The SDA Higher Educations’ New Challenge: To Make Sense of the Nonsense of Publish and Perish Culture

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Abstract: Emphasis on the publication of scientific information and discoveries was initially introduced to inform the public of new discoveries and developments. This quickly changed into a device to measure the worth of academics to an institution and in order to measure the standing of tertiary institutions themselves. Without difficulty, academic ranking soon became tied to the publication statistics generated by the individual. Over emphasis of the “publish or perish” theme has led to mediocrity in many publications, the exponential growth of new journals, the growth of unethical practices, and a reduction in feelings of worth by employees and an increase in their stress levels. In order to encourage research output figures, some institutions have engaged in monetary rewards for publications and this has been refined to recognize the impact of the journal on the reading public. The more times a journal article is read the greater the impact and the greater the reward received by the authors.

The consequences of the pressures to publish being linked to market forces has been seen in unethical practices being adopted by an alarming number of scientists. These have varied from fabrication of results, selective reporting of data, to questionable research practices, and to over emphasis of the significance of findings. Country differences have been noted. Where cozy relationships exist between government agencies, business, the media and academics, all sorts of unethical practices may be experienced. The scene has been further complicated by the emergence of fraudulent publishers and predatory journals, which publish for a fee and promise a peer reviewed, quality product where, in fact, they fail miserably. Different types of deception abound to confuse the uninitiated.

Keywords: Publication or perish, rewards, unethical behavior, predatory journals

History and development of publish and perish culture

Originally, the publish or perish concept came from a noble belief that knowledge and experiences of the scientists (researchers), be it theoretical or practical, should be communicated to public for the science to excel. One way to achieve this ideal was to require the scientists to publish their research and observations (Ozcan, 2014).

This noble concept was later adopted to the university and academic environment, where the scientists were also lecturers. Other non-scientist/non-researcher lecturers were then required to record and publish their knowledge, observations and classroom experiences. As time passed this noble concept evolved into a culture where the lecturers must research and publish in order to maintain/improve their academic ranking. Today, this phrase publish and perish is coined to describe the pressure in academia to rapidly and continually publish academic work to sustain or further one's career (Fanelli, 2010; Neill, 2008).

Publication has become one of the most important criteria for a lecturer to retained their credential/certification as well as for the sustainability of the institution’s accreditation. In popular academic perception, scholars who publish infrequently, or who focus on activities that do not result in publications, such as instructing undergraduates, may lose ground in competition for available tenure-track positions.

Consequently, today “the noble Publish-or-Perish concept” has become a requirement for faculty worldwide with dual attributes: stairway to career prosperity for those who excel in doing/writing research, but a constant pressure for those who enjoy teaching but do not excel in doing/writing research.
As the demand to publish or perish increased the emphasis also changed from quality to quantity, the noble concept started to deteriorate into commercial and manufacturing practices of mass production of more and more journals and conference proceedings. Demand spurs supply. Mostly-for-profit publishers of books and journals have mushroomed, and mediocrity has crept into both venues. Journal pages have to be filled, and library shelves have to be stacked with books. More journals in a particular research field are published than anyone can reasonably keep up with. The publishing craze has now extended to all-electronic journals. Many articles, both print and electronic, remain without a single citation, five or more years after publication. Although more difficult to measure, however one may presume many papers remain unread by anyone other than their authors. The way some papers list their authors today, some articles may not even be read by all their respective coauthors (Anderson, Ronning, De Vries & Martinson, 2007; Adler& Harzing, 2009; Fanelli, 2011; Feller, 2002; Frey, 2010: Fulton & Trow, 1974; Gad-el-Hak, 2004; Ozcan, 2014; Neill, 2008).

The impacts of publish and perish culture

The British Physicist and 2013 Nobel Prize Laurette for science, Peter Higgs, 84, said he would almost certainly have been sacked from his department had he not been nominated for the Nobel in 1980. Edinburgh University's authorities then took the view, that the institution should keep him, because he was a Noble Laurette, though he was considered unproductive as a scholar because he did not produce enough publication after that. Higgs had become an embarrassment to the department when they did research assessment exercises. A message would go around the department saying: "Please give a list of your recent publications." Higgs said: "I would send back a statement: 'None.' By the time he retired in 1996, he was uncomfortable with the new academic culture. "After I retired it was quite a long time before I went back to my department. I thought I was well out of it. It wasn't my way of doing things any more. Today I wouldn't get an academic job. It's as simple as that. I don't think I would be regarded as productive enough"(Aitkenhead, 2013).

The advent of this publish-or-perish culture has been discussed and criticized continuously by scholars in various disciplines as the publication pressure has clearly become visible and has materialized in a number of practices:

1. Fear and anxiety among those who has limited time, skill deficiencies, and inexperience.

Many inexperienced young lecturers experience discomfort, anxiety and even fear the first attempt to do research. Sources contributing to discomfort include writing skill deficiencies, unfamiliarity with the publication process, and fear of having a manuscript rejected (Oermann & Hays, 2011). For many, writing is an emotional process that triggers insecurity, anxiety, and fear (Gazza, Shellenbarger, & Hunker, 2013). Busy personal lives coupled with a demanding, emotionally exhausting, and time-consuming job leave little time for search and writings. These obstacles may continue to haunt them with fear, anxiety and stress (Dowling, Savrin & Graham, 2013).

