

sp^ort4life.biz

**A business game for business and enterprise
education**

**A Microsoft/SQA
Partners in Learning
Project 2006 – 2008**

**An independent
evaluation by
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SQA/Microsoft Partners in Learning Initiative 2005 – 2008

Evaluation Report: The sport4life.biz sports store business game

Executive Summary

A sports store business game was successfully piloted in Scottish secondary schools in the winter of 2006. A revamped and improved version of the game was launched under the brand name *sport4life.biz* in the spring of 2007, and secured the support of several major football clubs in the Scottish Premier league for the use of their team colours and logos in the game itself. The technical excellence and innovation of this game was recognised by its success in a national award competition.

The game was promoted to teachers and enterprise coordinators through a range of channels and succeeded in attracting the interest of over 500 teachers in over 300 schools. A series of workshops and masterclasses in the use of the *sport4life.biz* game in the classroom was complemented by published training materials and a set of teacher resources. These teacher resources were keyed to aspects of the Scottish curriculum and made available online through the website on which the game itself was hosted.

A survey of teachers using the game and pupils playing the game confirmed that the project had been successful in engaging and motivating pupils in their learning about aspects of business and enterprise. Teachers expressed confidence that pupils' understanding of business concepts had been helped by playing the game alongside the classroom teaching. Pupils uniformly enjoyed the experience of game play, as evidenced by the remarkable statistic that over 25,000 pupils registered as players and played in total over 100,000 games in the period May 2007 to May 2008. About half of them recognised the relevance to their learning of the game's many scenarios and about 20% saw very direct connections to particular topics in business education. The link to improved performance was less clear cut, with around two-thirds of teachers reporting any noticeable improvement in the performance of their pupils.

The evaluation research showed that pupils who were in general underachieving responded well to the opportunities offered by the game for engagement in learning activities, and were the most likely to show improvements in motivation and performance. One significant outcome of the project was that not only would almost all of the survey respondents continue to deploy the game as part of their teaching strategy, but also that most would consider utilising computer games for other aspects of their subject teaching – thus contributing to the culture shift that will be required for the success of Glow, the schools national intranet.

A further significant positive outcome for this project is that it has demonstrated strong links with key government initiatives in education. These are: Curriculum for Excellence, Determined to Succeed and Enterprise in Education. The use of *sport4life.biz* as an educational tool develops important capacities in young people and provides them with a realistic experience of business operation and enterprising behaviour. For a considerable number of pupils their engagement in the project gave them opportunities to build self-confidence and communication skills through participation in public events.

Finally, the investment in teacher resources linking the game to aspects of the Scottish curriculum was welcomed by teachers, although the actual use of most of the resources was disappointing, possibly due to the timescales of the project and the priority that teachers gave in the first instance to learning how to use the game.

1. Project aims and scope

- 1.1 The principle aim of this project was to introduce a realistic and engaging business game into Scottish schools as a means of supporting learning about business processes, communication, mathematics and physical education. The project scope included the development of the game to suit Scottish contexts and curriculum, the production of support materials to enable teachers to link the game to curriculum topics, and the provision of support and training to give teachers the confidence and competence to use this form of ICT in their classroom. Further aims included producing a game that did not require capital investment by participating schools, and making the use of the game sustainable beyond the PIL funding support.

2. Overview of project 2005 – 2008

- 2.1 The project had its genesis in a successful project in New Zealand schools, where The Small Business Company (TSBC) was engaged by the NZ government to promote enterprise in schools through a sports franchise business game. In 2005 The PIL Advisory Group took a decision to pilot a further development of this game in the context of Scottish football club franchised stores. Four teachers from Scotland visited New Zealand to assess the existing business game in use in schools and design a new game that would combine the best features of the NZ game with the requirements of the Scottish secondary curriculum across several curriculum strands, but principally that of business studies. A consultant who had experience of managing a football club franchise was engaged to help TSBC produce game play that would be convincing and realistic.
- 2.2 Subsequent to this, the first version of the game was piloted across a set of volunteer schools in Scotland (Oct 2006 – Feb 2007). The volunteer schools were briefed and training for the teachers provided by a joint PIL/TSBC team. Agreement was reached with several Scottish football clubs, including the two principal clubs Rangers and Celtic, to have the on-screen images badged with their logo and colours. The clubs also contributed a small amount of merchandise, supplemented by PIL funds, to provide incentives for high scoring game play. The awarding of such prizes was used to further publicise and promote the game in Scotland. A competition was also held to find a brand name for the game to mark the release of the production version in May 2007. The winning name was Sport4Life.biz and this is the name under which the game has been promoted in schools.
- 2.3 An evaluation of the experiences in the pilot schools confirmed that the game was being used successfully by teachers and pupils, both in school and out of school. It also identified a number of technical and performance issues with the web-based game, mostly related to the technology infrastructure in schools. The pilot outcomes were used to plan improvements to the game design and the underpinning technology and to further extend the game scenarios (to a total of 75) and connections to the Scottish curriculum.
- 2.4 The revised game was launched as Sport4Life.biz in May 2007 and the PIL team and TSBC staff conducted a series of workshops across Scotland to promote the game to teacher and enrol them as game users. Between May 2007 and May 2008, over 25,000 students have played a total of more than 100,000 games. Around 300 centres have used the game and over 500 teachers have registered their interest. By any standards this represents a significant level of penetration and use across Scottish secondary schools.

- 2.5 In line with other SQA/Microsoft PIL projects, a key objective was to align the game to other strategic priorities within Scottish education. These include the government's plans for a curriculum fit for the 21st century (*Curriculum for Excellence*), developing capacities in young people to be successful learners, confident individuals, effective contributors and responsible citizens. It also has a commitment to address issues of motivation and retention for underachieving young people., and to promote enterprise and entrepreneurship from an early age. The sport4life.biz game has been designed to speak to these agendas.
- 2.6 As the first full year of operation of the game in Scottish secondary schools draws to a close, two key decisions have been announced. Firstly, funding to make the game free to play to all schools will be continued for the 2008/2009 academic year, thus providing stability and continuity for those teachers who have invested in the incorporation of the game into their teaching practice. And secondly, a joint project with Young Enterprise to adapt the game for use in primary schools and support its use in promoting enterprise in primary schools.

3. Approaches to evaluation

- 3.1 The evaluation of this project has taken the following approaches to acquiring evidence over the phases of the project.

Phase 1: *Initial engagement with TSBC in New Zealand and evaluation of TSBC's projects in New Zealand schools.* No engagement (this early work was completed by a PIL-commissioned group of Scottish teachers who visited New Zealand, and a representative of SQA).

Phase 2: *Development of teacher resources keyed to the Scottish curriculum and customisation of the TSBC game engine to meet Scottish requirements.* Observed planning meetings and assessed quality of created materials

Phase 3: *Conduct and evaluation of the pilot (Nov 2006 – Feb 2007).* Attended training workshops and discussed objectives and intentions with individual participating teachers. Attended PIL planning meetings to hear reports on implementation issues and their resolution. Conducted a post-pilot survey of pilot schools and on this basis produced an evaluation of the pilot (see Appendix A).

Phase 4: *Design of new game and selection of game scenarios (Feb – May 2007).* Observed planning meetings and received documentation of proposals.

Phase 5: *Promotion and launch of new game sport4life.biz (May/June 2007).* Attended promotional workshops and discussed objectives and intentions with individual participating teachers.

Phase 6: *Roll out of game and provision of "masterclass" sessions for teacher training (Sep 2008).* Attended masterclass training to assess competence and confidence of teachers and find out their personal aims in deploying the game in their teaching and learning. Attended PIL planning meetings. Discussions with masterclass tutors (all of whom were school pupils) about their own experiences of playing the game.

Phase 7: *Steady-state use of the game in schools, and development of further training materials and teacher resources (Sep 2007 – May 2008).* Attended PIL Planning meetings to hear reports on progress and resolution of issues with the game and its resources. Met with various individual teachers at showcase and other events and liaised with PIL game coordinator to build anecdotal evidence of game use in schools. Similarly for groups of pupils

Phase 8: *Survey of game use by teachers and pupils (May 2008).* Collected evidence from pupils using a survey instrument placed on the games website. Collected evidence from participating teachers through a postal survey.

- 3.2 This evaluative report draws on this mix of interview records, planning meeting records, survey results and discussions with teachers and pupils to fill out the anecdotal record, and supplemented by the wide range of statistical data generated from the game plays.

