

HOT MILKY DRINK

THINK OUT OF THE XBOX AND LOOK A LITTLE CLOSER AT POTENTIAL OF COMPUTER GAMES AS TOOLS FOR LEARNING

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March 31, 2007

Doctor Kawashima in the P.6 classroom

Some time ago I had a hunch, a gut feeling that [Doctor Kawashima' Brain Training](#) for the Nintendo DS was a tool that had a locus of some kind in classrooms. I remember having the same feeling many years ago when I first saw the [Logical Journey of the Zoombinis](#) and that game proved to be incredible as a learning tool. Anyway, For those of you who have played Doctor Kawashima then you will know that much of the research that informs the games design is based on the fact that increased cognitive challenge means increased blood flow to the brain. This is, as Doctor Kawashima argues, just what a healthy brain needs to keep it active and alive!

I couldn't help feeling that this message was similar to the rationale that is given for the [Brain Gym](#) programme that many schools in Scotland have embraced. a programme that has, yet to prove itself in my opinion, that it really does make the difference in terms of effectively preparing children to learn or even in helping to enhance cognitive performance.

I was sure that the fantastically challenging and engaging world of Doctor Kawashima could have a positive influence and effect on learners mental maths abilities and subsequently their self-esteem/self-concept so I decided to carry out a small scale research programme, under the auspices of my employers [Learning Teaching Scotland](#), to see if it did. You may get the feeling that I am rather biased before I start so in order to show that my approach was as objective as possible here's a brief look at my methodology which ran over a 10 week treatment period:

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Getting ready for SLF '07. These presentations need finishing! 18 days ago

- One class with Nintendo DS & Doctor Kawashima each to be used for 15 mins a day then a brain age check every Friday
- One class to use Brain Gym activities for 15-20mins a day where and when appropriate
- One class as a control group that did neither of the above

- These were P6 classes (some P5s involved though due to composite)
- Pre-tests: 100 sums of addition and subtraction within 100 and multiplication and division up to the 11x table PLUS Burnett self-concept questionnaire
- Post-tests: as above
- Research integrity involved the teachers using Google docs to detail the weekly use of Brain Gym activities and the notation of Nintendo users decreasing (or increasing) Brain Age

My project finished this week and I now have the DSs returned from a class of children who have shown remarkable results in relation to the improvements of the other two classes. At this stage the results seem to show that:

- every child in the Nintendo class has improved either the speed at which they complete the 100 sums, their accuracy or both. These improvements have seen children knock 7-8 minutes of their time and some children, who are Level B Maths and learning support, move from 23/100 to 68/100. All within three weeks.
- The amount of children who can now do the 100 sums (and achieve excellent results) in under 10 minutes is far greater in the Nintendo school (seven children) than in the other two schools. In fact, no child in the other two schools did the sums in less than 10 minutes in the post-test
- The class ethos has been transformed. The children were so used to coming in, taking out their DSs and getting on with their Brain Training every morning. The children have remarked on how much calmer the class is, how there is less fighting, arguing and moaning and how much they enjoy seeing each other get good scores (although they want to improve their's too.)
- The class teacher and the SMT feel that the biggest success has been in self-esteem development and the class bonding as a group via this game and that they didn't want to give the DSs back to me.

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There does not appear to be a similar result set from the Brain Gym class or the control group class.

I'm off to analyse the data in a much more systematic way over the course of the next few weeks but I have been so excited by my first look at the results that I had to share some of my early observation with people who are interested.

I feel that the arguments and theories about games and learning continue to need real substantiation and a models of practice that a accessible to teachers and local authorities. This project and approach did not cost that much but it appears to have had so many positive effects on the children and the class as a whole.

Hopefully a more systematic analysis of the results will make a positive contribution to the games and learning debate. I'll keep you informed once more is known.

Technorati Tags: [Doctor Kawashima](#), [DS](#), [Nintendo](#)

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Comments

This is such a joke. There is absolutely NO science behind this product. Give me some studies that have been reviewed by peers. Give me something other than memorization improvements. We all know thats something that wont last.

If you want a product that really worsk and really lasts over time. That has scientific studies done by peers, has been reviewed in PNAS...you should checkout Posit Science.

<http://www.positscience.com>

Everything else is just junk science and a waste of your money.

Posted by: [Matt](#) | [March 31, 2007 at 07:33 PM](#)

I also got a comment from Matt when I mentioned the DS - he, too, has a bias given his apparent link to Posit.

