women, to successful businessmen such as Bill Gates. I am sure that Gladwell was not thinking about PhDs when he developed the view that 10 000 hours of commitment to a topic appeared to represent a common factor underpinning success. However, based on my sample of 30 PhD students, I think that this rule can very aptly be applied to a PhD study. This rule implies that it is futile, and perhaps even foolish, to focus on the number of years, months or days that are required to complete a doctorate. Rather, the idea that a solid and tangible commitment of 10 000 hours is probably a better estimate of the time required to complete the task, should be adopted.

The average working day is considered to be 40 hours a week, and allowing for two weeks of vacation per year, this means that there are 2000 hours available for work every year. A PhD student who approaches his or her work like an 8-hour-a-day job can then expect to take a minimum of 5 years to complete the degree. Likewise, a student committing 70 hours work a week should complete their degree in 3 years. I am constantly advising my PhD students that they cannot hope to complete their degrees in 3 years if they work only 40 hours a week. Looking back to past students, the figures fit Gladwell's rule remarkably well.

It is important to mention that this 10 000 hour PhD rule 'counts' only those productive hours when one is working at maximum efficiency. Any breaks or interruptions will reduce efficiency. We all recognise that it takes a while to 'get up to speed' regardless of the task one is undertaking. In fact, one could argue that part of the training in itself is learning how to gain maximum efficiency as quickly as possible because this time spent 'getting up to speed' often is where most time is wasted. Thus, students who decide half-way through their degrees to accept external employment will require an even longer period of time to complete a degree than would have been the case if they were studying full time.

What of MSc degrees? A two-year MSc, if compared with the above example for PhDs, would require a commitment of at least 50 hours a week. It is a lack of realisation of this situation that results in many students taking longer than the time suggested as ideal to complete their degrees. That is, they really are not committing sufficient productive time to their studies. Likewise, a honours degree should require about 2000 hours of commitment. Most honours students start only in February and these degrees typically are completed by the end of November. Given that many BSc (Hons) students take a vacation, this leaves them with about 42 weeks in which to complete their degrees. To fit 2000 hours into this period means that they also have to commit about 50 hours of productive work a week. This usually comes as a shock to students who have actually hardly been working 40 hours a week during the course of their undergraduate studies.

I have been told that I need to take the personal circumstances of students more fully into consideration when trying to motivate them to succeed. I do not contest this view but believe that this again is best understood from the perspective of the productive hours committed rather than a relatively nonsensical and randomly defined number of months or years. I believe as a scientific community, that we have lost sight of the fact that, as the PhD is the ultimate degree in science, to 'dumb it down' to something mechanical would be a huge mistake. It would be at our peril to focus on a set number of years to complete a PhD and we should rather set our goals based on a level of commitment and quality. A PhD takes a huge amount of time and effort and, for a career in science, it is only the starting point. We should thus celebrate it for what it truly is: a huge achievement reached only by substantial passion and commitment – all 10 000 hours worth! ■

REFERENCE

1. Gladwell M. Outliers: The story of success. New York: Little, Brown and Company; 2008.