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Education

How Nintendo can boost your child's performance in maths

The Nintendo DS is often viewed with suspicion by teachers and parents

Tue Nov 10 2009 - 00:00



The Nintendo DS is often viewed with suspicion by teachers and parents. But new research suggesting Nintendo can be good for your kids is changing attitudes, writes **LOUISE HOLDEN**

SCREEN worship has made our children unfit, unfocused and easily bored. So the talking heads tell us, usually via a screen. Parents are regularly scolded in the media for replacing football with Wii, reading with the web and conversation with Nintendo DS.

The Nintendo DS is a particular plague on our houses. Traditionalists can't stand the sight of children in restaurants or on buses with their heads stuck in the tiny console instead of identifying wild birds or chatting about their feelings.

Now, at least two schools in Ireland are starting to view the pocket gaming device in a more positive light. In urban Tallaght and rural Clonlisk, lateral-thinking adults are using the children's own channels for learning, and the Nintendo DS is proving a profitable platform.

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Unlike a laptop computer, which costs hundreds of euro, poses numerous technological and security challenges and cannot fit into your pocket, the Nintendo DS is small and easy to operate and thousands of Irish children have one.

Robbie O'Leary, principal of Sacred Heart Senior National School, Killinarden, Tallaght, has been using the DS in class to help fourth-, fifth- and sixth-class children with maths.

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“You really have to see the difference to believe it. Like most schools, discipline is an issue and it can be very hard to get a class full of children to focus as a group. In my 30 years of teaching, I have never

witnessed the level of concentration and application I have seen when the children are using the consoles. It would knock you back to see it.”

There are now four teachers in the school using the DS as a teaching aid, following the lead of teacher Gerry Diver, who introduced the concept last year. There are now plans to get every class involved in an eight-week programme each year, working the DS games such as Brain Training and Maths Training into the teaching plan.

“It’s important to point out that this is useful in the context of a wider programme of learning that mixes a number of approaches, including more traditional teaching methods,” says Diver.

“It’s not that a few minutes on the DS every day will radically improve test scores by itself, but it’s proving to be a very important component of maths teaching here at Killinarden.”

Diver and his colleagues are using Nintendo applications such as Maths Training and Brain Training for half-hour sessions with students who are having trouble with the maths syllabus. As the panel below shows, the school has recorded concrete results from the experiment.

There are several reasons for its success as a learning tool, according to Diver. “Many children have a block about maths. They see it as impossible, beyond them. However, they don’t have a block about using the DS because they associate it with play. The confidence they get from success on the DS helps to break the block and impacts on other areas of learning as well.”

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This notion of association – books with school, technology with home – is another important factor in the learning process. “Lots of kids, and their parents, have this idea that learning ends at the school gate. If we can bring more fun into the classroom and more learning into the home, we experience more success. I’m getting great feedback from parents about the use of the DS, which 95 per cent of our pupils have at home anyway.”

Despite this, the school has invested in its own stock of consoles.

Given the size of Sacred Heart Killinarden, it was considered too complicated to try and manage the children’s own hardware in the classroom. In the smaller national school of Clonlisk, Co Offaly, however, Ban Ryan gets the children to bring in their own.

The value of the retired teacher in the Irish classroom has been questioned of late; Ryan’s work makes a strong case for the defence.

After 41 years as a teacher and principal, she has devoted her retired years to developing technology use in Irish classrooms, testing her theories during her five hours a week as a Special Education Needs (SEN) teacher in Clonlisk National School.

“When I retired, I was given a Nintendo DS as a present from a friend – she thought it would help me to keep my mind active,” says Ryan, who served as principal of Lismackin National School for more than 30 years.

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Far from sitting at home playing Brian Training, Ryan made herself available for teaching hours at her local school and began to use the DS as a teaching aid with the SEN students.