4. Role of games in the Scottish Curriculum, sport4life.biz and GLOW

- 4.1 There is presently a considerable level of interest in the use of computer games to support learning. This extends from the use of games such as Guitar Hero (played on a gaming system), through “brain training” maths games played on hand-held game consoles, to PC-based “serious games” that are designed for a specific learning purpose. Learning and Teaching Scotland (LTS) has set up a unit (The Consolarium) to explore the somewhat narrow field of console-based games and their implementation in Scottish classrooms, and this has aroused considerable interest in the Scottish educational press and beyond, leading to a growing awareness of the potential impact that games-based learning might have on motivation and learning in Scottish schools. LTS has also published a report that maps games based learning to aspects of the Curriculum for Excellence
<http://www.ltscotland.org.uk/ictineducation/gamesbasedlearning/aboutgbl/gamesandcfe.asp>.
- 4.2 For pupils taking SQA’s Standard Grade Business Management course there is a specified computer-based business game (Business@Work) used in the assessment arrangements. Although this game provides only a simplistic view of how business operates, it has helped business teachers develop an awareness of the potential of computer-based games in the context of business and finance in the curriculum. There is also a considerable use of simulation in science education to allow pupils to conduct experiments and observe the effects of changing parameters on physical and biological systems. Some use is made of commercial off the shelf (COTS) games such as SimCity, RollerCoaster Tycoon and Zoo Tycoon to encourage the development and application of reasoned strategy on the part of pupils.
- 4.3 The sport4life.biz game has distinguished itself from this more general use of games and simulations by introducing an unprecedented level of business realism into the classroom. The design of the game has been shaped by the considerable expertise of TSBC in developing and delivering on-line business training for small businesses, combined with the wealth of experience in sports store management of the Scottish consultant to the project. The dynamics of the game are such that each game situation calls into play a different combination of responses from staff, customers, suppliers,

financiers etc so that no two games played are ever the same. This richness and depth in the game play has been commended by both teachers and pupils. For teachers it provides a sound connection with the concepts being studied in business management or in accounting, while for pupils the realism helps keep them engaged in playing the game.

- 4.4 **Glow** is the name of the Scottish national schools intranet, digitally linking Scotland's 800,000 educators and pupils. **Glow** will provide teachers with individual email addresses, a virtual learning environment (VLE), chat rooms and newsgroups, instant messaging and net conferencing, and secure sharing of files. The VLE (**Glow Learn**) includes tools to organise and search for digital resources and courses, monitor student progress and provide learners with access to structured content. Glow Learn can be used at any time, anywhere that internet access is available. It was envisaged that for long-term sustainability the sport4life.biz game and its attendant teacher resources might be accommodated within Glow Learn. It remains to be seen whether this objective will be realised.

5. Curriculum for Excellence and sport4life.biz

- 5.1 The Scottish Government set out its long-term goals for the improvement of the curriculum in a seminal document *A Curriculum for Excellence* (SEED, 2004). The purposes of the curriculum were set out to enable all young people to become *Successful learners, Confident individuals, Responsible citizens and Effective contributors*. These four capacities were to be developed through the arrangements that each school would make for its curriculum.
- 5.2 An identified strength of the sport4life.biz game is the way that it speaks to these capacities through the several modes of use – either as individual game play, or in teams, or in whole class activity and decision-making. The game contributes to the development of *successful learners* through its stimulation of enthusiasm and motivation for engagement in game play (and hence learning), and the promotion of achievement through its scoring system and leaderboard display. There are aspects of the game that stress the importance of physical and mental well-being, while encouraging players to balance ambition with risk – contributing to young people becoming *confident individuals*. The game has elements which involve the management of staff, including their training and working conditions, and scenarios where moral judgements are called for as well as economic ones (such as manufacture of goods using child labour). These aspects of the game help build *responsible citizens*. As *effective contributors*, young people playing this sport store game will develop an enterprising attitude, learn to solve problems and be resilient when things go badly. They may also work in teams to explore aspects of the game for the purposes of learning.
- 5.3 This project has provided further avenues for young people to develop their skills of presentation and build their self confidence. Beginning with the pilot in November 2006 and extending through to April 2008 there have been a number of opportunities for schools to showcase their use of the sport4life.biz game to a wider audience. Some of these have been held in the Optima Building, the main offices of SQA, while the final one was the Scottish Parliamentary Reception mentioned elsewhere in this report. In these the pupils selected to take part were rewarded with certificates, and were excellent ambassadors for their schools. Even more beneficial for pupils was the decision by the

PIL team to capitalise on the skills of pupils in playing the sport4life.biz game by using them as the tutors in the game masterclasses. Again in these Masterclass situations the pupils proved adept at communication and support.

- 5.4 Appendix B sets out in further detail the links between sport4life.biz game play and the *Curriculum for Excellence*. Conversations with teachers as part of the evaluation study confirmed that they shared these views of the strong connections of the game with aspects of the CfE.

6. Enterprise in education and the Determined to Succeed initiative

- 6.1 In 2003 the Scottish Government published *Determined to Succeed* (DtS), its response to the recommendations arising from a review of enterprise in education. One of the four key strands in DtS relates to *Enterprising teaching and learning*, ensuring that teachers have the skills and capacity to make their teaching relevant to the world of work, enabling young people to develop enterprising skills and attitudes as well as creative approaches to learning across the curriculum. Funding was directed at providing local coordinators and development officers, at both education authority and school level, who were remitted to develop enterprise in education by encouraging and supporting pupil activities and related professional development. In a recent report *Improving Enterprise in Education (HMIE 2008)* HMI reported a high level of support for the concept of enterprise in education, confirming an important shift in the culture of schools and centres in Scotland. Centres and schools unanimously expressed the view that enterprise in education brought direct, significant benefits for learners' experience, achievement and attainment. Also, enterprise in education harmonised well with key principles in *Curriculum for Excellence*, such as the focus on challenge and enjoyment, depth and richness of study, active learning strategies and real-world relevance.
- 6.2 The government department responsible for DtS were persuaded of the value that the game would have in helping schools overtake some of the DtS objectives, and helped publicise the game through its own network of contacts with schools and Education Authorities (EAs). As a result, a number of local coordinators and development officers for DtS identified sport4life.biz as an important resource to introduce concepts of business and enterprise to pupils, particularly in S1 and S2. The survey responses and conversations with participating schools confirmed that in a good percentage of schools (about 15%) the principal use of the game was for this general purpose of acquainting whole cohorts of S1/S2 pupils with these aspects of enterprise. At further stages in the school (i.e. S3-S6) the game contributed to a deeper understanding of enterprise and entrepreneurship for those pupils studying business topics and thus proved a valuable addition to school arrangements for enterprising teaching and learning (see mapping in Appendix C). This use of the sport4life.biz game accords well with the recommendation of the HMIE report – namely that schools and centres should develop further their use of effective enterprise activities, projects and contexts as key features of pupils' experience in keeping with *Curriculum for Excellence*.
- 6.3 As part of the evaluation of this project, a meeting was held with the author of the HMIE report. This meeting confirmed that the aims and outcomes of the use of the sport4life.biz game were very much in line with the kind of activities that were envisaged by the author as being desirable contributions to the enterprise agenda in schools – and in primary school settings as well as in secondary.

