Computer Aided Learning(CAL)

Definitions:

Computer Aided Learning (CAL) or Computer Assisted learning can be defined as learning or teaching subjects like mathematics, Science, Geography, and etc., through computers with subject wise learning packages/materials.

- It may include all types of Technology-Enhanced Learning (TEL), where technology is used to support the learning process.
- It is said to be: "Pedagogy empowered by digital technology".
- In broader sense , it may be considered as a part of E-Learning.

History of Computer-based Learning

Computer assisted learning, or CAL, is not a new phenomenon. Computer Assisted Learning can be defined as a computer program or file developed specifically for educational purposes. The technique used throughout the world in a variety of contexts, from Primary school to University. In the 1980s, the first computer assisted learning became available to University students. The CAL Idea is highly dependent to the following educational events:

- Education Commission(1964-66), called Kothari Commission: Introduction of Vocational Courses.
- National Policy of Education(1968): Introduction of Correspondence Courses.
- Edger Dale: Cone of Learning, Cone of Experience(Audio-Visual Methods in Teaching, 3rd ed., New York, 1969).
- Jacques Delors: The Four Pillars of Education,1996(Learning to be, Learning to Do, Learning to Know, Learning to Live Together).

Implementation:

It was felt that use of Information and communication Technology(ICT), computers and developed e-teaching/learning materials in the form of CAL may help in achieving the objectives stated below. Keeping this in view, CAL, a component of computer Education has been running under 'Innovation' **since 2005-06 under the supervision of SSM,Kolkata.**

Main Objectives:

- **These visual, animated learning materials not only help to memorize the tough topics at ease but also it will act as a virtual laboratory experiments.**
- **Some so called hard subjects, viz., English, Mathematics and Science will be joyful through computer.**
- **Computer aided learning packages will serve as a better teaching learning materials.**
- **This audiovisual technique will help and motivate Children With Special Needs (CWSN) to read.**
- **Above objectives will in turn help to reduce drop out, repetition rate. Enhance in the achievement levels etc,.**

SSM believes, under this programme all pupil will accept it enthusiastically and all educational aspirants will appreciate this.

Implementation technique:

A computer room(laboratory room is must) with some computers along with an audio and visual output device to show learning packages on a large screen using an LCD projector. After discussion of subject, teacher may show learning packages on that particular topic. Student can practice and also an evaluation can take place like E-Exam(as it is also on computer and at the same time result can be displayed to the students).

Infrastructural Components:

1) Laboratory Room.
2) Computers and LCD Projector.
3) Learning Packages.
4) Trained Teachers.
5) Motivation.
6) Discipline, Administration and etc,.

Achievement:

As per DISE data analysis of the previous year CAL schools (Financial years: 2005-06,2006-07,2007-08 and 2008-09), following conclusion reveals.

Item	Conclusion
Enrolment(Before CAL , After CAL)	Enrolment Increased after CAL
Number Passed (Before CAL , After CAL)	Increased after CAL(Quality improved)
Got First Class((Before CAL , After CAL)	Increased after CAL(Quality improved)
Reference: Handout on Analysis of Educational Development Index, A Journal Published by SSM, Kolkata on 29.07.09 based on DISE data.	

Year Wise Report:

SL. No.	Issues	Year Wise Break up				
		2005-06.	2006-07.	2007-08	2008-09.	2009-10
1	Total Amount Sanctioned for CAL	15 lakh.	15 lakh.	15 lakh.	50 lakh.	50 lakh
2	Total Expenditure made on CAL	13.75 lakh.	14.00 lakh.	14.86 lakh.	49.9401 lakh	49.825 Lakh(up to 12.01.10)
3	Number of School provided with Computers	10	10	10	32	24
4	Number of Children benefited from this programme with Class	4399 (V-VIII)	4523 (V-VIII)	3585 (V-VIII)	12048 (V-VIII)	9050 (V-VIII)
5	Total Number of Teachers Trained	36	44	36	92	72
6-a	Duration of the Training Programme	15 days.	10 days.	15 days.	12 days	12 days
6-b	Name of the Organization imparted Teachers training	Webel Tech Ltd (WTL).	(WTL).	(WTL).	Jadavpur University	Jadavpur University
7	Activities approved	Computer Procurement, Teachers training, CD procurement		Computer Procurement, Teachers training CD supply, Research and Monitoring		
8	Activities undertaken					
9	Partnership with Private agency if any	No	No	No	No	No
10-a	Whether Educational CDs are procured / develop or not?	Yes				YES

