

Aberdeen City schools ILS investigation – summary February 2003

Background

In Aberdeen City all the schools have SuccessMaker and, in addition, all primary and special schools have RM Maths. The majority of licences have been purchased during the last five years but some schools have been using SuccessMaker for much longer.

At the end of 2002 there were over 500 SuccessMaker licences and over 500 RM Maths licences. The number of licences within schools varies considerably. All primary and special schools have at least three RM Maths and one SuccessMaker licence. All secondary schools have at least 10 SuccessMaker licences but the number can range from 10 to over 50.

At least one person from each primary and special and at least four from each secondary have received two day's training from SuccessMaker consultants. In addition, many teachers have attended one day courses provided locally to give an introduction to SuccessMaker.

The most used SuccessMaker programs are *Maths Concepts and Skills*, *Initial Reading*, *Spelling Skills* and *Reader's Workshop*.

Need for Evaluation

Evaluation of what was happening with SuccessMaker and RM Maths was required for a variety of reasons. Large sums of money had been spent on these Integrated Learning Systems (ILS) and current information on whether they were value for money in educational terms was required. Also the current position had to be evaluated so that there was evidence to inform planning of any possible future developments. It was important to know, for example, whether further training on the existing systems was required before new courses were introduced.

This was also seen as a chance to see whether the MIICE materials could be useful for this kind of project. This was an opportunity to evaluate the evaluation tool.

Evaluation

Figures generated by SuccessMaker had already been collected from all primary and special schools and showed that many children had made quite significant gains and that the vast majority of children who had been using SuccessMaker regularly were making steady progress. However, these were just paper gains and it seemed unwise to judge the effectiveness of a program by looking at figures generated by the program itself. Another viewpoint was required.

Teasing out what weight different factors have on pupil attainment is always difficult, so a choice was made to look at qualitative, rather than quantitative, evidence. This evidence would come from the professional judgments of teachers, rather than hard data, so the MIICE toolbox seemed the obvious evaluation tool.

A meeting between Roddy Stuart, ICT consultant, and members of Aberdeen City's ICT Team was arranged and the requirements for the evaluation were discussed.

After considering the conclusions of previous BECTa reports into integrated learning systems and anecdotal evidence from teachers, it was decided to focus on

- pupil motivation
- transfer of learning
- ease of use
- appropriateness of software

The design of the investigation

The purposes of the investigation were threefold

- 1 To look at the broader impact of ILS on the quality of children's learning, in all sectors, using a selection of the measures of quality in the MIICE toolbox. MIICE (Measurement of the Impact of ICT on Children's Education) is a partnership, in which Aberdeen City Council is an active participant, dedicated to articulation of quality in learning using ICT
- 2 To explore systematically how teachers perceived the implementation of *SuccessMaker* and/or *RM Maths*, under a range of headings
 - installation
 - learning how to use the system
 - pace and choice for pupils
 - recording and reporting
 - best ways to use ILS
 - practical challenges
- 3 To look at the ease with which ILS integrates into the curriculum, related to some concerns in the NCET third report and other studies, including
 - extent of curriculum fit
 - the appropriateness of the teaching model
 - the impact of ILS in external measures of progress such as national testing
 - the impact of ILS on teacher confidence to use ICT for learning and teaching

Lessons learned

The impact of ILS on children's learning

The measures, adapted from the MIICE toolbox, on which teachers are confident of the contribution of ILS include the following

Ability to carry on a programme of work with a high degree of retention

Pupils are quick to get under way when they use the system

Pupils focus on the task in hand and avoid distractions

The measures which attracted the lowest average scores (and often high 'non participation') include the following

Pupils' ability to add refinements on their own initiative

Systematically putting things right when they go wrong

Pupils' willingly try out new approaches

Teachers consistently promote high standards in the preparation of the work

Teachers create atmosphere conducive to trialling of new approaches

Conclusions

Integrated learning systems are good at promoting 'steady' aspects of learning - being methodical, being focused. But they are not generally best suited to offer practice in 'imaginative' or 'collaborative' aspects of learning, although teachers can make best use of these opportunities, here as elsewhere, if given help to identify and realise the opportunities

Implementation of ILS

Installation

Interviewees were asked about their experience in installation of the learning system software. The general impression of those who did answer was that this was less than a blissfully straightforward experience. The issues which were mentioned in this context - and occasionally under other headings - included