7. Promotion of the sport4life.biz game.

- 7.1 The game was promoted initially through a set of workshops held in various parts of Scotland, and the ‘cascading’ of information from attendees at these workshops to other teachers. The Scottish Qualifications Authority also agreed to the publicising of the game on its website, with details appearing in the relevant micro site for the subjects for which the game had relevance. SQA also agreed to include publicity information in its regular updates to all centre SQA coordinators, and in an issue of its e-zine. One significant promotion of the game took place at an annual conference for teachers of business. In addition the government department responsible for the government’s *Determined to Succeed* initiative also publicised the game through its network of contacts with schools and EAs. This choice of a range of channels for publicising the game was highly successful, with interest being expressed by over 500 teachers in over 300 schools and centres – well in excess of the initial target of 100 schools. This represented more than half of the secondary schools in Scotland. Perhaps the most signal boost to the acceptability and take-up of the game came from its endorsement by the major football clubs in the Scottish Premier League, including Aberdeen, Celtic, Hearts, Motherwell and Rangers. These clubs allowed their logos and team colours to be used in the on-screen graphics for the game and gave further publicity through the donation of club promotional materials.
- 7.2 As the game rolled out in schools across Scotland, a further incentive to increase game play was introduced in the form of a leaderboard. Pupils responded very well to this incentive with schools competing to have significant numbers of pupils on the leaderboard. To this was added a further incentive through the awarding of prizes for various categories of game play, these prizes being provided by both PIL (monetary) and the football clubs themselves, such as signed shirts and other club promotional gifts. The awarding of these prizes, both in the schools and at award ceremonies held in SQA, generated a significant number of opportunities for publicity - both for the project itself and for individual schools and football clubs. In this respect the game has made a good contribution to the celebration of achievement in schools, in line with the government’s wish that schools should celebrate achievement as well as attainment.
- 7.3 The game itself was showcased by teachers and pupils at a Microsoft parliamentary reception, held in the Holyrood parliament building and attended by Cabinet Ministers and MSPs. The success of the game in schools was reported in the magazine of the Scottish Parliament, and highlighted in a Microsoft publication prepared for MSPs.
- 7.4 The sport4life.biz game was one of five products shortlisted for the BETT Awards 2008 in the category of Digital Content Secondary (other curriculum areas). Although not the final winner, the game was commended for its technical excellence, appropriate functionality, supporting innovation in education and personalizing learning.

8. Preparation and use of teacher support materials

- 8.1 The business realism of the game was achieved through the incorporation of a range of business scenarios into the game engine. A total of 75 scenarios were devised in consultation with Scottish teachers, and drawing on the knowledge of an experienced sports store manager. These scenarios ranged from employee theft to flooding of the store (see full list in Appendix I).

- 8.2 It is a well-established fact that the likelihood of resources being used successfully by teachers depends on their relevance to the curriculum, and so from the outset of the sports store game project it was determined that all the teacher resources would be created to address specific aspects of the Scottish curriculum. An initial set of teacher resources were created for the pilot and made available to teachers through the game website. The resources were structured to support teachers in the planning of the learning activities and to guide pupils as they took part in them. Each resource was keyed to a particular topic or aspect of the secondary curriculum. While most related to concepts in business studies (sales, marketing, finance), resources were also created for ICT, Maths, English (communication), PE and Personal and Social Development (PSE).
- 8.3 At the end of the pilot, a survey of participating staff was conducted to establish where additional resources might be required, and this information was used to prioritise the creation of some additional resources, such as a set of four lessons to support the use of the game in S1/S2 classes relating to entrepreneurship. A full list of resources is given in Appendix D.
- 8.4 From the survey of teachers, the use of the resources followed the patterns below:

Frequency of use	Resource
Most common	Biz Ed: Business Structure; BizEd: Using Financial Information; BizEd: Marketing your business
Fairly common	How to use Sport4Life.biz in class; Introductory activity for S Grade Business Management; BizEd: Managing quality
Rarely used	Introductory activity for S1/S2; BizEd: Industrial relations; BizEd: External influences; BizEd: H&S; BizEd: External business growth; PSE: Interview Skills; English: Prepare an advert; PSE-Stock supply issues; PSE: Interview skills
Very Rarely/Never	CfE & Sport4life; DTS & Sport4life; Introductory activity S5/S6; Introductory activity Higher Business Management; English: Sales Pitch; Maths: Measure a store; Maths: Graph sports data; PE: Teamwork; PE: Participate in an activity

- 8.5 In summarizing the **topics** the game was used for as part of learning and teaching, the survey data shows that the most common subject was Business Education in year groups S2, S3, S4 and S5, with the majority of interest being in Finance, Marketing and Business Structure. In the subject areas of Administration and Enterprise there was some interest across the same year groups. However, in other subject areas such as Accounting, Behaviour Support, Maths or ICT there appeared to be very little interest.
- 8.6 Responses from the teacher survey showed that while half of the teachers thought that the resources for their subject area were very useful the remainder judged them to be of limited use. When asked how helpful were the teacher resources in guiding your use of the game in class around 90% indicated that they were not very useful or of limited help.

Given the level of investment in these resources and the general perception that they are of good quality and directly relevant to the curriculum in Scottish schools, it is concerning that they are not being more fully utilized. In a previous section it was noted that around 85% of teachers had never used a game jump linked to the scenarios which are contained in these teacher resources. It may be that further training is required to demonstrate to teachers how these scenarios can be linked to the particular topics they are teaching. A typical game jump scenario is given in Appendix E.

- 8.7 In conclusion, while the resources made available to teachers were widely welcomed, and judged to be of value, the fact remains that individual teachers did not make significant use of them to support their teaching and learning. The anecdotal evidence from teachers suggests several reasons for this:
- General lack of time to incorporate new approaches into their classroom practice
 - The amount of time required to have the game installed and to become familiar with its operation
 - Lack of confidence in their understanding of how the game play and scenarios related to the curriculum
- 8.8 However, the anecdotal evidence also indicated that as teachers increased their competence in running the game, and their confidence in using it for the purposes of teaching and learning, then they would be much more likely to incorporating the available teacher resources into their planned activities.
- 8.9 Throughout the period when schools were considering their engagement with the game, receiving training , installing it on local computers and troubleshooting installation, they were supported by a PIL project manager. The survey responses indicated that almost all teachers found this service to be supportive and helpful in resolving difficulties. Particular mention was made of the success in deploying school pupils as tutors for the masterclass training events.

9. Patterns of game use

- 9.1 The teacher survey responses provided quantitative data on the patterns of game use, confirming the general views expressed by teachers at showcase events and in other contacts with them. When using the game with their class, about half of the teachers used it regularly for one period in the week, while about half used it more infrequently, possibly only every third or fourth week (in both cases the frequency most probably determined by availability of a suite of computers for class use). When using the game half of the respondents would never lead an activity in the class, confirming a finding covered later in this report that many teachers lack confidence in their own use of the game. The most common use of the game in classrooms, according to teachers, was in pupil group activities, with responses showing that half use this mode sometimes and half use it often. Only 15% of respondents indicated that they allowed pupils independent game play in the classroom.
- 9.2 The view from the pupils was, however, not wholly in agreement with the teachers' view. Just over half of the pupils responding indicated that they had never played the game in the school library or a school ICT suite. And about half claimed to have never played the game in the classroom with a teacher. An unexpectedly large proportion of pupils (62%)

had never played the game outside of school, contradicting anecdotal evidence that many pupils did. Just over 70% of pupils had played no more than 10 games in total, with a small group of enthusiasts (about 10%) clocking up over 20 games each.

- 9.3 About half of the teacher responses indicated that the game would be often used for general business awareness while for the others such use would be only sometimes. But around half of the respondents had never used the game play to support a topic and over 85% had never used the built-in game jumps for specific topics. Pupils' responses confirmed that only about half had used the game to understand how businesses work or to explore a topic at the request of a teacher.
- 9.4 These results are not wholly surprising, given that the game was introduced in many schools for the first time in the autumn of 2007, with both teachers and pupils finding their way in playing the game and determining its usefulness to them in terms of the required learning of the curriculum. It is evident that many of the pupils responding to the survey remained unclear about the purposes for which they were playing the game, while teachers were sticking to safe ground in limiting its use to the support of general business concepts.
- 9.5 The patterns of use and the perception of half the pupils that they did not play the game in the class with the teacher suggests that limitations on access to ICT facilities is a major constraining factor to the development of ICT-based approaches to teaching and learning in general, and for the sport4life.biz game in particular. This is borne out by the parallel findings of a major HMIE study into the use of ICT in Scottish education (HMIE, 2007).

10. Analysis of game play activity May 2007 – May 2008

- 10.1 A common plea from schools was often that their local Premier League team was not available for choice. While every Premier League club had been approached and offered the opportunity, not all availed themselves of the offer. The statistics show however, that even in cases where a local club was on offer, the invariable choice was for the logo and colours of one of these four teams: Aberdeen (10,265 games), Celtic (27,101), Hearts (8,202) and Rangers (33,811) (as of end Feb 2008).
- 10.2 Some initial concern was expressed that by tying the sports store so firmly to a football club, there would be a lack of interest among girls. Evidence from a former manager of a club sports store suggested otherwise (i.e. that women are as likely as men to purchase club-related merchandise). The out-turn statistics from the game show a slight preponderance of males among the players (56% male), but anecdotal evidence from visits to schools and conversations with teachers confirmed that girls were just as likely as boys to engage competitively with the game. At the showcase event for the sport4life.biz game, held at the Scottish Parliament, the team demonstrating the game to Scottish MSPs were from an all-girl school. In the current leaderboard (as of end-May 2008) the top scoring positions are held by girls.
- 10.3 The game was played in a wide range of centres, but mostly in schools. A number of special schools used the game with young people with additional support needs. The game was played in secure units and in centres providing for disadvantaged or

disaffected young people, some of which were located in the stadiums of football clubs thus providing a good link to the game itself.

