

The Dynamics of Technology in Revolutionizing Education and Research



Education and research are fundamental to the process of progress by which we create an efficient and sustainable environment to live. Interestingly, education and research have unique dynamics wherein by influencing each other they contribute to progression. This dynamic influence, which has occurred collateral to the evolution of life, is been significantly enhanced following advancement in technology, broadly referred to as Internet of things. The influence of the technology has continued to change the way we educate and research. Starting from the early learners who were self-thought to an era where learning materials can be widely and freely accessed; we have come a full 360° and are probably entering into a phase of self-learning although with better resources available to self-learn and self-educate [Figure 1]. The availability of technology driven open access resources, put into question if the traditional approaches to learning should change to better meet the requirement of the real world. This is specifically true for most curriculums wherein only a significantly smaller fraction of learning outcomes are ever applied in a day-to-day work environment and more often need further on job training to efficiently meet the multidisciplinary work requirement or to catch-up with rapid advancements in technology. While without any doubt advancements in technology has contributed to refinement of the education process, its time for introducing the replacement component, wherein learners have a choice of pursuing education based on their strength, weakness, interest, passion,

and emotions (SWIPE). It is necessary and timely to build the component of flexible and programmed learning within our educational institutes to suit the needs of a learner. Hence, it is essential that the educational programmes are learner driven based on SWIPE rather than on any pre-set curriculum, and I believe that the available technology is suitable to deliver such a revolutionized approach to education. Adopting a technology-based revolutionized approach to learning has several collateral implications and the educators in future will have to change to newer and refined roles. For instance in higher education, the role of an educator will change from someone delivering the learning materials to someone who is facilitating and directing the learning process. We will also see a considerable change in the learning resources, which from the current print to digital ratio of 70/30 will change to probably 0/100. In my view, the significant benefits of such advancements will not only be reduction in the escalated cost of higher education but also a wider accessibility of high-quality learning resources to audience worldwide. Nevertheless, a greater vision and geopolitical will overriding the commercial interests is necessary to effectively educate and optimally skill the global audience. Good quality education should be in par with essential medicines and should be affordable and available to everyone worldwide.

While the dynamic influence of technology in revolutionizing the education sector is advancing at a reasonable phase, its relative impact on the research sector has caused considerable concerns in the area of scientific publications. Technology has helped the evolution of online-based journals, which have significantly influenced the speed, access, and efficiency of scientific publications. This development was necessary to meet the demand created by the progress in scientific research worldwide. The increasing demand when exploited by the commercial greed has considerably damaged the very ethos of scientific research so much so that the validity and reliability of reported research findings are questionable. While the problem is clearly defined, effective solutions to solve this problem will require an in-depth analysis of the process that has led to the development of this problem. Some of these problems are technology driven, for instance the calculation of various forms of pseudometrics to assess the quality of a journal. Such pseudometrics have created a false perception of elatedness and have destroyed the level playing field among

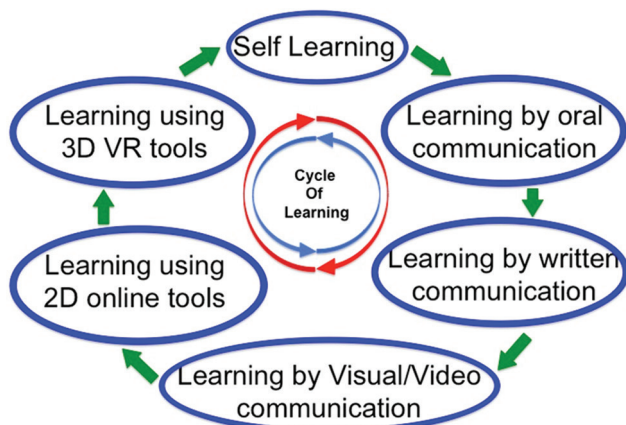


Figure 1: Cycle of learning

the scientific community. Every publication, which reports an honestly conducted research findings, has its own merits and it is important to recognise this merit irrespective of where it is published, and who publishes it. The stratification of journals based on pseudometrics also has commercial implications, as often the extent of open access or article-processing charges are direct consequence of such pseudometrics. One of the biggest contributions of the technology has been to build innovative publishing platforms, which have significantly curtailed the cost associated with publication. Although some publishers have failed to channel, these cost benefits to the authors due to business greed. In my view, most publishers, which charge the authors in four figures, can easily do well with one tenth of the costs. If the publishers fail to be reasonable in their billing, without doubt, the technology will create viable and efficient alternatives of publishing in future. From the perspectives of authors and funding agencies, if their sole objective is to disseminate the research findings to a wider audience, then it really does not matter where and how the results are published in the World Wide Web, as long as it can be accessed by a wider community. Hence, it is timely that the scientific community comes together to plan for an efficient approach to publishing their research work. Such an approach supported by the best of the currently available

technology should be free from any pseudometrics and/or commercial greed.

Sincerely,

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