- Problems with operation over a (school) network
- The time involved in doing the installation and the time involved in adding all the names of pupils involved (and sometimes the end-of-year upgrading processes)
- Changes in personnel from those who undertook initial training
- Uncertainties about the configuration of SuccessMaker for British use (eg American accents, dollars for currency)

Learning how to use the system

There was a wide spread of responses to questions about the challenges in learning the software. Those primary colleagues using RM Maths were decidedly more at ease than those working with SuccessMaker. The general conclusions which can be drawn from these responses and comments include the following

- Some forms of training are appropriately given before anyone starts to use the system; but there is a need for continuing support later in the processes; getting the gap between the training elements right is a difficult process
- There is a (considerable) difference in knowing enough to get by and understanding the system's capabilities thoroughly; this applies not least to the extensive reporting within SuccessMaker
- Registration can be a tricky element, since it is normally done only once per year
- The process also needs understanding of the needs of the children, to get them started at appropriate levels; children also need training in its use
- The tutorial and the manual were both praised by some

Pace and choice for pupils

The fairly clear consensus was that the system was sufficiently flexible to meet the needs of most pupils most of the time, although some felt there were some instances where pupil activities were inappropriate

The general conclusions which can be drawn from these responses and comments include the following

- Those who had thought through the ‘model’ of learning which the systems represents (a minority) seemed to be impressed by the underlying purpose
- There were some instances where the approach was at odds with the approach used otherwise in the school (eg long division)
- There is perhaps not total consistency in the degree of challenge (eg between language and mathematics courses in SuccessMaker, or for spelling for those who are struggling)

Recording and reporting

There was a wide range of opinion about the recording and reporting systems in these programs. Some were very enthusiastic while others were completely baffled about the importance of the huge flow of reports which SuccessMaker in particular offers. The general conclusions which can be drawn from these responses and comments include the following

- The considerable feedback which can be derived from SuccessMaker in particular may be a deterrent to at least some of the teachers; if the results were more immediately useful in terms of 5-14 progress, there would possibly be less of a feeling of being overwhelmed
- A number of teachers commented on the usefulness of the reports for corroboration in respect to 5-14, eg confirming that children are at the right level to sit a relevant national test
- Many commented on the considerable time involved in getting an understanding of the reports, but many of these implied or stated that such time would be valuably spent
- The reports from SuccessMaker appear to be of little value for reporting to parents; they are for professionals (and only those who have cracked the code); but the reports from RM Maths have been used by several schools to help to inform parents of their children’s progress
- Some teachers were enthusiastic about the ways in which the recording and reporting could help them to pinpoint aspects of misunderstanding or misconception which they were honest enough to say might have been missed in other forms of classwork (eg the concept of ‘one more’ for a child in the early stages)
- In one school, the results from SuccessMaker had been incorporated into wider reporting mechanisms (using Excel generated graphs); but this was dependent on a member of staff with exceptionally highly developed IT skills (and interest)
- Several commented favourably on the record booklets which the pupils compile, and seem to value and to complete with considerable care

Best ways to use ILS

No two schools have an identical regime; variations covered

- the stages over which the system was running

- the pupils who are targeted: all pupils in a particular stage or range of stages; pupils who are struggling with basic skills; pupils who will benefit from being stretched; pupils with an IEP associated with social, emotional and behavioural difficulties who will benefit from the 'steady' approach of the software - and combinations thereof ...
- the relative extent of use of SuccessMaker and RM Maths
- the amount of time which the pupils concerned spent on the system and how it was organised: annual blocks of time to all through the year, highly structured to almost 'on demand'
- where the activity takes place: within the normal classroom or in specialist spaces (from rooms to corridors)
- the degree to which the system is supplemented by (additional) worksheets

Insofar as there are trends at all, the following conclusions may be tentatively drawn

- These systems are capable of a wide variety of use. Leaving decisions to those who have the overall responsibility for children's learning will generate more thorough learning than a formulaic imposition from the centre
- Some schools have invested heavily in hardware and software to develop the uses of these systems - laptops to relieve the pressure on the standard desktop computers; additional licences. Several commented on the value of centrally organised purchasing schemes to bring welcome discounts
- The best results appear to come - unsurprisingly - where the use of ILS software is planned as part of an overall provision