10.4 The analysis shows that most games were played by pupils in S4. But the largest groups to use the game in schools were in S1 and S2 where the whole year cohort were using the game to gain some insight into how businesses work, as part of their enterprise education.

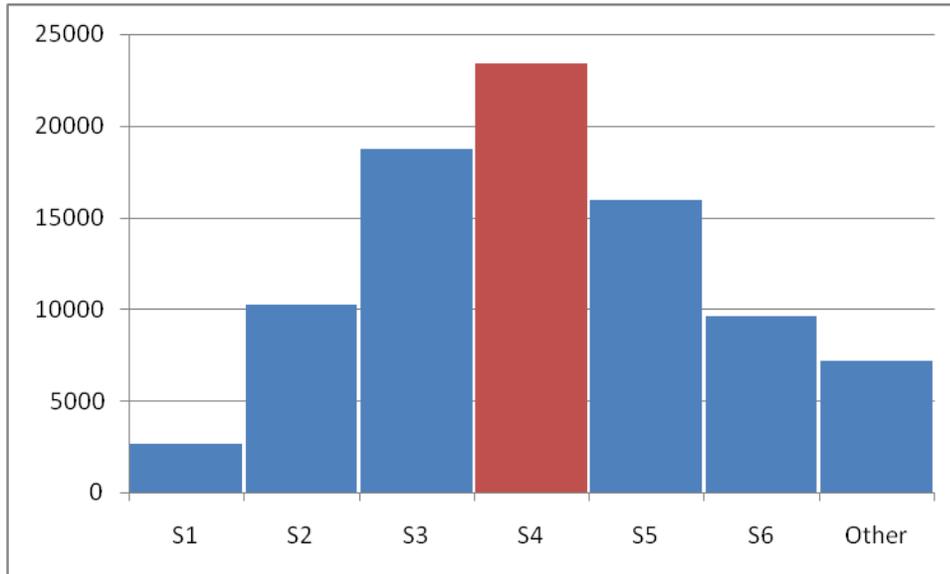


Fig 10.4 Games played by school year of player

10.5 There was considerable interest in whether young people would be playing the game at home, either at the weekend, or in the late evening. The graphs below show a reasonable amount of game play at the weekend and in the evenings just after school and after tea. And a few insomniacs (or enthusiasts) playing through the night.

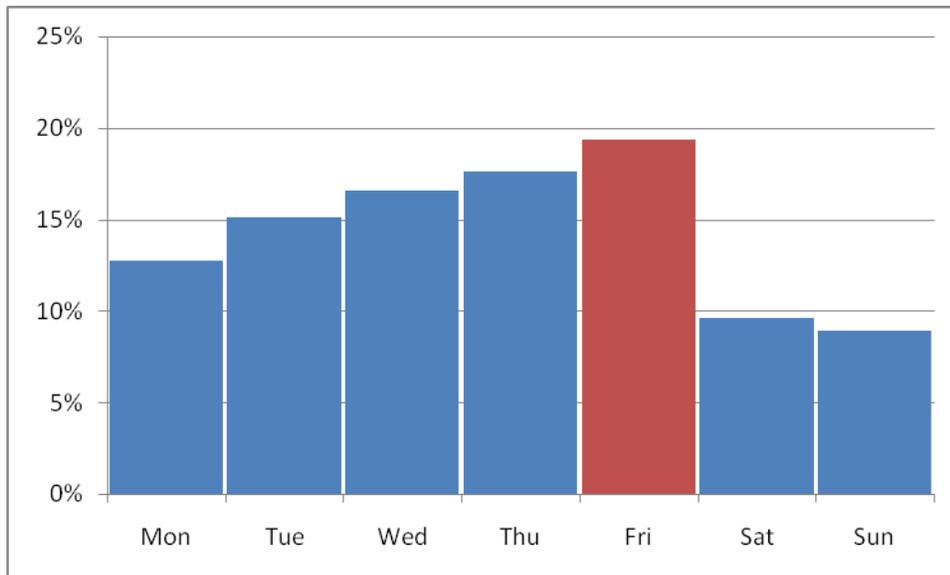


Fig 10.5a Games played by day of week

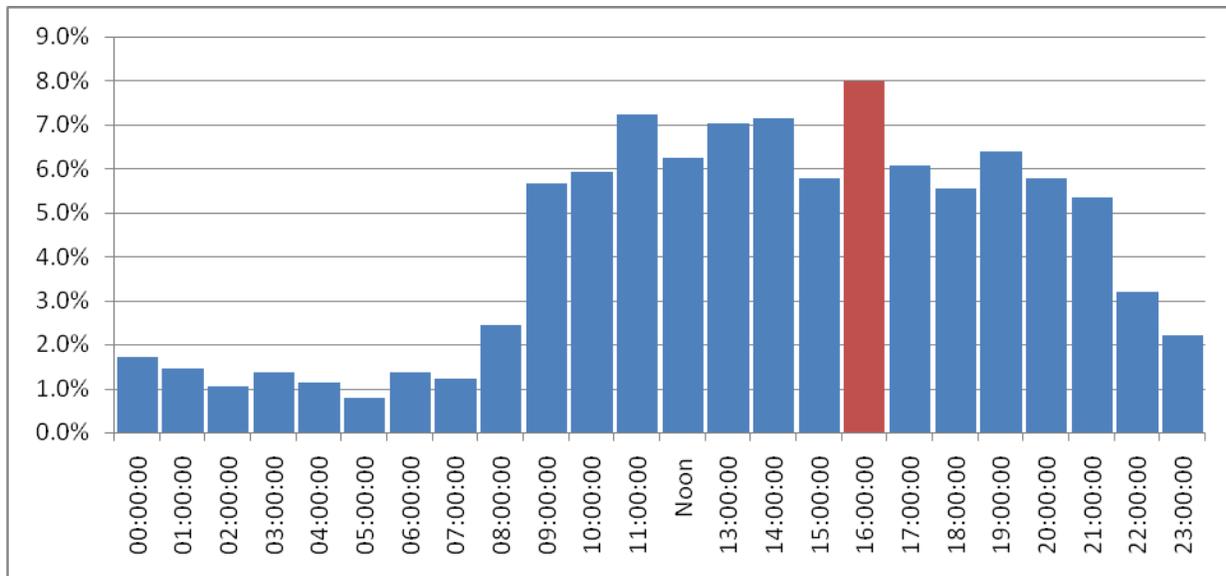


Fig 10.5b Games played by time of day

11. Impact on Learning and Teaching

- 11.1 While the game statistics show high levels of engagement with the game (and a good number of high-scoring games too), the key determinant of success for the project lies in the impact that game play has on the learner experience and progress. The teacher survey (Appendix G) was designed to elicit teachers' views on the effectiveness of the use of the game in their teaching and the outcomes in terms of learner motivation and understanding. The results, based on the returns of 30 teachers, are summarised below.
- 11.2 Over 80% of responding teachers claimed that game play had helped reasonably well or a great deal their teaching of particular topics. They were confident that playing the game had made a contribution to improving pupil understanding of the topics being taught, and that pupils had had no difficulty in making links between playing the game and the topics they were learning (less than 10% were slow at making links). However, this did not translate fully into improvements in pupil performance in the subject, with around one-third reporting no noticeable improvement. However, it should be noted that in some cases (such as S1/S2 enterprise) it would be difficult to say whether improvement that had taken place was attributable to the game or not.
- 11.3 Evidence from the pilot and from the schools/centres taking part demonstrated that the game had a particular appeal to young people who might have otherwise been excluded from enterprising activity, or who lacked motivation and engagement in the classroom. Teachers commented on the power of the game play to stimulate the interest of pupils who would otherwise have shown little appetite for business subjects at school, and for some the most obvious improvements in classroom behavior and performance were to be found in this group. Some teachers reported on the use of the game with pupils with Additional Support Needs to provide them with experiences of business activity (albeit simulated) that they might not otherwise have had.

