



# Falkirk Council Education Services



## Evaluation of Classroom Response Systems / Voting Tools

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# Contents

Purpose.....	3
What are Classroom Response Systems / Voting Tools? .....	3
What can you do in a classroom with Classroom Response Systems / Voting Tools?.....	4
Evaluative trials by Falkirk ICT Masterclass Teachers .....	5
Conclusions .....	6
Recommendations .....	<b>Error! Bookmark not defined.</b>
Appendix 1 - Details of the companies which provided loan sets of voting tools for evaluation.....	9
Appendix 2 – Features Comparison Chart .....	16

**Falkirk Council Education Services**  
**Evaluation of Classroom Response Systems / Voting Tools**

## **Purpose**

- 1.1. The purpose of this paper is to set out the recommendations for Educational Establishments in Falkirk Council considering purchase of Classroom Response Systems / Voting Tools.
- 1.2. This paper will set out the rationale behind the use of Classroom Response Systems / Voting Tools in primary and secondary schools, as well as provide the findings of evaluative trials by Falkirk ICT Masterclass Teachers of Classroom Response Systems / Voting Tools supplied on loan for this evaluation from various manufacturers/suppliers undertaken between November 2005 and February 2006 in primary and secondary schools.

## **What are Classroom Response Systems / Voting Tools?**

- 2.1 Interactive voting systems or assessment systems are becoming more common in Scottish classrooms. They are handheld infra-red or wireless devices that resemble television remote controls.
- 2.2 These are available from many suppliers and generally consist of a set of pupil remote controls, one teacher control, a receiver and software to make your own slides.
- 2.3 How the system works is that each pupil is assigned a remote control with voting buttons (depending on the supplier this can vary from a limited number of button choices to a range of numbers, letters and yes/no response buttons, and some with feedback on each handset).
- 2.4 Questions are arranged as a series of slides and the slides are projected onto a screen using a data projector. The teacher controls the sequence of slides and questions and can choose to simply note the responses, or change the direction of teaching depending on the outcome of the responses, or show the results as a graph, or use one of a range of games which encourage the children to challenge each other in the class. The pupils respond to the questions via their own remote controls and the receiver collects the information.
- 2.5 A receiver picks up all the responses and these are stored on the teacher's computer. The answers can be immediately graded, tallied and analyzed by the system. The results can be seen instantly on-screen or later, and the teacher can print off reports, including statistics and graphs.
- 2.6 Questions can be set in a wide variety of forms. The range of question types varies between the different Classroom Response Systems / Voting Tools packages. When choosing a system the availability of the following question types should be considered in relation to the user's context and needs:
  - True/False;
  - Yes/No;

- Multiple choice;
- Numeric (decimals/fractions/negative numbers);
- Multiple mark (more than 1 correct answer);
- Sequence;
- Rating scale;
- Spontaneous/Verbal question;
- Paper based test facility;
- Fill in the blank;
- Short answer specific (text based)

2.7 Teachers are able to customise their questions either prior to or during the delivery of a lesson. Teachers use these to engage and actively involve every participant. Combines real-time assessment, dynamic presentation options, enjoyable learning games, and tools to simplify the creation of materials by teachers.

2.8 A typical Classroom Response System / Voting Tools package comprises:

- a set of handsets (most come in packs from 8 to 36 with additional handsets able to be purchased);
- a teacher handset (which usually has additional controls);
- a receiver to be attached to the computer to pick up the signals from the handsets (can be infrared or radio frequency)
- software, for the computer to which is attached the receiver, in which to make and present questions, and record response information.

## **What can you do in a classroom with Classroom Response Systems / Voting Tools?**

3.1 Teachers have reported that voting tools lend themselves to undertaking formative assessment - results can be gathered instantly to enable teachers to identify areas requiring further clarification during a lesson. Voting tools complement the Assessment is for Learning programme (AifL) in that assessment is immediate, the teacher is given instant feedback of the level of understanding of each pupil so that differentiation of support can take place as the teaching is undertaken so that the learning process is enhanced.

3.2 During a lesson teachers can see immediately if the group or individual pupils are struggling. Instant on-screen results can show, for example, that a particular question was answered incorrectly by a large percentage, or that one pupil was always the last to answer. They can then give more instruction or adapt their teaching to suit the needs of the pupils.

3.3 Voting tools can be used effectively for summative testing and free teachers from the burden of manual marking and report-writing - when results or detailed reports are needed to show progress or to evaluate lessons, all the information is already stored. From this, the teacher can select which data and report format they need and simply print off a report, or export to Excel.

3.4 Classroom response systems can transform traditional question and answer sessions, end-of-lesson assessment, class surveys, voting, quizzes, tests and group activities.

The systems offer different question and answer formats, from timed multiple-choice to a simple signal that a learner is ready to answer verbally.

3.5 ICT Masterclass teachers reported a marked motivational value of the voting tools.

3.6 There is instant feedback for the pupils, the responses of every pupil for every question is recorded without disrupting the flow of a lesson, there is no marking for the teacher, and the direction of a lesson can be varied immediately in response to feedback from pupils.