Practical challenges

Among the many particular issues which were raised, the following were recurring (though none was universal)

- Interruptions to normal service - for whatever cause including wrong log in, network or individual machine seizure, or visits to the loo for infants - can take time to sort out and children lose the credit for the work they have done since no record appears to be taken of those activities undertaken during an interrupted session. Some are suspicious of where the system resumes after they get a system message (SuccessMaker)
- Headphones can occasionally give problems, including - bizarrely - being chewed by children while they are trying to work out answers in particularly challenging activities (at least demonstrating their motivation). Those schools which have invested in reasonably robust headphones appear not to have experienced this problem
- Connected to the headphones issue was the recurrence of disappearing sound; in one school, they found that shifting the connection from the socket on the back (standard) to the one on the front sorted out the problem (although there was no logic to that); this sort of illogic does not help teachers to feel reliant on these systems. Perhaps a centrally generated 'help sheet' about things to try when sound vanishes would help
- Time is needed to interpret the results, both the records and the more formal reports on progress. Perhaps a plain teacher's guide to making the most of ILS reports, linked to familiar measures of progress from the 5-14 programme, would help teachers to focus on those reports which are most beneficial. Although this is covered in the initial

training, not all users attend this and much of it means much less to novices than it will after the passage of time

Integration into the curriculum

Extent of curriculum fit

There was a generally favourable - and consensual - reaction to the question about the extent to which the learning system software provides contexts which integrate well with the curriculum which represents the pupils' overall learning experiences. Again, there was impressive evidence of the enterprise of teachers to make the most of the software, including the following

- the use of whiteboards to conduct direct teaching lessons in a primary school using RM Maths
- the creation of additional accounts for existing pupils which are configured to provide activities focussing on a particular range of skills in a primary school using SuccessMaker
- integration into interpretation activities in English teaching in a secondary school using SuccessMaker

It would be useful to provide some means by which this best practice could be demonstrated and relayed to others - newsletter, website, video recording may all be helpful

Appropriateness of the teaching model

There was also general enthusiasm for the teaching model - in terms of feedback, the way in which the software breaks the learning down into appropriate elements, intervention, support and praise. The general tenor of the remarks and discussion was that it would be quite wrong to expect that a single piece of software would contain all that could be called a curriculum, which is a far broader range of experiences than a formula - however subtle - could ever provide to the young learner. Teachers were positive about quite small but important elements of the benefits of using SuccessMaker and/or RM Maths, including

- pupil motivation: they like it; they work hard at it; they keep trying when they might give up in other contexts
- young children are evidently motivated by a sense of achievement, which some schools and teachers build on with stickers, wall boards for achievement (defined variously)

The impact of ILS in external measures of progress

The majority reaction was that it is too early to be clear about an improvement in tests which stand outside the assessment built into the integrated learning system. There were some who were willing to attest to real improvements and to affirm their belief in the value of the integrated learning system software, including

- improvements in spelling at Standard grade in a secondary school using SuccessMaker
- confirmation of progress helping teachers to decide when to submit children for 5-14 national tests
- some feeling that it may help (faster learning) children to become more independent in their learning (eg in dealing previously unseen challenges)

But some pointed out that it is never straightforward to isolate the contributions of ILS - SuccessMaker and/or RM Maths - from the impact of other things which were mentioned as contributing to improvements in performance

Future actions - support and training implications

- There are evidently some technical issues which still offer challenge to many schools, especially where the software operates across a network. The investigation has thrown up a range of these which might be addressed through support channels - websites, old-fashioned sets of notes, any collective planning undertaken by those with responsibility for support for learning. Appendices 2 and 7 [in the full report] in particular list some of the problems which have been identified by schools. These include issues like installation/configuration to ensure British voices and currency symbols, the disappearing sound syndrome, what to do to credit the pupil when a machine appears to 'hang', perhaps guidance on use of headphones
- The updating of information is evidently a demanding task for many schools, both to add more pupils to the register and to pass on the information from primary schools to associated secondary schools. This has been a valued element of the support framework in the past (eg within the former Linksfield Academy cluster of schools) and the practicalities of restoring this service would be worthy of further investigation, which could also be helpful in addressing some of the technical issues alluded to above
- The pedagogical potential of the systems is evidently not being fully exploited in all establishments. Some were unaware that SuccessMaker can provide clearer mapping to the 5-14 curriculum and assessment programme. Many staff evidently see ILS solely as helpful practice tools and are unaware of the imaginative ways in which elements of the programmes can be used to introduce, illustrate and/or consolidate new topics in learning (eg in mathematics), perhaps in conjunction with a whiteboard and data projector
- The reporting which both systems can offer are potentially valuable but are seen as daunting by a large proportion of those who might benefit. This highlights the imperfections in the standard training arrangements, which appear to 'pile in' the aspects of knowledge of the system in advance of use, when it will mean rather less than it might after a passage of time in operation. Perhaps a more localised and therefore more sensitive support pattern would provide more confidence among those in schools charged with responsibility for development of the resource