- 11.4 In one particular case the game was being used in a programme to re-engage with education groups of young people who had become disaffected at school and were at risk of failing to secure any qualifications. This programme, which was offered in the stadium of a Premier league football club is further described in Appendix H.
- 11.5 On the important question of whether teachers would continue to use the game to enhance their teaching and learning in their subject, over 90% indicated that they would be “very likely” to do so. On the question of whether their experience in the use of the sport4life.biz game would encourage them to consider the use of other computer games in their teaching and learning in their subject, only 10% indicated a negative response, and over 60% were “highly likely” to do so. This is encouraging and confirms the positive impact that the use of the game has had, not only on the pupil motivation and experience, but also on the attitudes that teachers have towards the application of ICT in their own teaching and learning. This transformational impact of the game on teachers’ practice is a noteworthy outcome of this project.
- 11.6 The survey of almost 1000 pupils playing the game provided information about their own perceptions of how well the game related to the development of their understanding of business and related topics. The summary table of results is given in Appendix F. Over half the pupils (55%) found that playing the sport4life.biz game was a helpful way of learning things. However only 20% indicated that the game play helped them “a lot” when learning about specific topics such as managing stock, setting price levels, managing staff and managing money in a business.
- 11.7 About half of the pupils did not make any connection between their game play and learning about specific topics, and a similar proportion indicated that their playing of the game was not linked to any particular aspect of their learning. To check whether much of the use of the game was frivolous (ie not visibly connected with class work) the pupils were asked to say how much of their game play was for fun, or aimed solely at improving their score. Just under half indicated that they did play the game in this way, but only 10% did it “a lot”. More positively, over half recognised that playing the game helped them understand better how businesses work and a similar proportion that they were sometimes playing because the teacher wanted them to understand a particular topic, such as pricing or stock.

12. **Barriers to take-up of sport4life.biz game**

- 12.1 While reporting the success of the use of the game in a considerable number of schools/centres (over 60 schools playing more than 500 games each) the fact remains that for a large number of schools/centres that registered for the game there was no significant use of the game other than a few sporadic games played here and there. In fact, in each of around 130 schools/centres no more than 100 games were played. And in half of these the number of games played were in single figures, confirming that the initial interest of these schools/centres (and the teachers in them) did not progress beyond registering their interest and briefly exploring the potential of the game. Some clues as to the reasons can be found in the comments made by teachers in the survey form and their responses to questions in the survey, and in discussions with teachers attending the launch events or the masterclass training.

- 12.2 The pilot phase had indicated that in some schools (and indeed in some local authority areas) providing reliable and speedy access from the school to the game web server presented a severe challenge. A technical solution was provided by TSBC to overcome this problem (utilising the school's proxy server) but this problem has persisted for some schools, making the use of the game in classrooms unmanageable. Around one-third of teacher responses to the survey indicated that they had some or major difficulties with accessing technical support to set up the game on their school computer.
- 12.3 The new version of the game went "live" in May 2007, but problems persisted with the game engine and with some game scenarios into the autumn term. Although these were subsequently resolved by TSBC, the anecdotal evidence from teachers is sufficiently strong to conclude that these glitches, coupled with slow PCs and incorrectly versioned software were sufficient to deter some schools from continuing.
- 12.4 In a fair proportion of schools, the ICT suites are already booked to capacity and teachers were unable to gain sufficient access to groups of computers to sustain the use of the game in their teaching – although some teachers reported that they encouraged game play at home to compensate for this. For a few respondents, the pressures of time and workload were a barrier to them investing the necessary time to understand how the game might support or enhance their teaching and learning.
- 12.5 These barriers lie beyond the control of the project implementation team. Of more importance to the eventual successful adoption of sport4life.biz by teachers is the expression by more than a few respondents of their lack of confidence in understanding the mechanics of the game – i.e. how the game works. For these teachers this lack of understanding was sufficient to make them hesitant about introducing it in a live teaching situation, especially to a group of tech-savvy youngsters. This was also a common theme in discussions with teachers at launch workshops and masterclass training events, although in each case considerable effort was made by the presenters to provide teachers with an understanding of the key inputs and outputs of the game engine and to answer queries as fully and comprehensively as they could in the time available. In this regard, the presence of one of the game designers at the launch workshops was of considerable value.
- 12.6 Although there are some explanatory materials about the game located on the game web server, and available for teachers to access, the challenge remains to provide teachers with materials that meet their needs for a clear comprehension of the key elements of the game engine and to build their levels of confidence such that they overcome this barrier to their use of the game in the classroom.
- 12.7 It should be noted that although further masterclass training sessions were requested by teachers wishing to improve their levels of competence and confidence, when these were offered to teachers the numbers available to take up the training were insufficient to justify taking pupils out of school (all the masterclass tutors were school pupils) for this purpose. This was yet another manifestation of the time and workload pressures for teachers during the school term.
- 12.8 It should also be noted that for no school was the ICT competence of the pupils an issue. All reported that the web interface for the game presented no challenges for pupils, except to suggest improvements to it.

13. Conclusions

- The sport4life.biz game has brought an unprecedented level of business realism to the use of games in the Scottish curriculum. Its excellent contribution to digital content in school education has been recognised in a national award shortlist.
- The engagement of Scottish Premier League football clubs has successfully caught the attention and imagination of the young people in the target group.
- The promotion of the sport4life game to Scottish schools has been highly successful, with over 500 teachers in over 300 schools expressing an interest.
- The game has also proved to be of value for centres dealing with disadvantaged and disaffected young people.
- The support provided to schools to adopt, install and play the game was valued. This included masterclass training, delivered largely by pupils.
- Through the game play almost 25,000 young people have been given the opportunity to develop competences and dispositions valued by society and of relevance to their future working lives.
- Through the use of the game linked to specific business topics, some pupils have been helped in their learning and understanding of them. However, there was no strong evidence of improvement in subject performance.
- The game and its resources have enabled schools to engage in learning activities relevant to the Scottish Government's agenda for a Curriculum for Excellence and its promotion of enterprise in education.
- Hundreds of teachers have improved their knowledge of how ICT, and games in particular, can enhance their learning and teaching. This is an important contribution to fulfilling the recommendations of HMIE with regard to ICT use in schools, and to the eventual success of Glow.
- A majority of teachers using the game indicate that it has had a transformational effect on their classroom practice.
- The project has successfully promoted the game to a broad audience through the use of prizes, publicity, conference presentations and showcase events, including a parliamentary reception.
- However, teachers need to further develop their own confidence and competence to make more effective use of the game and its teacher resources.
- A significant proportion of would-be users of the game were unable to do so through various circumstances, the most common of which related to poor quality ICT resources in their school or insufficient access to them.

14. **Recommendations** (for projects that develop a bespoke software product)

Prerequisites. The project should:

- be clearly identified with national initiatives in the school curriculum (such as Curriculum for Excellence, Determined to Succeed);
- secure support from sponsors who are well known and easily identifiable by young people; and
- seek alignment with parallel initiatives in Government-sponsored agencies.

Promotion. The project should:

- use multiple channels for the promotion of the product to teachers (including subject associations and authority networks); and
- for game-based products, encourage learner participation both in and out of school through the use of leaderboards and rewards.

Implementation. The project should:

- utilise a pilot phase to identify and address the range of operational issues that will arise;
- produce support materials and exemplars that are closely aligned to the subject curriculum that teachers have to deliver;
- be capable of implementation in almost all schools, taking into account the wide variation in ICT facilities and management arrangements that exists;
- aim to make the product accessible to pupils at home or in other non-school locations to promote independence in learning; and
- provide a responsive helpdesk support for teachers in the pilot phase and early implementation phase.

Professional development. The project should:

- agree with employers the contribution that teacher participation will make to their individual formal CPD record; and
- provide well-judged levels of training and support (such as masterclasses) to build teachers understanding of the product and their confidence in using it in the classroom.

APPENDIX A: EVALUATION OF PILOT GAME

Sports Store Game Pilot: December 2006 to February 2007

Analysis of teacher responses to the Sports Store game teacher survey

Survey

A link to the teacher survey form was placed on the sports store game front page and teachers encouraged to respond. To supplement the initial poor response to this invitation, a copy of the survey form was emailed to all participating teachers. Of the 12 responses received, 4 were the shortened “non-participant” survey form.

