

Use of Artificial Intelligence as Technology in Science Communication

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ABSTRACT

Science is based on learning derived by experimentation, observation, diverse mode of analyses and maintenance of calibrated records. Science communication methodology has emerged as an art that has linearly progressed from simple creation, chalk and talk in class rooms to use of artificial intelligence techniques, encompassing – Digitalization, Graphics, Animation, Robotics.

India has emerged as an pioneer country in development of software technologies, IT, spectra of artificial intelligence etc. Numerous upcoming universities, IITs and others are making use of these state of sensitize and make aware even a common way. Next millennium would be the age of this art and craft that is constantly rewarding.

Artificial Intelligence can be used in classrooms to explain complex physics – chemical processes that are the pivot of nanobiotechnology biomedical sciences, agro – veterinary protocols, concepts of behavioral and chemical sciences, etc.

The purpose of this presentation is to explain through two examples drawn from nanobiotechnology biomedical science some basic concepts in class room teaching and in science communication on a wider scale in India. It serves the goal of preparing curricula on science communication through artificial intelligence.

Module I – Nanotechnology: Preparation of Nano material for Genomic studies understanding the protocols.

Module II – Biomedical Science ex. Neuroendocrinology of female reproductive cycles/or Human Anatomy through graphics, animation and robotics.

KEYWORDS: Artificial Intelligence, Robotics, Communication, Nano-Biotechnology, Neuroendocrinology, Genomics System, Enzymes

I. INTRODUCTION

Artificial intelligence has emerged as one of the science that gives protocols of techniques to assemble nano particles in various ways that can be used in defence, industry, and agriculture, veterinary and bio-medical science. These technologies have greatly impacted nanobiotechnology and bio-medical science. IT has also helped in devising new ways for communication in science and technology, robotics, enzyme technology, production of gene based specific material have wide applications.

Similarly we have now moved away from chalk and talk method of teaching in class rooms to use of artificial technology. India has emerged as one of the main contributor and large numbers of its institutions are developing programs of artificial intelligence technology to reach difficult substances like human body and functions of various organs to cellular and biochemical levels. Similarly these technologies helped to understand complex genetic mechanisms. We are now revisiting a Darwinian concept of genetic evolution by artificially changing the genetic code, this in turn affects assembly of amino acids into proteins that can be used specifically to produce anti bodies, pharmaceutical drugs, specific types of food etc. evidently this has limitless possibilities.

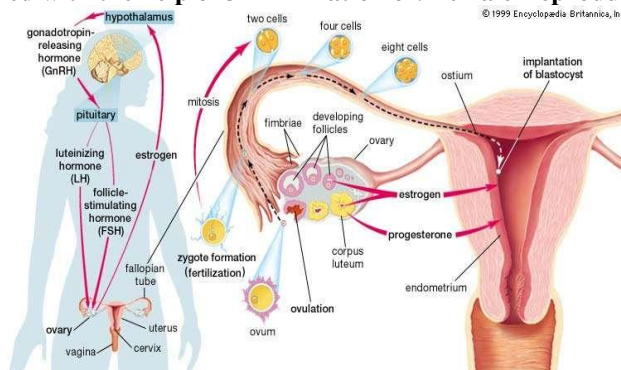
The purpose of presentation through following two modules is:

“to indicate how artificial intelligence can be used significantly in science communication”:

- **1st Module** – Nanobiotechnology deals with the basic definition, protocols and applications.

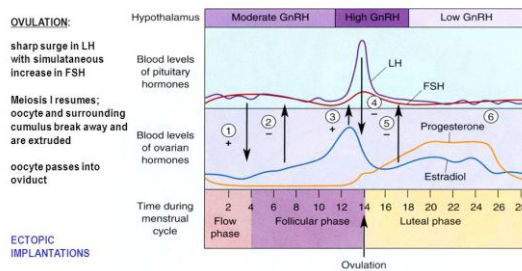
- **2nd Module** – deals with teaching about human body with basic questions of –
“Do You Know Yourself!”

