AGEM Demonstrations

August 27, 2011

Chennai - 15/16 April, 2010

Executive Summary

Demonstrations of AGEM technology were provided at two venues to student audiences at Chennai.

One was to a school audience comprising twenty five Class 9 and Class 10 students where a lesson plan prepared for Class 5 was presented. To our surprise the student group commented most favorably on the content, the AGEM method, and the presenters. The Maharishi Vidya Mandir School, Chetput where this demonstration was conducted is noted for the success of its students in terms of IIT entrance results.

The students' comments have been transcribed within the body of this document. We conducted a concordance on transcribed students responses to the question posed after the demonstration, "How do I like this method." The word with the highest frequency which was significant was "method." The figures followed by a colon identify the respondent. The output of the concordance is presented in the figure below:

20: I like this method as it gives us
25: I like this method as it is more
6: I like this method because it is easy
18: I like this method because it is very
5: I like this method because it makes us
somewhat used to this method because of my old
be implemented. 2: This method can still improve our
very much. 9: This method is good for over
and interesting. 19: This method uses latest technology like
24: I found this method very creative and interesting.
23: I find this method very helpful. Its easy

The other demonstration was to a group of MBA students at the VELS College, Chennai who were close to graduation. They were presented with a lesson plan made for the purpose on the subject of Learning Decision Making. At the end of it, they were asked to comment on Samar's delivery and the value of the AGEM method. A concordance of the word "getting" seemed to yield a representative pattern of the comprehensive response included in the body of this report.

a good exercise for us. This method of getting student respondence is different which we used for
to follow some education system. This method of getting student response is good. 5.I found Dr.
The session was quite good. This method of getting student responses is effective and authentic information can
who can teach very well. This method of getting student responses is good. 3.I found Dr.Samar
good and it is useful. This method of getting student responses is good. 6. I found Dr.
very informative and research oriented. This method of getting student responses is innovative and really helpful. 16.
look forward some more interactive. This method of getting student responses is very useful and informative since
ineffective in his vocal wave. This method of getting student responses is "encouragable". 9.I found Dr.
understandable in terms of accent. This method of getting student responses should be implementated from the basic
data collection on their experiment. This method of getting students response helps to state the status and
interacting with students is good. This method of getting students responses is really good. 10.Found Dr.
Rather good in his domain. This method of getting students responsibility it is necessary and creative. 17.
i realize in the situation. This method of getting students responsible is very effective in their future

Overall the outcomes of this exercise of obtaining and analyzing student feedback on the AGEM system and team seem to point to four main areas of focus for effective implementation of the AGEM system. These include:

1. The School: The feedback points to a significant void in knowledge at a very early stage. Boredom has been frequently used to describe the class room experience as opposed to the excitement of the AGEM demonstration. The AGEM method provides measurable outcomes of effectiveness, lowers the cost of education, is scalable across the country for millions of students, and reduces the emphasis on high stakes examinations.

2. A Bridging Program: Currently there are significant voids in knowledge and skills for those entering university education. These voids could be diluted through a competently designed bridging program, which would address issues such as communication ability, statistical foundations, and research methods and ethics.

3. Teacher training: For teachers to be able to exploit AGEM lesson plans to the fullest a training course of limited duration is needed to manage interactivity and stimulate conversations resulting from the instant feedback after each question. This change of mind set when complimented by the high quality of delivery of concepts by video in AGEM lesson plans could immeasurably enrich the class room environment for both teachers and students in subscribing schools across the country.

4. Corporate training: These learnings prompt the belief that AGEM methods could be used to dilute the crisis of competence that impacts our corporate environment. Hence the potential for competent and accountable training in the corporate training domain becomes an important potential area for deployment of AGEM technologies.

1 Introduction

Mr. Amaran initiated a series of meetings in Chennai on 15th and 16th of April. At some of these meetings we provided demonstrations of the AGEM technology. The team included Teyjas Schae, Amaran Jamboolingam, Samar Singh, and Manu Patel.

In this document, where students have made particularly meaningful comments, we have highlighted them in bold to bring it to the reader's attention.

2 Maharishi Vidya Mandir School - 16 April 2010

Amaran suggested that this is a potential candidate school for the AGEM system. We learned however that the only classes available on that day were Classes 9 and 10. As our lesson plans are really prepared for a normal Class 5 we were a bit taken aback at first but decided to conduct Lesson Plan 2 which deals with the concept of number. We had earlier used this successfully for Class 6 students. There were more students in the room than there were keyboards but all the students took a very active interest in the lesson. They were a veritable joy to work with. From the comments received it looks like the feeling was mutual. Samar and Manu shared the delivery.

