

## E- Teaching of Analytical Chemistry: Tools and Technology with Special Reference to Atomic Absorption Spectroscopy (AAS)

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**Abstract**— Teaching is a process by which an instructor uses different methods to make understand a subject to a person who do not know about it and make him/her learn it. In this scenario of dot com age, the electronic mode of delivering knowledge and making it understood according to mechanism of learning using various multimedia tools, Information and communication technology is e-teaching.

Empowering this by using various forms of electronic media, information and Communication technology is called technology enhanced learning. The purpose of introducing “e-teaching of analytical chemistry: - Tools And Technology” has been undertaken with a view to put forward a new approach to classify the techniques covering the whole span of analytical chemistry with special reference to Atomic Absorption Spectroscopy (AAS). This includes all conventional and non-conventional techniques. This methodology finds its scope in imparting education and connectivity for integrating our knowledge with the advancement in the field of chemistry. We have tried our level best to suggest the modified way of teaching by using interactive multimedia tools like power point presentations, Corel draw, 3D-images and figures etc. Thus the present paper incorporates e-teaching of analytical chemistry, discuss strategy of selection mode of compilation of e-database and explain the span of analytical chemistry and focus on the topic of the study i.e.; Atomic absorption spectroscopy (AAS).

**Keywords:** Teaching, Electronic, Technology, Analytical Chemistry, AAS.

### I. INTRODUCTION

#### A. E-Teaching:

“Data base of authentic information in electronic format which may be viewed as desired monitor is an e-teacher, and the phenomenon of doing so is called e-teaching”.

‘e’ in e-teaching denotes “electronic” or teaching electronically.

Teaching is a process by which an instructor uses different Modes/ techniques to make understand a subject to a person who do not know about it and make him/her learn it.

Teaching methodologies have been revised every time with the advent of new prospects and opportunities to make it effective for the students by improving the subject matter with the help of different tools and techniques.

Empowering this by using various forms of electronic media, information and communication technology is called technology enhanced learning.

The use of computer, networking and information technology has led universities and educational organizations to plan new strategies concerning computer based teaching.

In this scenario of dot com age, the electronic mode of delivering knowledge and making it understood according to mechanism of learning using various multimedia tools, information and communication technology is e-teaching.

### II. SCOPE AND OBJECTIVE OF THE STUDY

The objective of the study of “e-teaching of analytical chemistry: - Tools and Technology” has been undertaken with a view to:-

Introduce a resolute way of teaching besides the traditional methods of teaching.

Explain the effectiveness and impact of e-teaching in the field of analytical chemistry.

Put forward a new approach to classify the techniques covering the whole span of analytical chemistry with special reference of Atomic Absorption Spectroscopy (AAS). This includes all conventional and non-conventional techniques

The study finds its scope in imparting education and connectivity for integrating our knowledge with the advancement in the field of chemistry. It aims to provide easy teaching-learning of the subject which will cover technological advances in analytical chemistry, ensuring quality higher education for all and promote excellence. We have tried to suggest the modified way of teaching using interactive multimedia tools by deploying new tools like power point presentations, Corel draw, 3D-images & figures etc.

Thus, the present paper incorporates e-teaching of analytical chemistry, discuss strategy of selection mode of compilation of e-database and explain the span of analytical chemistry & focus on the topic of the study i.e.; Atomic Absorption spectroscopy (AAS).

#### A. Why e-Teaching?

Electronic media such as mobile, radio, computer-multimedia tools and technology have become an integral part of today’s education.

Thus, there is a strong need of introducing a new concept of teaching i.e.; like e-Teaching, which can fulfil all the needs of present day learner with the implementation of new educational software’s and modern teaching facility. Nowadays, the learner demands instant retrieval of information prefers to read on monitor on click of mouse/button and expects a visual and dynamic display of the slight information and seeks more practical application.

Thus, to increase the teaching productivity and effectiveness of instructor with the help of advanced computer based technology, authenticated and concise database as study material is needed.

#### B. E-Teaching Of Analytical Chemistry

Our focus is on one branch of chemistry i.e.; Analytical Chemistry,

'Analytical chemistry' – is the science that addresses methods used to determine qualitative or quantitative composition of unknown sample. To protect the desired aptitude and approach of analytical chemistry teaching, an 'e-Teaching-Learning database' is necessary.

This (e-Teaching) may develop self-reliance by our own, exploring resources on internet and may encourage innovative ideas. It will consist of related database and hence to compile it from micro-scale to macro-scale analytical chemistry.

### C. Recent Technology

Students today use communication technology extensively. Students are already accustomed to retrieving information they require rapidly and at any time using the internet and to viewing, generating and sharing video-clips on a wide range of topics using websites such as 'You Tube'.

Nowadays, "E-Chem. Test, e-Portfolios and Podcasting" etc. are some of the recent advancements used in day-to-day study routine of the learner.

So, it is the proper time to make an effort to redesign the texture of existing theories and to give creative eye look into the subject.

### III. CONCLUSION

The segments in this paper on "e-Teaching of Analytical Chemistry:

Tools and Technology with special reference to Atomic Absorption Spectroscopy (AAS)" had discussed the need of e-teaching module, the recent advancements in technology in the field of e-teaching with the stages of teaching-learning as synchronized process have been elaborated.

As teaching analytical chemistry is a new challenge in present scenario, all the teaching tools and techniques need to be evaluated. Therefore, the whole span of analytical chemistry is being classified giving it a new texture.

The latest trend of e-teaching including different type of Information Communication Tools (ICT) using interactive multimedia tools has been designed.

Special efforts have been made to maintain the optimum authenticity and quality of content while developing e-database of selected curriculum.

It is proposed to design the e-teaching module of UG-PG level analytical chemistry according to new UGC curriculum.

The e-teaching on the basis of proposed model is necessary for analytical chemistry to provide easy teaching-learning of the subject with synchronized and modern teaching tools to provide a comprehensive teaching-learning database. This work has built a framework to support all information available, an integrated infrastructure for information as abstract.

This will help to explore the subject and encourage learner to give innovative ideas by self reliance. It will present new dimension of teaching and learning chemistry with practical functioning of instrument and maintain advancing technology.

### REFERENCES

- [1] Akacay H, Durmaz A, Tuysuz C, Feyzioglu (2000), "Effects of computer based learning student's attitude and achievements towards analytical chemistry". The Turkish online journal of educational technology (TOJET), ISSN: 1303-6521, vol.5 Issue 1, Article 6, pg. 44-48.
- [2] Barrack, M (2005). "Transition from traditional to ICT –enhanced learning environments in undergraduate chemistry courses". Available online at <http://www.sciencedirect.com>.
- [3] Bream, H. (2002). "Developing tutors skills : understanding e-learning. Higher education academy resource". Retrieved April-3,2007 from <http://www.chm.davidson.edu/chemistryApplets/index.html>.
- [4] Cambre, M. and Hawkes, M.(2001). "Twelve steps to a telecommunity. Learning and leading with technology".7(3),22,27.
- [5] Christian G.D., "Analytical Chemistry",5<sup>th</sup>Edition,John Wiley(1994).
- [6] Chemteam: main menu <http://www.dbhs.wvusd.k12.ca.us/chemteamindex.html>
- [7] Time-computer graphics <http://www.knowledgebydesign.com/time/time.cg.html>