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Title: ICT Tools in Teaching Learning of Chemistry: A Study of the Impact on the Students at Senior Secondary Level

ABSTRACT

The present study focuses on the impact of teachers using traditional method and ICT tools on the academic achievement of their students, to compare the impact of teaching with traditional method and ICT tools on the academic achievement of the students, to study the impact of teaching with ICT tools on written communication skills of the students and to study the impact of teaching with traditional method and ICT tools on the attitude of the students towards the subject chemistry and towards the use of ICT tools in teaching learning of Chemistry.

Sample for the present study comprised of 4 sections of class XII Science enrolled in Jamia Senior Secondary School and Syed Abid Hussain Senior Secondary School. Total sample of 103 students were selected from the four sections of class XII science of Jamia Senior Secondary School and Syed Abid Hussain Senior Secondary School.

Sample students in the present study occurred in naturally assembled groups as intact classes. Random assignment of students for equating the group would have disrupted the classes and was found unfeasible. Thus all the students of classes were taken as a group, and assigned to experimental variables or treatment. Since the group was taken from the same school, matching of subjects of control and Experimental Groups on certain variables may be considered to be automatically controlled.

As random assignment of subjects to control and Experimental Groups has not been applied, the present study is **Quasi Experimental** in nature. Of the many quasi experimental designs, **Pretest- Posttest non-equivalent Groups Design** was employed for the present study.

The following tools were used for attaining the objectives of the study:

I) Achievement tests: a) Pretest b) Posttest

II) Attitude Scales: a) Five point Likert scale for measuring Impact of ICT tools on the attitude of students towards chemistry(ATCS) b) Five point Likert scale for

measuring Impact of ICT tools on the attitude of student towards the use of ICT tools in teaching learning of chemistry (ATIS)

In accordance with various objectives of the study, the obtained data was analyzed using specific statistical techniques, which include computation of mean, S.D, t-test, ANCOVA (analysis of covariance).

Some of the major findings revealed by the present study are as follows:

I. Comparison of the impact of teaching with traditional method and teaching with ICT tools on academic achievement of the students

It may be inferred that there is a significant difference in the academic achievement of students taught through traditional method and use of ICT tools. When initial differences are allowed for, significant differences in mean scores (Control Group-I and Experimental Group-I, Control Group-II and Experimental Group-II) were observed between students taught through traditional method and those taught with the use of ICT tools. It may therefore be inferred that there is a significant difference in the academic achievement of students taught through traditional method and use of ICT tools. It may be interpreted that there is an improvement in student achievement when they are taught with the use of ICT tools.

II. Impact of teaching with traditional method and teaching with ICT tools on the attitude of the students towards the subject Chemistry

It may be concluded that the difference in the impact of teaching with traditional method and teaching with ICT tools on the attitude of students towards subject chemistry is not significant.

It may therefore be inferred that there is no significant difference in the attitude of students towards subject chemistry taught through traditional method and use of ICT tools and there are other factors, other than method of instruction, which have impact on the attitude of the students towards any subject.

III. Impact of teaching with ICT tools on written communication skills of the students

It could be inferred that use of ICT tools is effective in improving written communication skills of students. It may be concluded that writing competence in terms of presentation of content, figures, structures of molecules, incorporation of latest information was enhanced using ICT tools.

IV. Impact of teaching with ICT tools on the attitude of the students towards the use of ICT tools in teaching learning of Chemistry

It was found that use of ICT tools in teaching learning of chemistry in the treatment phase has resulted in changing the attitude of the students from neutral to moderately positive towards the use of ICT tools in the teaching learning of chemistry.