We remain grateful to Amaran who provided the children a large sheet of paper and asked them to provide comments on four issues. The comments on these four issues have been transcribed from the originals that remain in our possession. The children happily wrote their names along with their comments in each case. While most were Class 9 there were also a handful of Class 10 students. It is surprising that they found a Class 5 lesson plan of interest. The only logic that can be derived from the comments below is that this was a foundation issue which they would have really liked to have understood much earlier.

2.1 Topic and Mode of Presentation

The students were each provided with an AGEM Keyboard and the lesson plan was shown on the projected screen. The lesson plan was the first formal plan in the sequence that had been made out for Class 6 at Maria

Niketan. The objective of the lesson plan was to help children understand the concept of number and the need for representation. The material was presented largely by Manu, with Samar doing a smaller part. We did not get to finish the lesson plan as the time available was limited but the children answered 21 questions of which 3 related to name, age and gender. The average age was 14 and there were 8 girls in the group of 25 but only 20 keyboards were provided as had been planned.

2.2 Comments on the lesson

1. : I didn't know why numbers were invented but i know now.
2. : It was very useful and it was more interesting.
3. : Very useful, innovative, interesting
4. : The most basic fundamental thing in Maths that many people have failed to understand.
5. : The lesson and the teaching method was very good and understandable.
6. : It was interesting and it was a very to easy way of learning things.
7. : It is greatly innovative and children studying in 4th or 5th would help them in a great manner, because children suffer from math. It is an awesome method for the younger generations.
8. : This lesson was interesting and helped me revise the topic.
9. : Well this lesson was interesting and it was taught to us in a better way. But it wasn't for class 10 students definitely. It was bit too easy for us.
10. : Very innovative, helps us to do it practically while learning.
11. : This lesson was an easy one when I was in V but i still used to work out. If this system was introduced earlier i wouldn't have to work out.
12. **:** I learnt more about patterns
13. **:** The main fact about it is that it wasn't boring like the normal lessons we learn. It was picturised in an interesting way that too with many questions.
14. : A very interesting and a lesson which allows students to know the reason behind this whole maths.
15. : The lesson was extremely detailed having a specific structure as to how to go about with it. It was clearly aimed at increasing the understanding level of the student, while at the same time it was pretty enjoyable,
16. : I feel it was cool the way we used the individual keyboards to interact with the teacher. This is a very useful way to teach because normally in school we don't understand the lessons but this method explains everything.
17. **:** It was an incredible method of learning numbers. It is one that must be adopted in schools which teach the basics practically and it is an innovative method of teaching**.**
18. : This was very interesting. I liked it a lot. It was very informative. It is easily understandable. I felt this method very different. It would be definitely useful when it comes into our teaching method. No one will feel studies to be boring.
19. : The lesson was great. I've gained a lot of interest.
20. : This lesson was very interesting. I enjoy it through out.
21. : Nice as it involves the history and present application of these lessons.
22. : This lesson is about the counting in early stage and the no of patterns counting can be done.
23. : Very interesting. Can understand easily.
24. : It was interesting, we came to know about the importance of symbols, patterns etc and why they are used and how they were found.
25. **:** The lesson was very interesting and not like the lesson taken in our classes. It is different from it.

2.3 Comments on Samar's performance

The children have been very complimentary, yet neither Samar nor Manu have a B.Ed without which we could not apply for a job in a Govt. School even. The issue is neither our expertise nor our competence. The real issue is the research and preparation that goes behind these plans. That sort of work needs to be centralized and not replicated by every teacher in the country. Replication of this work is a massive waste of time. We found each lesson plan required at least 1 man week of preparation. There is no way that a teacher in a school could afford that sort of investment even if they had the background in research to use all the information that we sourced.

1. : Old man but has a "young man" attitude.
2. : His idea is good his teaching was ???
3. : Looks studious. Perfect gentleman.
4. : A great deal of knowledge on the history, different concepts, with lots of research involved.
5. : Mr. Samar is very interesting and knowledgeable man. I like his teaching method.
6. : He had explained the things very well through this concept.
7. : He was more interactive with us. His way of teaching was good. And more over a good vocabulary or the fluency in his language which is more understandable. And a hands off for his new system.
8. : Nice explanation and a good system
9. : Though he taught us only a small part of the lesson he was quite effective and made us know the concept better.
10. : Taught us deeply about the need for calculation and quantities.
11. : Samar was good and swift in the comp when Manu was teaching and when he came for teaching he told us about some good facts which were interesting.
12. : Professor who was present here spoke fluently. He taught about patterns and made me understand about this chapter in an easier way.
13. : He seems to know a lot about how to teach children!
14. : I felt it great listening to his lecture even though he took the class only for a little time.
15. : I don't think i got his name right, but he seems to be a very confident person, who surely knows what he is doing. He takes a great effort in the teaching and was very serious in a good way about the class.
16. : Nice man. I like the fact that he is fluent in English because i find it hard to communicate with some teachers because they don't understand my accent.
17. : He is a very good professor with extreme knowledge of brilliance. The way he taught us about the concepts of number was pretty impressive, his communication skills are also adorable.
18. : His explanations were very clear. I found it easy to understand. He explained it very well.
19. : His English fluency was excellent. He gave us a clear idea of what all this actually was, and his teaching was awesome.
20. : He explained everything very nicely and patiently. He was also teaching clearly. He was very kind.
21. : A very calm and composed man who has a very deep understanding of things.
22. **:** Well i would like to say that bring this type technology is a superb idea by Dr. Samar.
23. : He was very good. He taught us well. I was able to understand very easily.
24. : He was very clear about what he said and explained very well.
25. : I like the way he teached us the lesson and introduced the way of teaching.