I refer Matt to the recent study from Bournemouth Uni:

http://www.techdis.ac.uk/index.php?p=2_1_7_9

Improvements here, too, using Dr Kawashima. And the game WAS designed with scientific background to it.

Thanks for sharing this so quickly, Derek. Can't wait to see your full report on the LTS site.

Posted by: [Ewan McIntosh](#) | [April 01, 2007 at 02:58 AM](#)

It's not a joke Matt. My small scale study has given data that HAS shown great improvements in mental maths ability in this P.6 class. As I said, the data needs to be fully analysed but early signs are positive. I don't want to make games based learning work where it doesn't just to support any agenda that I may have... Maybe this study will lead to a larger scale study but we'll need to look at this. For me choice of resources and methodologies in teaching and learning is all about appropriateness and whether they work with, or for the learners that will be using them.

We have videoed the children at work/play, we have videoed the children talking about their experiences and we have videoed the teacher and Deputy HT talking about what a positive experience it has been for the children both cognitively and affectively. I hope you can remain open-minded enough to wait to read my full report and to view the videos as soon as they are released before you make your mind up. I'll keep you posted.

Posted by: [Derek Robertson](#) | [April 01, 2007 at 04:24 AM](#)

I've also had a comment from Matt – when I was talking about Minc Genius (another DS Game) the other week.

Derek, I can't wait to read the rest of your results. As you indicate in your post it's not just the improvement of mathematical ability. But also the improved bond between the class that needs to be considered here. I'm also looking forward to the secondary trial.

On another note Brain Academy comes out for the Wii this month!

Posted by: [OllieBray](#) | [April 01, 2007 at 04:43 AM](#)

Derek, this is really exciting news. Interesting that the use of the DS Lites actually calmed the class; seems that shared purpose and self-motivation, as well as shared goals leads to increased quality time on task! Can't wait to read more of your results.

Posted by: [Kim Pericles](#) | [April 01, 2007 at 07:22 AM](#)

Sounds great Derek.

I don't know if is Derek's science is strong enough, but it look a lot better than the way a lot new initiatives seem to be tested.

If you want another test done Derek (a west coast one would be good for geo-balance (a pseudo-science concept I've just invented), just send me the kit.

23/100 to 68/100 would be good enough for me;-)

Posted by: [John](#) | [April 01, 2007 at 07:28 AM](#)

Kim,

The affective aspect of the study was rather unexpected but delightful to find out about.

John,

We could always do a replica study but I've another couple of ideas regarding these consoles and associated games. I'll be in touch and we'll get something underway. One thing I want to add about the Kawashima project is that thye teacher was/is an NQT in her first post. No real history of ICT experiece and expertise. I think this is important when we try to sell/promote such approaches to the wide teaching population. You don't need to be an ICT guru/expert to successfully use these resources and approaches.

Posted by: [Derek Robertson](#) | [April 01, 2007 at 10:14 AM](#)

Interesting stuff. We did have a discussion about buying this kind of thing at the end of year when we were discussing the best way of using study money, but think it was a bit late in the day to do anything about it. Certainly something to consider again next year.

I don't think though that using games such as these should become Brain Gym versus Games debate, there is surely a place for both. I've watched our S1s do some Brain Gym exercises every morning since they came into school in August and the difference in their coordination is noticeable - I was quite stunned at how uncoordinated and unsupple some of (most of?) these 12 year olds were. PE teach does some exercises with them every morning, beginning with simp exercises and increasing the difficulty over time, eventually they'll start doing some yoga and tai chi as well. Anything that gets them moving a bit has to be good.

Posted by: [Lynne](#) | [April 02, 2007 at 07:19 AM](#)

I agree Lynne. I was interested to see what effects both approaches would have given the short time the children had within the day and over the course of the 10 week treatment period. To tell the truth I

am not wholly convinced about the efficacy of Brain Gym but there are lots of schools/teachers using it and talking of the benefits in similar ways to you. I don't think for one minute that my study is going to debink Brain Gym but I do expect greater evidedcent of payback when you consider how much time and effort is devoted to its approach and use.

Posted by: [Derek Robertson](#) | [April 02, 2007 at 11:21 AM](#)

I think the Brain Gym effects are probably built up, by the time we've done the register, signed planners, handed out letters and read out notices they probably only get around 2 minutes out of 5 minutes registration.

I know yoga and tai chi aren't quite the same as Brain Gym, but I once saw a piece on tv about a school which started off each day with meditation and yoga, concentrating on breathing and focussing the mind and they had noticed a difference in results.

Posted by: [Lynne](#) | [April 02, 2007 at 11:40 AM](#)

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