“They just brighten up when they see the consoles because they are familiar with them,” says Ryan, who now works with the regional education centre to share her pedagogical discoveries with other schools. “I started with Brain Training and then began to research the links between my learning targets and other DS games. The children themselves have suggestions of games with learning components that we can use in class. I use multiplayer games like Dr Layton’s Curious Village and Maths Training, so that groups of



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Ryan has always been interested in the potential of technology in learning and in the concept of active learning, and has been developing new approaches throughout her career. “Just as I was retiring, it all sort of clicked in my head – how to start tying all the elements together. The fact is, we can’t teach the way we learned. These children are born into a different time and we have to use the media that they’re comfortable with.”

Ryan, who has also found use for the Wii console in the classroom, is uncomfortable with the idea of promoting products on behalf of Nintendo, but she says that the principle would apply with any gaming technology. Robbie O’Leary attempted to get Nintendo on board with his project in the hope of cutting costs, but got no response.

“On the whole, I think it’s better that they didn’t get involved with us,” says O’Leary. “There’s no agenda to this project, no commercial pressure to take the programme in any particular direction.”

There’s no sign of state support for the DS learning initiative either, although O’Leary has approached the Department of Education about it.

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“There is definitely support for the idea, but whether we can get money for it at this time is questionable.”

They may not have responded to the Irish teaching fraternity, but Nintendo is not insensitive to the potential of its product in schools. Next year, in Japan, the company will launch Nintendo Classroom. This will allow teachers to network with DS users through a PC or laptop and contribute to the development of games and learning programmes.

So, is it okay to let little Johnny have that extra hour on Mario Kart? Not quite.

Teachers have identified specific games that help to build literacy and numeracy skills (see panel, right).

The benefits for children have been recorded in the context of a structured programme that still includes the old reliables – the 3Rs, chalk and plenty of talk.

Rated and recommended: The best DS games for your children

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Professor Kageyama's Maths Training Used by the teachers of Sacred Heart Senior National School in Killinarden, the game has been used to help pupils there to improve both their confidence in maths and their test scores.

Dr Kawashima's Brain Training: How Old is Your Brain? This problem-solving game is used by older children in Killinarden and has also been positively reviewed in a study by Learning and Teaching Scotland, in association with University of Dundee.

English Training for Nintendo DS Lite Extensively used in German, Japanese and other foreign schools to help students improve their English language skills

Professor Layton and the Curious Village Problem-solving game with attractive graphics, recommended by Ban Ryan of Clonlisk National School for use with SEN pupils in particular

P.S. If you don't fancy forking out €100-plus for a DS Lite, maths teacher Oliver Murphy of Castleknock College recommends good-old fashioned Monopoly, a board game he says will help children with a range of mathematics concepts such as probability and profit and loss.

Thumbs up for in-class gaming

Teachers in the Sacred Heart Senior National School in Killinarden in Tallaght decided to test the use of Nintendo DS gaming devices as an aid to teaching maths.

Three classes spent approximately 15 minutes a day using two games, Maths Training and Brain Training. All three classes in each grade were given mathematical tests (Drumcondra tests) before and after the trial period. The results of the Drumcondra tests were as follows:

In 6th-class maths, relative to their peers, the Nintendo group scored substantially better. Gains were "obvious and significant".

In 5th class, the maths results were largely replicated. The average gain in the experimental group was 6 percentile points higher than in the control group.

In 4th-class maths, almost every pupil in the Nintendo group improved their score in comparison with last year – the average increase was more than 10 percentile points.

The children who made the greatest gains were those (in 4th class) who had been using the game both in school and at home.

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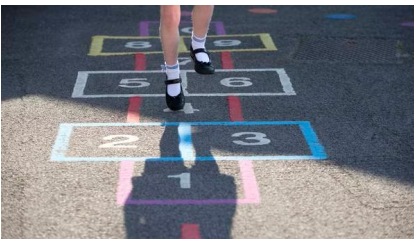
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