2.4 Comments on Manu's performance

The children make the point very nicely that the personality of the teacher creates the emotions that allow learning to take place. This is one of the latest findings of neuroscience that far from being a distraction, the development of appropriate emotions is an essential factor in learning. Even Manu cannot re-create this performance day after day. For this reason, we will create a video presentation of important concepts embedded in the lesson plan so that students could have the benefit of quality assured development of positive emotion. This is an irrationality that video permits.

In the comments below, the children talk a lot of the interaction that they enjoyed, yet hardly a word was spoken by the students although a lot was written. Clearly the perception of interaction is not a function of oral communication which has to be serial as opposed to the communication with keyboards which is always in parallel. Written communication also forces students to grapple with and overcome the issues that differentiate oral and written communication such as prosody and visual cues.

1. : Nice guy. Good teacher. Very frank and friendly.
2. : Even he was teaching very well. He was cracking jokes and made the session interesting
3. : Very nice and jovial. Good body language.
4. : Makes the class more interactive, understanding the minds of the young generation.
5. : Manu is very good in teaching and his way to interact with students is wonderful.
6. : Manu made the class very interesting with his fun way of explaining the concept.
7. : Talking about Manu, first a good looking person or a handsome guy as Dr. Samar sir said. Good in his profession. Great in his communication.
8. : Nice presentation by him.
9. : He was superb. He taught us in a much easier and better way. Mind blowing!
10. : Very interactive and jovial
11. : Manu was awesome and he can explain incredibly well. I liked his way of speech and it was easy to understand.
12. : Mr. Manu, I must say he made the class interactive. His sense of humor and teaching were awesome.
13. : He is quite interactive and he explains things in a different way.
14. : He is a person with a good interactive skill and he is a person who attracts people by the way he speaks. It was awesome listening to his lecture.
15. : Well firstly i like his name. Sounds a lot like my favorite football club. Anyway i felt that he is a very nice teacher, who according to me wants kids to learn in an enjoyable environment. His class was fun and he cracked a few funny jokes in between.
16. **:** I feel that he has the ability to teach the class and not bore them to death. I like that because i get bored easily.
17. : This young handsome lad has an innovative way of interacting, communicating, and teaching. He is one in a million, who is the right teacher or communicator for us. Keep it up mate!
18. : He was very good in his explanations. He was interacting with us very well.
19. : His English or teaching was no less. His class was very interesting with a bit of jokes here and there. He was very energetic.
20. : He also explained everything properly. He was polite and he taught very clearly. He was also very active.
21. : Nice guy. An efficient teacher. Could have been a bit humorous.
22. : If we adopt this technique in learning we like that the teacher should be like him and should know how to teach in the new manner.

23. : Interacted well with students liked his method of teaching.
24. : He also explained very well.
25. : I like him because he was teaching us as a friend and was a good entertaining man.