Of the 8 completed survey forms, one was virtually blank as the teacher and pupils had given up after a few weeks.

Subjects/Topics for which game was used

More than half of the schools used the game in business studies. Other uses were: computing (2), maths (1) and English (1). No school reported uses in PE or in PSE.

Playing the game in class

While most teachers had no difficulty in setting up the game on their school computers, almost all reported ongoing technical issues that resulted in most game plays being adversely affected by problems. Almost all reported that pupils had sufficient IT skills to play the game.

Using the teacher resources

Most schools used the game in ways unconnected with topic work. Only about half of the schools made any use of the teacher resources, which they found generally to be helpful and at the right level for their purposes.

Teaching resources used

Full use was made by one or more teachers of :

- BizEd Scenario 02 (Ownership)
- BizEd Scenario 16 (Staff)
- BizEd Scenario 21 (Sweatshops)
- BizEd Scenario 24 (Sales Pitch)
- BizEd Scenario 26 (Staff Injury)

Partial use was made by one or more teachers of:

- The 5 scenarios above, **plus**
- BizEd Scenario 08 (Net Profit)
- PSE Scenario 29 Short (Interview)
- English Scenario 31 Short (Advert)
- Maths/ICT Scenario 33 Short (Measurement)
- Maths/ICT Scenario 35 Short (Data Graphs)
- BizEd Scenario 46 (Faulty Goods)
- BizEd Scenario 74 (Supplier)

None of the teachers responding had made any use of 3 scenarios:

- PE Scenarios 37 & 38
- English Scenario 24

Match of game play to subject requirements

Almost all teachers agreed that playing the game helped in teaching aspects of their subject, and that playing the game gave pupils a chance to work with others. They thought that there were sufficient teacher resources linked to the game, but had mixed views on how well pupils linked the game play to the subject topic being taught.

Pupil engagement with learning

Almost all agreed that the game helped meet the needs of a wide range of pupils, with some commenting on positive effects on lower-attaining pupils. All experienced improved motivation and engagement through game play.

Benefits to teacher and pupils

Teachers differed widely in their views of how well the game play had helped pupils' understanding and performance in the topic being taught. They all agreed that lower-attaining pupils gained the most benefit. Almost all would continue to use the game in their subject.

Additional comments of note

One teacher commented that not all pupils enjoyed playing the game, nor did all manage to have success in running the sports store.

Most comments included a reference to the technical problems with the game at the onset of the pilot

One teacher liked the way that working in pairs helped pupils share successful techniques

One teacher very enthusiastic and would use game throughout SG Bus Man course – but ONLY if costs were underwritten by school.

The special school found that its pupils did not have skills to play the game independently.

List of subjects/topics for which game has been used in pilot (from survey responses)

Subject	Topic	Year Group	Level	No of pupils
Business	All topics	S3	SG	22
Business	All topics	S5/S6	H	12
Business		S3	SG	20
Business	Revision	S4	SG	18
Business	Business start-up	S3	SG	19
Business	ICT in Business	S4	SG	16
Business	Operations	S5/S6	H	19
Business	Marketing	S5/S6	H	19
Business	HRM	S5/S6	H	19
Computing/ICT	Various	S2/S3	N/A	6
Computing/ICT	Business Apps	S2	5-14 ICT	200
Computing/ICT	Business Apps	S3	SG	18
Maths	Maths in context	S2	5-14 Maths	16
English	Advertising	S1	5-14 English	27
Accounts	ICT in Business	S3	SG	16

Conclusion

There is general agreement that the game has the potential to motivate pupils and to provide a set of contexts for learning particular topics – especially in the area of finance. The success or otherwise of the game as a classroom tool will depend on its ease of use and the reliability of its game play.

Walter Patterson
May 2007

APPENDIX B: CURRICULUM FOR EXCELLENCE AND SPORT4LIFE

The Curriculum for Excellence is central to the Scottish Executive's aims at reviewing Scottish education. Curriculum for Excellence challenges teachers in Scotland to provide different educational experiences for their students. It encourages those working in education to consider different ways to deliver and evaluate the key skills necessary for students in the twenty-first century. Developments such as Sport4life are a valuable vehicle to enhance the educational experience of students in our Scottish schools. Sport4life will provide new opportunities for learning and teaching in the classroom.

Curriculum for Excellence expects connections between different subjects in secondary schools. Sport4life is ideally placed to support this objective by drawing on skills learnt from different areas of the curriculum. Instead of compartmentalising knowledge into separate subjects, Sports4life promotes interconnections to support problem solving throughout the game.

Health and well-being are important considerations for students in Scottish schools. The unique aspect of Sport4life is that success in this enterprise is not simply based on profit maximisation. The tenants of wellbeing or your character rating (what kind of person you are and whether people like you) and your social rating (how well respected you are in your community) are considered of equal importance to monetary success. This includes being self aware of their own health, how they relate to others and manage themselves and achieve success in different areas of activity. Sport4life mirrors the understanding that to do well in life students have to pay attention to a holistic view of success.

Sport4life allows students to experience choice while running their enterprise. Creativity is an important element of the Curriculum for Excellence and Sport4life will facilitate this in a way that offers students the opportunity to assess risks and make informed decisions in a realistic yet controlled environment.

The method in which Sport4life is adopted will vary from school to school, yet there is ample opportunity for students to work independently or work collaboratively while undertaking the game.

THE FOUR CAPACITIES

Developing successful learners

Sport4life involves students running a computerised simulation of a sports franchise. Working in a simulated business can often act as a motivator for students. Here pupils learn through experience. Making their own decisions in their sports shop often results in students experiencing real satisfaction and enjoyment. This encourages an openness to new thinking and ideas.

Playing the game will help students appreciate the importance of social and emotional factors and getting the balance right that will help to influence their health and well-being. The leader board within the game encourages students to try and reach high standards of achievement in the game, by role-playing different scenarios.

Sports4life provides exciting opportunities for students to develop creativity and develop entrepreneurial skills. Risk taking is developed in the confines of a business entity.

Students can learn independently or as part of a group. The flexibility of the learning model can be adapted in different ways. Technology can greatly enhance a student's ability to problem solve. The game allows students to look at the world in new ways. It helps them to become lateral thinkers. They learn to access information and think critically about evidence and arguments in order to arrive at their own conclusions. The study of Sports4life will support their development of skills in literacy and numeracy.

Developing confident individuals

Awareness of the factors determining enterprise will give students confidence to play a full and effective part in society. An appreciation of the importance to well-being of themselves and care of others will provide students with more confidence in developing the very necessary inter and intra personal skills.

Successful independent living depends upon the ability to deal with, for example, financial demands. Sport4life confronts students with real dilemmas of cash-flow and raising capital. In order to take an effective role in society students will need to have the confidence to use technology to assist in decision-making. Sports4life is a computer simulation which provides a very realistic experience for students. Learning through technology will equip students with important practical skills for daily life and for work. More importantly it will provide them with the confidence to continue to learn to use new technologies in the future.

Developing responsible citizens

Understanding of business will allow students to take an active part in the future success of the Scottish economy. Through the study of the game students will develop an understanding of economic realities and will allow them to develop their own values and beliefs.

Sports4life can help students to challenge the choices that consumers make and help them in the future to make informed choices particularly of an ethical nature. Several scenarios in the game raise important social, economical and ethical issues for students to deal with, such as the contribution to local communities, sweat shops and consumer driven demands.

Developing effective contributors

The scenarios that come from Sport4life allow students to apply skills and understanding creatively and logically to solve problems. Playing the game and using the accompanying paper based resources will permit students to work collaboratively to reduce risk while working through the scenario.

The emphasis on enterprise in Sport4life and the use of technology will prepare students for their future lives and careers. It encourages them to apply critical thinking in new contexts and allows them to create and develop different aspects of the game. Every time they play a new game they are able to solve problems and understand how a business is run.

An understanding of the demands of enterprise will help them formulate their understanding of Scotland's own contribution to a sustainable global economy. This experience should challenge them to see how they can contribute to the demands of the Scottish economy and become entrepreneurial in its widest sense. The study of the game provides an insight into human beliefs and behaviour that supports the aspirations for effective citizenship.

APPENDIX C: DETERMINED TO SUCCEED AND SPORT4LIFE.BIZ

The future success of Scotland is dependant upon our students being aware of business and developing entrepreneurial skills. This is echoed in *Determined to Succeed* (DtS), which is a shared statement of intent issued, by the Scottish Government, local authorities and business communities in Scotland.