2. The ambiguity of plagiarism

Under pressure to generate voluminous output, lectures as well as prominent scientists often fall prey to what is called “compromised plagiarism” such as self-plagiarism -using the same text in several articles, publishing the same set of data twice at different articles, submitting minimal publishable unit, submitting the same article with newly obtained data in a different journal. These are manipulative disguises and constitute undetected plagiarism, while others may unintentional write a published phrase that may be detected as plagiarism. All of these ambiguities had badly affected the principle of honesty and integrity seen in scientific publication works (Neill, 2008).

Some good qualified experience researchers may accidently use the same phrases without realizing it, and be accused as plagiarists, while others who are crafty and manipulative may be undetected and escape. Several prominent scientists had failed including Jane Goodall, Dr. Martin Luther King Jr., Helen Keller, Fareed Zakaria, Barack Obama, etc. (Farhi, 2012; Van Jaardveld, 2016).
3. **Reward/commercial value of the papers, not the impacts it contributes**

Scientists have been forced to downgrade their primary aim from making discoveries to publishing as many papers as possible—and trying to work them into high impact-factor journals. Consequently, scientific behavior has become distorted and the utility, quality, and objectivity of articles have deteriorated (Adler & Harzing, 2008).

Some lecturers may get research grants higher than their salary, other must publish to retain their teaching credentials, thus sacrifice their commitment and time for students learning and class preparation. The tragedy is that even the research findings do not contribute to innovation or development.

Over time the productivity of scientists and universities in terms of publications and citations have become more important as the determinants of individual and organizational rewards (Walker, Sykes, Hemmelgarn & Quan, 2010). Substantial individual cash bonuses have been introduced to stimulate publication and this practice has increased substantially over the last ten years, especially in emerging economies like China and South Korea (Franzoni, Scellato & Stephan, 2011).

In the US and Canada, the history of using incentives for faculty to publish as the basis of monetary rewards predates that of Western European countries and certainly that of emerging economies (Fulton & Trow, 1974; Stephan & Levin, 2001). European universities and policymakers were captured by the idea to incentivize the production of science starting in the 1980s and 1990s. The tacit reward system of the distant past in which educational qualities, public service and research qualities were assessed in an informal manner and where priority in discovery offered non-market incentives for scholars (Merton, 1957) was replaced. The substitute was an explicit and formal reward system in which individual and measurable performance was rewarded. In other words, the non-market competitive forces that characterized scientific discovery have been to some extent crowded out by systems of funds and rewards that mimic market competition.

The competition among universities and the drive toward higher scientific productivity has many faces and consequences. To boost competition among scientists, universities shifted over time from an input to an output focus in their finance methods and reward structures. The value of published work is often determined by the prestige of the academic journal it is published in. In turn, journals can be measured by their impact factor (IF), which is the average number of citations to articles published in a particular journal (Liu, Gai & Zhou, 2016). In other words, one may conclude that it is the value the researchers received and not the impacts it contributes to society that counts.

4. **Fabrication, falsification of research data**

Over-emphasized of publication can, in the worst case, also lead to fabrication and falsification of research data, which eventually damages the perception of science.

In 2009, *Anesthesiology News* reported that a routine audit at Baystate Medical Center in 2008, uncovered “one of the largest research frauds in history” committed by anesthesiologist Scott Reuben, MD who fabricated around 21 papers on nonsteroidal anti-inflammatory agents used in an orthopedic hospital (Borell, 2009; Sharav, 2009). These fabricated data, patients results were cited by other researchers, and it was an instrument to send these analgesic sales into market of billions of dollars, but the negative effects of these to medical practices is huge, vast and unretractable.

A study of Daniele Fanelli (2009) concluded that a pooled weighted average of 1.97% of scientists admitted to have fabricated, falsified or modified data or results at least once – a serious form of misconduct by any standard– and up to 33.7% admitted other questionable research practices. In surveys asking about the behavior of colleagues, admission rates were 14.12% for falsification, and up to 72% for other questionable research practices. Meta-regression showed that self-reports surveys, surveys using the words “falsification” or “fabrication”, and mailed surveys yielded lower percentages of misconduct. When these factors were controlled for, misconduct was reported more frequently by medical/pharmacological researchers than others.
In China, researchers have started to reflect on the negative impacts of universities using publication output as a major criterion of faculty performance. This they have termed “qiaomen zhuan” (i.e., a brick picked up to knock on a door and then thrown away afterwards) for promotion, rewards and pursuit of research funding, rather than a means to share ideas amongst the academic community. More critical reflection is stimulated by reports of recent retractions of Chinese papers due to fabrication, falsification, plagiarism and unattributed ghost-writing (Tian, Su & Ru, 2016).