Assessment of the approach

The evaluation consisted of four main elements:

- the sample
- the questionnaire
- the interviews
- the MIICE toolbox

The Sample

The schools in the sample were chosen to represent different sectors and different levels of experience using ILS systems. This wide range was certainly reflected in the responses of the participants but suggested a lower overall level of expertise than actually exists across the Authority. However, for the purposes of the evaluation, it was better to have a sample reflecting the full range, rather than a more representative group. In each primary and special school there were interviews with a teacher using SuccessMaker, a teacher using RM Maths and someone with responsibility for implementing ILS. In secondary schools, a member of the Maths department, a member of the English department and someone with responsibility for implementing ILS was interviewed. Occasionally, problems within a school resulted in alternate interviewees being seen.

The Questionnaire

The questionnaire worked well. The structure of moving from questions which only required a 1-4 response to those requiring more extended answers was very effective. As expected, the comments which accompanied the answers were of more value than the bare 1-4 answers themselves.

Some questions were used because they dealt with issues which had been raised in previous reports but which did not appear, at first sight, to be significantly pertinent to Aberdeen City. For example, Section 2 question 1 asked about problems with installation. In Aberdeen City stand-alone computers came with SuccessMaker pre-installed and networks had SuccessMaker installed by local technical staff so “Does not apply to me” was the expected response. However, this question brought a lot of responses about general operational problems and concerns about inputting initial pupil information. So although the question did not return the expected response, it did provide valuable data. This was true, to a lesser extent, of other questions.

Only one question caused confusion. Section 3 question 2 asked, “Do you think that the teaching model which the learning system software uses is (nearly) always appropriate?” The first choice offered meant to suggest that the software was not especially useful, but the phrasing of the choice meant that no one could disagree with it - “The learning systems software cannot compete with the full range of techniques which a good class teacher can offer.”

The combination of responses on a 1-4 scale with the opportunity to record comments which developed the ideas in the question made it possible to compile a report with both evaluative and qualitative information.

The Interviews

If the questionnaires had been sent to the schools for completion, the wealth of information which was gleaned from the face-to-face interviews would have been lost. The interviews took place in the interviewees’ schools so disruption was minimised and the interviewees were likely to feel relaxed. The interviews lasted a maximum of 30 minutes. Interviewees were encouraged to expand on answers and to offer any other information they thought pertinent.

The MIICE Toolbox

Part of the plan for the evaluation was to use MIICE, but were there alternatives which might have been better? Questions could have been created from scratch but that would have taken some time. HGIOS could have provided a model but its questions were not focused enough.

The MIICE Toolbox provided a ready-made set of questions which had been developed by practitioners and were in a format which was familiar to teachers.

Four learning outcomes were chosen as being particularly appropriate –Learner Reflection, Shared Planning & Organisation, Motivation, Self-esteem/Confidence. Within the outcomes, the most relevant components were selected and then suitable questions were chosen. The wording of questions was altered when necessary to meet the needs of this evaluation.

Choosing questions from a menu, particularly from the well-structured menu which MIICE offers, is considerably quicker than making up questions and helps to ensure that important areas aren't neglected.

Another benefit is that it will be easy to follow up the original evaluation, either by using the existing questionnaire or by creating a new questionnaire which is based on the same learning outcomes.

The MIICE Toolbox gave structure to the evaluation and saved a considerable amount of time. Its questioning goes beyond the mere collection of quantitative data to what is of more importance – the measurement of quality.