

Supporting
Mathematics
Learning for
Adult
Learners via
Maths
Software

8th Annual
Irish
Workshop on
Mathematics
Learning
Support 2014
Tallaght IT
Anthony
Cronin - UCD
- 31st January
2014



Supporting Mathematics Learning for Adult Learners via Maths Software

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Schedule

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Background

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Access to Science & Engineering (2 semesters-72 hours-
27 Adult Students)

Extra Support for 2013/14

- 9 hours of extra support in the MSC (pre-module)
- A diagnostic test to identify key algebraic techniques (ratio, proportion, fraction, unit conversion etc).
- Late evening openings on Tuesday and Wednesday
- 3 Hour intro to **RealizeIT** software
- Access to **RealizeIT** software (40 days)

Participants

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- 7 students used the system
15th October-November 25th
- 4 nodes
 1. Indices
 2. Linear Equations
 3. Functions
 4. Statistical Models

Results

Table: Pre/Post -Test Results

Student	Pre-test	Post-test	Final Mark
1	8	62	61
2	40	67	56
3	45	93	60
4	50	*	70
5	65	80	87
6	70	88	51
7	90	100	94

Average of sample=69% - Average of class=66%

Feedback from interviews

4 themes emerged:

- Usage of system (how long/often & how easy)
- Usefulness
- Improved knowledge/confidence of the basics of mathematics
- Desire to use it for other science modules

<http://www.youtube.com/user/RealizeItLearning?feature=watch>

Usage of system

"usually an hour to two hours at a time"

"I used the software for about half an hour everyday, I thought little and often would help it to sink in better."

"I'd usually try to use it for around a half hour at any one time. In retrospect I wish I had used the tool more frequently."

"I used the system 3/4 times in total-Usually for a period of 30 mins to an hour each session."

Usage of system

"I definitely logged onto the system a good few times and used it in those sessions for usually an hour to two hours at a time."

"I must admit I did not use it often enough or with any great consistency. The first term as a part time mature student is a great learning curve. I really only began using it a couple of weeks before the Christmas exams, so maybe 2 to 3 weeks and for only an hour or two at a time."

"I would use this system maybe once or twice a week. I would use it maybe for 2-3 hours when I did."

Usefulness

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"I found the math software extremely helpful, my math skills were very poor and I hadn't done anything math related since my GCSE's in 1996 so I had forgotten pretty much everything except how to add! "

"I did find it useful as I found that the explanation and the practice questions made the subject stick much better in my mind. I think I'm a visual learner and it's beneficial to have a system that allows you to take part in the demonstration to really break down the subject material to a level where I can understand it. "

Usefulness

"It was great for the algebra and all the Cartesian plane stuff, pretty much everything we did with *****. I found it very easy to follow and the explanations of how to do things were great. I would have liked more in the word problem section as I find these difficult and the questions seemed to be very repetitive. I was at a bit of a loss when I realised it didn't teach graphing quadratics, differentiation and logs as I really relied on it for practice and to teach me what I didn't understand in class."

"I found the system really useful when starting a new topic in maths or when revising a topic to highlight and fill in the gaps. I didn't find it as much use when I had a specific problem or when I was trying to get more information on a specific section of a topic. This type of information could be in there but I had a few problems finding it."

Usefulness

"Yes I found it very useful. It broke topics into easily managed chunks and you could only progress after reaching required level in basic topics. I liked that it gave you a colour coded chart of how well you had performed on each topic."

"Overall I found it very useful it was easy to navigate and made whatever area I was having trouble with easier to understand. My only complaint would be maybe if the areas where a little more in depth sometimes I had finished an area but I still didn't think I could fully tackle the area."

"It would have been far more useful if I had used it earlier and done shorter sessions, rather than try skip and jump around targeting specific topics in a hurry. I was trying to use it as a quick fix before the exams, so I found it slow which of course is my fault and not the programs fault."

Improved knowledge/confidence

"Yes, it greatly improved my ability and confidence in quite a short space of time, my husband has always made fun of my maths abilities and now I can do things he can't! I definitely put it down to this programme. I don't think I could have achieved such a good mark in my maths assignments without it, to have it at my fingertips was great. You can only do the practice sheets so many times before you remember the answers but for the most part the programme had a large catalogue of questions."

"Yes, definitely, when I used it for topics I knew I was generally weak at, I noticed that after a while, I was able to answer the questions faster and more easily."

Improved knowledge/confidence

"Yes, I do think it helped me to better understand some of the material as mentioned earlier, I found the demonstration coupled with the practice questions half way through helped me to understand the method of working out a problem, and if I got stuck I could return to the places I was getting stuck"

"Yes it increased my knowledge and understanding of indices and helped me to get my head around the basics."

"Yes I do believe it improved my knowledge and confidence. When having an issue you could always use this resource and while sometimes it didn't leave you with a full understanding it certainly helped and improved my knowledge."

Desire to use in other science modules

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"Yes definitely we have physics coming up this term so I have no idea what's in store for us, it would be good to have for practicing any of the equations we might get. Also if it could do stoichiometry and other chemistry stuff it would have been a great help as I spent ages trawling the Internet looking for new examples to practice coming up to exam time."

"Yes, I think it would be really useful to have this type of resource for use with other subjects. There are so many different web sites and online resources but it is very helpful to be supplied with a resource by the maths Department, it takes a lot of the guesswork out of whether it's a good resource or not. "



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"I would very much like to have a tool like this with other subjects. This type of tool could be really useful for stiochiometry in chemistry. I found the visual aid useful to have when I got stuck working through a problem and I didn't have to search through a load of video demonstrations on the internet."

"Yes most definitely, I certainly wouldn't solely rely on it for my Maths learning but it is a great tool to go to when having issues and to help with understanding any areas of trouble. It could only be a good thing to have this resource on other Maths related subjects."



Where to next?

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