In South Korea, the revelations of the 2005 historic achievement of Dr. Hwang’s cloning research as fraudulent was painful, not only to the researcher and his colleagues but to all Korean scientists, including the Korean government. After nearly 10 years since the Hwang scandal, though Hwang was convicted of embezzlement and violating ethics laws and has been discredited, little has changed. This is on account of the cozy ties between government, business, the media and academics, which stifles criticism and fosters blind nationalism. South Korea is still obsessed with joining the ranks of advanced countries and, to achieve that end, many people believe it is acceptable to sacrifice ethics, safety and concerns for others (Lee, 2014).

5. Exaggeration of language

Our perception and beliefs of how the world works are influenced by the way we use language. This is no different in science. Scientific language has the potential to influence not only readers, but also editors, reviewers and colleagues and push opinions and thoughts in certain directions. The use of convincing language might consequently be essential to sway readers to foster credibility of scientific work. Language used in scientific articles have the potential to ‘make it or break it’. Consequently, it may well be the case that scientific findings and discoveries are sometimes exaggerated and the implications of the research overstated (Tijdink, Vinkers, & Otte, 2016).

Scott and Jones (2017) found from the archival scientific literature: exaggerating the significance of one’s results through use of adjectives such as excellent, remarkable, extraordinary has been well accepted. These words are acceptable in nonscientific writing but have little or no quantifiable meaning in research. For example, all research is novel (or else it would not qualify to be called research), yet use of the word “novel” has increased 25-fold in the abstracts of medical papers since 1975/1976, so that it appeared in 8.5% of such papers in 2014. The phenomenon is not limited to the health fields; it is now rampant in all areas of science and engineering (Scott & Jones 2017).

Another potential factor to bear in mind is the rapid and steady growth of the scientific enterprise. Between 1996 and 2011 over 15 million individuals authored around 25 million papers resulting in increased competition for the very few publication slots in high impact journals. These high impact publications are particularly important for the career of a scientist. This may have contributed to a paradigm of over-interpretation, overstatement and misreporting of scientific results in order to get published. Potentially conflicting with the core values of science, the pressure to publish in high impact publications may be contributing to a paradigm of over-interpretation, overstatement and misreporting of scientific results. The absolute frequency of positive words increased from 2.0% (1974-80) to 17.5% (2014), a relative increase to 880% over four decades. All 25 individual positive words contributed to the increase, particularly the words “robust,” “novel,” “innovative,” and “unprecedented,” which increased in relative frequency up to 15000% (Tijdink, Vinkers & Otte, 2016).

6. Existence of puppet reviewers, predatory journals, and fraudulent publishers

Peer review is the process that decides whether of a research article is qualified to get published in an academic journal. It doesn't work very well any more, mainly as a result of the enormous number of papers that are being published - an estimated 1.3 million papers in 23,750 journals in 2006. There simply aren't enough competent people to do the job. The overwhelming effect of the huge and unpaid effort that is put into reviewing papers is to maintain a status hierarchy of journals. Any paper, however bad, can now get published in a journal that claims to be peer-reviewed. The blame for this sad situation lies with the people who have imposed a publish-or-perish culture, namely research funders and senior people in universities. To have "written" 800 papers is regarded as something to boast about rather than being a shameful achievement (Colquhoun, 2011).
The reputation of open access (OA) publishing, has also provided a number of problems such as the emergence of so-called “predatory publishers.” These prey on researchers’ need to publish or perish. Another issue that has received less coverage than predatory publishers is that of “highjacked” journals, where a website is fraudulently created to mimic a legitimate journal’s site in order to attract submissions and publication fees. Legitimate open access publishers have responded by establishing the Open Access Scholarly Publishers Association 97 (OASPA) and discovered at least 900 suspect predatory publishers/journals. There have been concerns, however, that some journals and organizations have been mis-labelled as predatory as a result of applying simplistic or subjective criteria (Ware & Mabe, 2015).

Today, scientific societies and scholarly communities must become aware of the aggressiveness of predatory journals, puppet reviewers, and fraudulent publishers. Predatory publishers undertake to publish any article for a fee, but do not adhere to the high standards of typical peer-reviewed scholarly publications. Fraudulent scientific publication and all their ramifications are rampantly spreading like a tumor in the body of knowledge and science. As a robust and holistic solution, both scientists/scholars and their employers should be equally educated on how to win the war against organized predatory publishing (Hasan & Ahmadi 2017; Haug, 2015).

Conclusions and recommendations
Although teaching is the most important aspect of universities life, publishing has now become obligatory, not just optional. Some or even most lecturers are still struggling with this publish and perish pressure. University administrators and officers may be very adept at measuring publication output. These are often insufficient, including those in our SDA universities. Some of our universities may even unfairly deny lecturers’ tenure, because of insufficient publications. It is true that publications are a stepping stone for one's career, but it should not be done at the expense of someone tenure or students' education. Urgent steps should be taken to evaluate this phenomenon. There should be more a supportive attitude toward teaching and classroom preparation rather than research and publication. Universities and administrators should carefully consider this “publish or perish culture and its nonsense”, and equal importance should be given to lecturers’ integrity and dedication as classroom teachers and students’ education.

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