1st Module will be explained with the help of 3D Animation of: Female Reproductive System

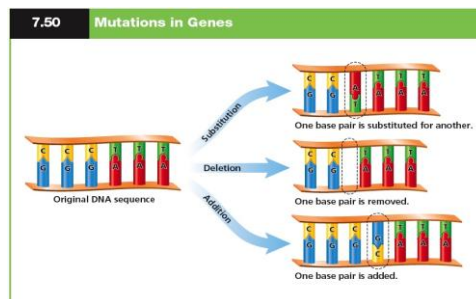
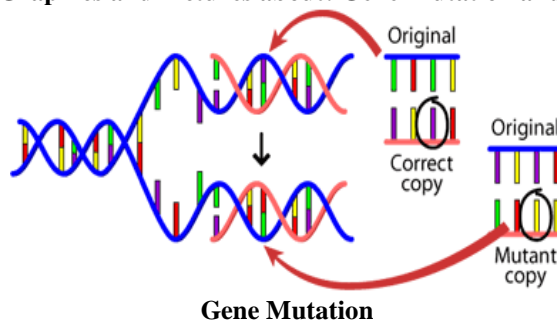


FEMALE REPRODUCTIVE SYSTEM
The Menstrual Cycle

• HORMONAL REGULATION OF OOGENESIS AND OVULATION



2nd Module – represents by Graphics and Pictures about: Gene Mutation and DNA Mutation



DNA Mutation

Nanobiotechnology is a remarkable approach in medicine progress from treating symptoms to generating cures and regenerating by biological tissues. Nanobiotechnology deals with biological research with nanotech modules – as nano-medicines, nano-sensors, nano-robots, nano-drugs to solve medical and biological problems in the path of green research towards sustainable developments for example in cancer medicines are given through nano-robots which attacks on cancerous cells leaving the healthy ones untouched. So side-effects of chemotherapy controlled and reduced. Nano-medicines causes progressive improvements of patient's health.

Vaccination formulation is also easy by nano-biotechnology. Nano-biotechnology facilitates the large complex projects that benefit the entire research community under the basics of protocols.

Second module follow Argmented Reality (AR) layers vitrtual information through smart glasses or mobile device giving the user the ability to view 3D images.

Virtual Reality (VR) supports students to interact with 3D Models with accurate response, feeling based om real world possibilites. Thus, we are promoting mental habits and understanding within an acadmic context in students.

REFERENCES

- [1]. RS Michalski, JG Carbonell, TM Mitchell: An Artifitial Intelligence approach, 2013.
- [2]. L. Bolc A. Bundy P. Hayes J. Siekmann: Artifitial Intelligence.
- [3]. PR Cohen, EA Feigenbaum: The Handbook of Artifitial Intelligence, 2014.
- [4]. DB Fogel, Evolving Artifitial Intelligence, 1992.
- [5]. T Bubela, MC Nibset, R Borchelt, F. Brunger: Science Communication Reconsidered – Nature, 2009.
- [6]. J Trumbo: Visual literacy and science communication, 1999.
- [7]. M Soloviev, Nanobiotechnology toay: focus on nanoparticles, 2007.
- [8]. S Logothetidis: Nanomedicie and nanobiotechnology, 2012.
- [9]. C Tsigos, GP Chrousos: Hypothalamic-pituary-adrenal axis, neuroendocrine factors and stress, 2002.
- [10]. PM Wise, MJ Smith, DB Dubai: Neuroendocrine modulation and repercussions of female reproductive aging, 2002.
- [11]. PD Stenson, M Mort, EV Ball: The human gene mutation database, 2009.
- [12]. PD Stenson, EV Ball, K Howells, AD Philips: The Human Gene Mutation Database: providing a comprehensive central mutation database for molecular diagnostics and personalized genomics, 2009.