2.5 How do I like this method?

1. : Very weird yet effective. Not boring. Should be implemented.
2. : This method can still improve our general knowledge. This is good
3. : This was very useful to me. I had a good opportunity to know more about the patterns and its uses in our daily life. This is really a good system and better team.
4. : Very useful and also helpful in making students understand concept clearly.
5. **:** I like this method because it makes us to express the answer individually and not in groups. Teachers can find out the capacity of the students by referring his answers.
6. : I like this method because it is easy to understand and also you come to know how things were different in ancient time than now.
7. : Its more interesting and a great platform. Easy to understand and able to remember.
8. : This is a good system helping students to a better interaction with the teachers. I like this system very much.
9. : This method is good for over tired fingers because we do not have to write anything and teaches us in detail.
10. : It is a new way of teaching. I think this would become a success. Wish you the best!
11. : At first i thought it would be silly to learn 5th standard portions but the way they taught it was awesome. I feel like reading from 5th for another time.
12. : I thought the class would bore me by seeing the professor, ironically, it was interesting.
13. : It is very good. The best way to learn (that's what i feel) things.
14. : I like this lesson more because it allows us to interact with the lectures, and its one which helps us know about math.
15. : I like it very much there is nothing more I'd like to say. I enjoyed it and this is how studies should be.
16. : Cool way of teaching. I am somewhat used to this method because of my old school. So i am happy that i could go back to learning like that.
17. : It is an impressive one which takes us out of the burden of theoretical cramming, provides us with better practical experience.
18. : I like this method because it is very different and interesting.
19. : This method uses latest technology like bluetooth etc. Screens are used which makes it easier for students to see the letters/words. Boards and chalk don't work out this well.
20. **:** I like this method as it gives us more chance in answering the questions. It gave us more opportunities. It also gives us more memory than reading books.
21. : Not boring because it involves gadgets (mainly a keyboard instead of a pen). Should be implemented.
22. : This is an unique and interactive way of teaching.
23. : I find this method very helpful. Its easy to understand.
24. : I found this method very creative and interesting.
25. : I like this method as it is more interesting to listen and answer it in the keyboard. It also helps to remember a thing which is learnt.

2.6 Any suggestions

1: Sound effect to videos or animation should be included.

2: I think (i.e.) my personal opinion it can be implemented in our school.

3: This was really a perfect team. I don't have any suggestions for them.

4: More scope for students to answer and express their opinions.

5: With the keyboard a small screen should also be provided. It helps the students to find out what they answer.

6: More topics can be explained by this method so that we find it easy to understand.

7: It could also be implemented to higher class students as i love this method a lot.

8: There could be another program to automatically show the number of students written. And in this case the identification number of the keyboard from which no input was given.

9: Well i think we should be taught some more difficult topics that are included in our syllabus.

10: Can promote this type of learning in our school and other schools also.

11: None!

12: None

13: None

14: The time should be increased. Many classes like this and other classes which help us know about the things, should be increased.

15: None.

16: The lesson moved at a very slow pace so you can explain a little faster.

17: It sometimes can be made into a real practical experience instead of sitting in a class. Keep it up guys!!

18: None.

19: Screens should be provided to the keyboard, so that it is easier to know what you had typed.

20: This class can be continued in this same way.

21: Should involve more interactive sessions than question answer type.

22: I would suggest to improve this system by putting up video to explain

23: None

24: I want this method to be introduced and used in every school for better education.

25: Everything was good!

3 Conclusion

These results show that the AGEM methods and technologies have relevance for both school and tertiary level students, as well as corporate training programs. There are many other aspects of the AGEM proposition that the students were not exposed to - such as lessons based on their needs, the value of near and long term feedback, and the sessions of reflection on their own performance, all of which create significant impact.

In many cases, the failure of communication ability is a potent factor in learning. There are important differences between oral and written communications where the absence of prosody and visual cues requires different skills that impact learning in all subjects. The AGEM approach requires the concurrent development both of mathematics and communication ability before extending to other subjects.

One of the primary learnings from these demonstrations was that both the children and the MBA students had significant voids in their own learning e.g. Student 4 at MVM who said of the topic, "The most basic fundamental thing in Maths that many people have failed to understand.". With high quality lesson plans which are distributed across a large number of schools we can ensure that learning the fundamentals is not dependent on the skills of an individual teacher.

The MBA students could have done with better skills in scanning text for essential information. There were no correct responses to questions where there was a requirement for identifying a phrase within a paragraph, and there was limited capacity to respond to questions which were free form. These skills can be built relatively easily with the AGEM approach for a large number of students at any one time.

While it is easier to build skills in younger children rather than in adults, we have come to the conclusion that a bridging course for tertiary level students in communication skills, statistics, and research methods would provide considerable leverage to the university experience.

The current absence of interactivity in the classroom and the focus on discipline needs to be altered. This implies a training course for teachers of about 3 weeks for those who would wish to use this method effectively. The primary focus of such a course would have to be a change in mindset and experience with conducting lesson plans of this quality, rather more than issues of domain knowledge.

Finally, we believe that issues that imperil university education currently, are also responsible for the crisis of competence we are witnessing in the corporate domain. For instance, Infosys is reported to spend twice as much on training as is done in the United States and Nasscom reports that 'indian IT firms reject 90 percent of college graduates and 75 percent of engineers who apply for jobs because they are not good enough to be trained'.[1] Hence there would appear to be a potent role for AGEM methods in the sphere of corporate training.

We are hopeful that this document will enliven the debate on education.

[1] http://www.siliconindia.com/shownews/75_percent_Indian_techies_unemployable_Nasscom-nid