Enterprise in education is about business and education working together. The aim is to provide students in Scottish schools with the necessary opportunities to develop skills to take an active and full part in the economic world in which they will be asked to contribute. This by definition requires our students to have exposure to business-like experiences while in education.

The Scottish Government's strategy for delivering enterprise in education states that every pupil must have an entitlement to enterprise activities on an annual basis in Scottish schools.

Sport4life.biz allows students to learn about enterprise. It is based upon a football sports store, the scenarios are those experienced by many of the major SPL football clubs in their on-line and in-house franchises. The game encourages entrepreneurial skills. While playing the game students will develop self-confidence and self-reliance. The game challenges students to consider the role that they can ultimately play in enterprise in a Scottish and international context.

Sport4life.biz involves students running a computerised simulation of a business. This computer programme will allow teachers to introduce enterprise in a way that students find motivating and relevant. Discussion will undoubtedly follow the playing of **Sport4life.biz** and here teachers can use students' experiences to challenge and inform.

Sport4life.biz can be used for students to learn individually where they have access to their own computer, but **Sport4life.biz** can be of equal value when students work in groups or are led by the teacher with the game projected in front of a whole class. **Sport4life.biz** is web based which means that enterprise learning does not need to be limited to the classroom but can continue out of school where there is access to the Internet.

Through interactive play in the classroom and at home **Sport4life.biz** encourages students to assess strengths and weaknesses during game play, source information and advice, make decisions, solve problems, use a different learning style using new technology, have fun and be motivated to do well through the leader board activities.

DtS is very much linked to the Scottish Government's intention to promote Lifelong Learning. **Sport4life.biz** aims to instil within students an understanding of business which will support their continued contribution to enterprise whether as employees, employers or entrepreneurs. By confronting students with real-life business situations, **Sport4life.biz** will enable students to continue to explore solutions and form opinions on the way the Scottish economy is determined.

Sport4life.biz is a fresh and innovative way to engage students in enterprise in education.

DtS's vision is to encourage the next generation of Scots to see the value of enterprise; **Sport4life.biz** is a vehicle to introduce this within Scottish schools and build an entrepreneurial culture for tomorrow.

APPENDIX D: List of teacher resources available

The teacher resource area, located on the game website, was created by Scottish teachers to help integrate the sport4life.biz game into classroom activities and included:

- Curriculum based resources that teachers can adapt to suit their needs
- Jumps to game scenarios linked to curriculum
- Class notes, activities and exercises for students to complete

Scottish curriculum resources currently available cover the following areas::

- Business Management (Standard Grade, Intermediate 1, Intermediate 2, Higher)
- Accounting and Finance (Standard Grade, Intermediate 1, Intermediate 2, Higher)
- 5-14 English Language
- Administration (Standard Grade, Intermediate 1, Intermediate 2, Higher)
- Physical Education S1 & S2

Subject	Title
General	How to use Sport4Life.biz in class
	Curriculum for Excellence and Sport4life
	Determined to succeed and Sport4life
	Introductory activity for the game level S1/S2
	Introductory activity for the game level S5/S6
	Introductory activity for the game Business Management (Standard Grade, Int1/Int2)
	Introductory activity for the game Business Management (Higher, Intermediate 2)
BizEd	Business Structure
	Using financial information
	Industrial relations
	External influences
	Marketing your business
	Health and Safety
	Managing quality
	External business growth
English	Sales pitch
	Interview skills
	Prepare an advert
Maths/ICT	Measure a store
	Graph sports data
PE	Teamwork
	Participate in an activity
PSE	Stock supply issues
	Interview skills

APPENDIX E : An Exemplar of Teacher Resources on the sport4life.biz website

Stock Supply Issues

Subject Reference

- Personal & Social Education

Course Links

- Moral and ethical issues, children's rights, work experience

Learning Intentions

Students should understand the issues around child labour and Scottish employment laws for under 16 year olds.

At the end of this activity students will be able to:

- Understand the reasons for employment laws.
- Make decisions after considering moral, ethical and economic issues.

Resources (Microsoft Word Documents)

- Stock Supply Issues lesson plan
- External influences explained (Student notes)
- External influences issues and consequences student worksheet
- External influences student questions activity
- Prepare newspaper articles (Student activity)
- Investigate business ethics (Student activity)
- External influences word game (Student activity)
- Stock Supply Issues - child labour and the law (Student activity)
- External influences lesson presentation (PowerPoint file)

Game Jump

Click on "Play Now" to jump to a new game where there are protests that a line of clothing in The Sports Store is manufactured overseas in sweat shops in developing countries.

External Influences

Description

Your mentor Sam arrives with a warning that he has noticed protestors outside the store. A newspaper article confirms that the protestors have an issue with the supplier of RAD products. Sam says that he has spoken to your lawyer on your behalf and asked for an opinion about the RAD contract and the lawyer will e-mail the following week.

The player should ideally investigate all options before making a decision such as the legal position, whether or not the protests are justified and what actions are possible.

Credibility of the store declines until appropriate action is taken, resulting in reduced sales.

Indicators and options

Week 1		Week 2
Comment by Sam in pop up window		
Read newspaper article.		
Phone RAD products to ask about the protests. (option only available once)		
Read the RAD contract in filing cabinet.		

Issue a press release from options on notice board.		
Talk to Sam in Office.	Triggers	E-mail from Lawyer with option to cancel the contract.
	Triggers	E-mail from Sam with his thoughts.

Reactions

If no action taken	Protests continue and sales decline
Cancel contract	Protests stop, product no longer available, credibility improves temporarily, option to send press release remains for next 3 weeks.
Issue press release that store is continuing with RAD	Credibility drops further and continues to drop each week Newspaper article appears the following week
Issue press release that store is dropping RAD products	Credibility improves and stops dropping Newspaper article appears the following week

APPENDIX F: SUMMARY OF PUPIL RESPONSES

How many game sessions have you played:

	< 10	10-20	> 20	Total
In the last month:	778	94	46	918
In total	578	130	91	799

I have played the game:

	A lot	Never	Sometimes	Total
In the School Library or ICT rooms	101	548	276	925
In the classroom with my teacher	146	426	317	889
Away from school (at home or elsewhere)	90	539	245	874

I have played the game:

	A lot	Never	Sometimes	Total
For personal reasons (enjoyment, fun)	147	470	301	918
To improve my score for the leaderboard	113	514	246	873
To help me understand better how businesses work	135	445	300	880
Because the teacher wanted me to understand a particular topic (such a pricing or stock)	132	465	261	858

Through playing the game I have learned:

	A lot	Not Much	Some	Total
That managing stock is important in a retail store	197	415	289	901
That setting price levels is important in business	203	388	285	876
Some likely issues when managing staff in a business	172	405	304	881
The importance of managing money in a business	216	390	270	876
That computer games are a helpful way of learning things	198	389	277	864

S1	S2	S3	S4	S5	S6	Other	Total
72	363	260	114	45	21	64	939

APPENDIX G: SURVEY FORM USED FOR TEACHER RESPONSES

Sport4Life Evaluation



Vanessa Rinaldi Project Manager,
Sport4Life Business Enterprise Game
SQA 6th Floor
Optima House 58 Robertson Street
Glasgow G2 8DQ
www.sport4life.biz

Date:

School Name:

Address:

Postal Code:

Respondent's
Teacher Name:

Position:

Subject:

Question 1: When using the game with your class, what was the typical frequency of the game use?

- Regularly in each period
- Regularly in one period each week
- Once ever three or four weeks
- Never used

Question 2: Which of the following game characteristics did you use with your pupils?

- | | | | |
|---|-----------------------------|---------------------------------|-----------------------------|
| General game play for business awareness | <input type="radio"/> Never | <input type="radio"/> Sometimes | <input type="radio"/> Often |
| Game play to support a topic | <input type="radio"/> Never | <input type="radio"/> Sometimes | <input type="radio"/> Often |
| The built-in game jumps for specific topics | <input type="radio"/> Never | <input type="radio"/> Sometimes | <input type="radio"/> Often |

Question 3: Which of the following modes of game use, have you tried?