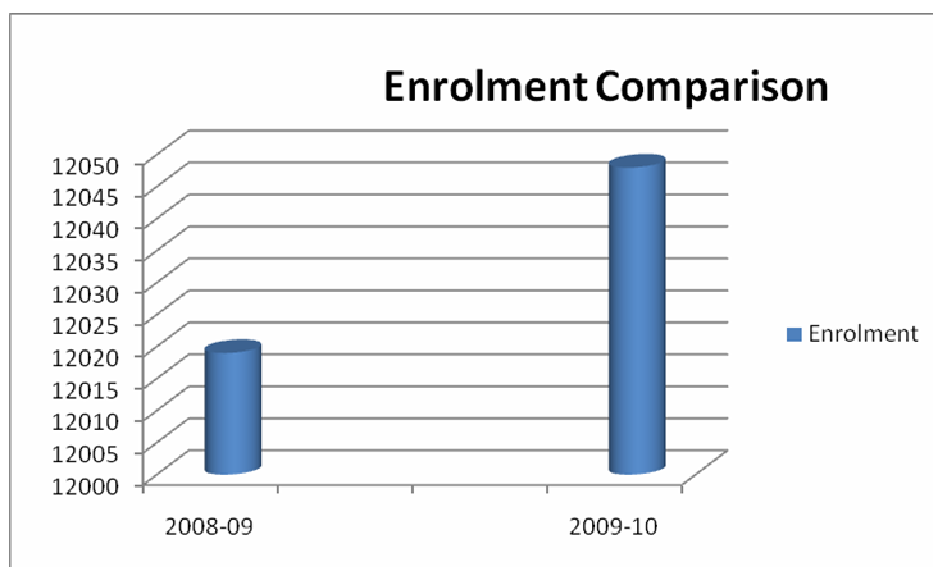| 10-b	If yes please mention the Subject and Class for wich CDs have procured or developed?	(Life Sc Class-VII,VIII from Gangaridhi pvt. Ltd) & VI, VII, VIII All Subject (SCERT&CDAC)	(Life Sc Class-VII,VIII from Gangaridhi pvt. Ltd) & VI, VII, VIII All Subject (SCERT&CDAC)	VI, VII, VIII All Subject (SCERT&CDAC)	VI, VII, VIII All Subject (SCERT&CDAC)

Two Case Studies

Case study 1:

Hypothesis: " Enrolment will increase after implementation of CAL"
Alternative Hypothesis: " Enrolment will decrease or remain steady after implementation of CAL"
Sample: 32 U.P schools under CAL programme 2008-09.
Data Source: Enrolment of 32 CAL schools from DISE, before implementation of CAL Programme(Year: 2009-09) and after implementation of CAL Programme(Year: 2009-10).
Result:

Conclusion: From the result it reveals that the enrolment increased from 12019 to 12048 in 32 selected CAL U.P. Schools. Hence our Hypothesis " Enrolment will increase after implementation of CAL" is justified.

Case study 2:

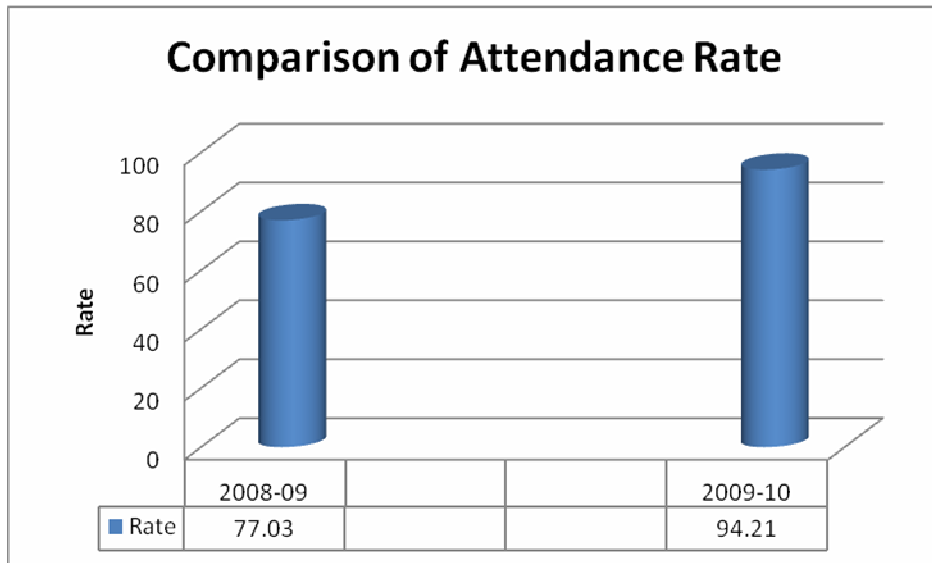**Hypothesis: " Average Daily Attendance will improve after implementation of CAL"**
Alternative Hypothesis: " Enrolment will decrease or remain steady after implementation of CAL"
Sample: 32 U.P schools under CAL programme 2008-09.
Data Source: Enrolment of 32 CAL schools from DISE for two consecutive

Result:

Comparison of Attendance Rate

	2008-09			2009-10
■ Rate	77.03			94.21

Conclusion: From the result it reveals that the Average Daily Attendance(Student of Class V-VIII) from 77.03% to 94.21% in 32 selected CAL U.P. Schools. Hence our Hypothesis "**Average Daily Attendance will improve** after implementation of CAL" is justified.

Proposed Activity:

i. Proposal of Computer Aided Learning Programme for the financial year 2010-11 for **at least 25 schools**.

ii. Monitoring and supervision for generation of monthly reporting system of schools under CAL (Computer Aided Learning) to survey students' performance as well as to note how much we are endeavoring to motivate students and teachers.

iii. Supply of LCD projector ,**one for each and every 62 schools**(for CAL programme 2005-06 to 2008-09 under SSM, Kolkata) is very much essential for the full implementation of CAL concepts. In this case , so many request has been received by this office from the HM of the schools, this activity has already been suggested by many educationists.