- | | | | |
|------------------------|-----------------------------|---------------------------------|-----------------------------|
| Teacher-led activities | <input type="radio"/> Never | <input type="radio"/> Sometimes | <input type="radio"/> Often |
| Pupil group activities | <input type="radio"/> Never | <input type="radio"/> Sometimes | <input type="radio"/> Often |
| Pupil independent play | <input type="radio"/> Never | <input type="radio"/> Sometimes | <input type="radio"/> Often |

Other (please specify)

Question 4: How useful were the teacher resources for your subject area?

- Not very useful
- Of limited use
- Very useful

Question 5: How helpful were the teacher resources in guiding your use of the game in class?

- Not very useful
- Of limited help
- Very helpful

Question 6: In the table below list which topics you have used the game for, as part of learning and teaching?

Subject	Topic	Year Group	Level	Number of pupils
<i>eg Business</i>	<i>eg Marketing</i>	<i>eg. S5</i>	<i>eg Int 2</i>	<i>eg 12</i>

Question 7: In the table below, highlight the teacher resources you used when playing the game?

Subject	Scenario number	Title
General		How to use Sport4Life.biz in class
		Curriculum for Excellence and Sport4life
		Determined to succeed and Sport4life
		Introductory activity for the game level S1/S2
		Introductory activity for the game level S5/S6
		Introductory activity for the game Business Management (Standard grade, Int1/Int2)
BizEd	02	Business Structure
	08	Using financial information
	16	Industrial relations
	21	External influences
	24	Marketing your business
	26	Health and Safety
	46	Managing quality
	74	External business growth
English	24	Sales pitch
	29	Interview skills
	31	Prepare an advert
Maths/ICT	33	Measure a store
	35	Graph sports data
PE	37	Teamwork
	38	Participate in an activity
PSE	21	Stock supply issues
	29	Interview skills

Question 8: How difficult was it to get technical support to set-up the game on the school computers

- Not difficult
- Some difficulties
- Major difficulties
- Not known to me

Question 9: When you reported game issues (either to the SQA contact or to the game producers), how effective was the response?

- Very effective to resolve issue
- Some delay that affected ability to play the game
- Major delay that impacted on ability to play the game

Question 10: What proportion of your pupils had sufficient IT skills to play the game without teacher help?

- A few
- Most
- Almost all
- All

Question 11: In those aspects of your subject where you used game play, how helpful was this to your teaching?

- Helped a little
- Helped reasonably well
- Helped a great deal

Question 12: How quick were your pupils at understanding the link between playing the game and topics they were learning?

- Slow at making the links
- Made links with some help
- Quick at making the links

Question 12: What contribution did playing the game make to improving pupil understanding in the subjects/topics you were teaching?

- A small contribution
- Some contribution
- A significant contribution

Question 13: Since making use of the game in your subject, what level of improvement has there been in pupil's performance in your subject?

- No noticeable improvement
- A noticeable improvement
- A significant improvement

Question 14: If it remains free to use, how likely are you to continue to use the game to enhance teaching and learning in your subject?

- Unlikely
- Undecided
- Very likely

Question 15: At what level of annual cost would it become prohibitive to you using the game?

- £100 per year
- £200 per year
- £400 per year
- £1,000 per year

Question 16: How likely are you to extend your use of computer games to help with learning and teaching in your subject?

- Not very likely
- Would consider
- Highly likely

Do you have any other comments you wish to make? Please write below:

Thank you for taking the time to provide this valuable feedback to us. Your responses will be treated in the strictest confidence and will form the basis for the evaluation report, which we will share with all participating schools.

APPENDIX H: USE OF SPORT4LIFE GAME IN A YOUTH INCLUSION PROGRAMME

Falkirk Solutions is a training unit set up within Falkirk Football Club. It delivers educational and training programmes on behalf of Job Centre Plus, programmes funded through the government's NEET strategy, and football coaching for schools (over 3000 pupils a week). Falkirk Solutions also delivers a youth inclusion programme (*Kickstart*) aimed at those in danger of social exclusion. It had a deliberate policy of recruiting from schools those youngsters who were "furthest away" from any kind of success in their schooling. The centre used the sport4life.biz game initially as a means of showing these young people some aspects of the world of work – such as the responsibilities of an employer in hiring and firing staff.

In the last 4 weeks of each Kickstart programme the game was utilised in a more structured fashion and aspects of the young people's experience of the game were used to tie in with preparing them for their next steps – eg preparation of CVs. The pupils have a weekly 1 hour slot for playing the game in the centre's IT suite, but are encouraged to use it as much as they want at home or in other places where they might have internet access. The centre offered a monetary prize for highest score and this had a positive effect on the level of game play and pupils' focus on what was happening in the game.

The young people interviewed were enthusiastic about the game and had a clear idea of how it helped them understand the way that a business worked. They spoke in a fairly knowledgeable way about the aspects that had to be managed in the game (stock levels, price, funds, staff, training, leisure time).

Falkirk Solutions staff were convinced of the success of the game in securing their objectives and were committed to its use as an important element of their preparation of these "at risk" young people for return to normal schooling or to the world of work.

APPENDIX I : GAME SCENARIOS

- 1 Prepare accounts yourself or employ an accountant
- 2 Selecting an appropriate ownership structure
- 3 Appears to be money missing from the register
- 4 Reconciling bank statements
- 5 Determine whether there are enough funds for new purchase
- 6 Producing financial statements for external users
- 7 Suspicion of stolen inventory
- 8 Declining Net profit over four weeks
- 9 Analysis of financial measures
- 10 Investigation as to whether it's more cost effective to make or buy certain product items
- 11 Engage services of a marketing specialist
- 12 The Government commences an advertising campaign to promote healthy living
- 13 Higher wages need to be offered
- 14 Change of suppliers due to external events
- 15 Examining the consequences of continuing to buy from current source
- 16 Staff member has been performing poorly
- 17 Staff member is caught stealing
- 18 Ex staff member takes legal action
- 19 Consider ways of preventing further theft of stock
- 20 Respond in writing to a legal matter
- 21 Rumour that a line of clothing stocked is manufactured overseas
- 22 Prepare a press release or media speech in response to bad press
- 23 Conduct research into current fashion trends
- 24 Prepare a presentation outlining why store should be chosen to carry a new fashion range
- 25 Business needs to raise additional funds
- 26 Staff member suffering from various aches and pains associated with workplace
- 27 Extension to store hours
- 28 Store causing concerns for neighbours
- 29 Conduct interview of prospective employees
- 30 Unsuccessful applicant takes legal action for discrimination
- 31 Produce advertising material
- 32 Choosing the best advertising medium
- 33 Measurement of retail premises for insurance purposes
- 34 Problems when reporting recent market research to customers
- 35 Graphs of various data to enable accurate performance comparisons
- 36 Use of sample data from market research
- 37 Employees take part in 'team building' exercises
- 38 Encourage staff to engage in physical activity
- 39 Class undertake role of 'staff' and compete and performance measured
- 40 Sales appear to be declining
- 41 Advertising campaign to publicise role of sport in promoting health
- 42 Dealing with damaged stock arriving in store
- 43 Large customer unable to pay
- 44 Star player suffers injury resulting in large quantity of stock unlikely to sell

- 45 Complaints over price of item compared to price advertised
- 46 Customer returns faulty goods
- 47 Advertise product at discounted price, but then run out of stock
- 48 A key staff member is headhunted by a competitor
- 49 Computerised cash register fails
- 50 Consider insurance options
- 51 Stock is damaged due to flooding
- 52 Store is damaged in a fire
- 53 Owner suffers ill health
- 54 Occupational safety and health issue
- 55 Oil price increases substantially
- 56 New law passed to increase minimum wages
- 57 Competitor has a sale with reduced prices
- 58 Competitor permanently lowers prices
- 59 Supplier goes bankrupt
- 60 Interest rates increase
- 61 Dock workers go on strike
- 62 Severe bad weather closes all main highways
- 63 Store fails a health and safety check
- 64 Run a competition for customers
- 65 Calculate appropriate discounts for a sale
- 66 A new star player signs for local football club
- 67 A billionaire bid to buy the local football club
- 68 Local football team announces plan to change colours of its away strip
- 69 Staff member observes owner of competing store wandering in store
- 70 A competitor is quoted in the media saying bad things about store
- 71 The local school approaches store for sponsorship
- 72 Local school asks you to come and speak and hand out certificates at sports prizegiving
- 73 You win a free 2-week holiday overseas
- 74 Opportunity arises to purchase a key supplier
- 75 Get an independent person to mystery shop at your store and competitor's store