3.7 For links to further information about the use of classroom response systems the following may be helpful:

<http://www.campusclickers.com/GESD%2040resources.htm>

3.8 For further comparative information and evaluative comments of classroom response systems the following document may provide useful information:

[http://www.schooltechleadership.org/uploaded/Documents/2004\\_STLI\\_Student\\_Response\\_Systems.pdf](http://www.schooltechleadership.org/uploaded/Documents/2004_STLI_Student_Response_Systems.pdf)

## **Evaluative trials by Falkirk ICT Masterclass Teachers**

4.1 There are several systems available. Each of the major companies currently supplying Classroom Response Systems / Voting Tools in the United Kingdom were asked to provide a set of voting tools each for a short-term loan evaluation process from mid-November to mid-December 2005 for Falkirk ICT Masterclass teachers in both the primary and secondary sector.

4.2 Each system has different features which are suitable for the varying needs of different educational environments and users. Aspects to consider when choosing which system is appropriate for an individual school's needs are:

- Cost
- Number of handsets
- Import of existing Powerpoint presentations
- Infrared or Radio Frequency
- Size of handset
- Range of features of handset
- Battery type
- Range of question types
- Inclusion of pre-prepared content
- Inclusion of games/variety of presentation types
- Export of pupil response data into Excel

4.3 The ICT Masterclass Teachers who elected to undertake this evaluation represented primary and secondary, promoted and non-promoted staff, and made use of the tools in varying subject areas both in primary and secondary. Details of the stages and subject areas are given in Appendix 1.

4.4 The Evaluation process involved the completion by each of the ICT masterclass teachers of an online forum, or weblog (Blog), created for the purpose at [www.falkirkvte.blogspot.com](http://www.falkirkvte.blogspot.com).

- 4.5 The Blog has open access to anyone to view, but contributions were enabled only for the evaluating ICT Masterclass teachers, the central ICT Curriculum Support team at Camelon Education Centre, and the companies providing the loan sets.
- 4.6 Guidelines to evaluation were issued to the ICT masterclass teachers. These guidelines specified that the following categories should form the basis for the evaluation and would appear on the Blog.
- 4.6.1 Ease of setup
  - 4.6.2 Compatibility/ ease of transfer with current a resources
  - 4.6.3 Hardware and technical issues
  - 4.6.4 Comment on range of question styles available
  - 4.6.5 Can feedback be customized to suit need
  - 4.6.6 Storage issues
  - 4.6.7 Pupil response/motivation
- 4.7 The Blog included a list of the contributors and the system being evaluated. In addition there were weblinks to the web resources for each of the systems being evaluated.
- 4.8 The companies providing the evaluation sets between November and February 2006 were each invited to provide a demonstration between the end of October 2005 to mid November to the central ICT Curriculum Support team in Camelon Education Centre (with invitations to attend these 1-hour sessions being extended to the ICT Masterclass teachers where they would be available) as well as a one-to-one training session around the same time period with the specific Masterclass teacher who will be evaluating their product. The companies were also able to contribute to the online blog (to add comments or contribute ideas or provide instructional advice).
- 4.9 Appendix 1 provides the details of the companies which provided evaluation sets of voting tools each for a short-term loan evaluation process between November 2005 and February 2006, matched to the Masterclass teachers who undertook the evaluations and their comments.

## Conclusions

- 5.1 In the hands of a skilled classroom practitioner any of the voting systems can be a powerful tool in the teaching and learning process. Each system had strengths.
- 5.2 Improved motivation with pupils across all abilities and stages was a strong recurring comment by all those evaluating the classroom response systems / voting tools, whichever make was used.
- 5.3 While this evaluation did not set out to provide quantifiable data to make a connection between using classroom response systems and raising attainment, reference to the following examples of research shows that teachers using Classroom Response Systems have reported a qualitatively noticeable difference in the standard of understanding demonstrated in course work:

[www.socratec.com/FrontPage/Web\\_Pages/study.htm](http://www.socratec.com/FrontPage/Web_Pages/study.htm) - paper by Dr. Harold M Horowitz, 2003.

<http://www.crlt.umich.edu/inst/ECARCRS.pdf> - paper by Ian Beatty, 2004

- 5.4 Wireless, known also as Radio Frequency (RF), is the preferred option over infra-red (IR). RF technology has a greater range than IR signals (typical 300 metres against IR range of 25 metres), enabling a greater number of participants. There is also no need for line-of-sight between base unit and remote as radio waves are omni-directional. The greater cost of RF over IR has to be balanced against the ease of operation.
- 5.5 Greater choices and options have to be balanced with the ease of use with regard to proposed users.
- 5.6 Type of responses and number of responses on a handset has impact on range of uses (e.g. only letters or numbers, and restricted number in some).
- 5.7 Inclusion of games activities, or a variety of presentation options, were seen as a major motivator.
- 5.8 Pre-created Content has to be considered in costs as appropriate content is seen as essential by ICT Masterclass teachers.
- 5.9** This evaluation was over a limited timescale and a couple of Masterclass teachers voiced a concern that perhaps the use of a classroom response system / voting tools would only have a positive impact in the early stages of use and the beneficial effects would wear off as the novelty-factor diminished. However a more extended study by the Assessment is for Learning Programme in Northern Ireland undertaken by Canterbury University (<http://client.cant.ac.uk/research/case-studies/qwizdom/assess/>) found that “The initial concerns of the teachers were however unfounded. Student feedback over an extended period of time demonstrated that the ‘novelty factor’ did not diminish over time.”
- 5.10 When managing the introduction and implementation in a school of Classroom Response Systems / Voting Tools it would be recommended that some consideration would have to be made with regards to the logistics of introduction and implementation.
- 5.11 Staff training should be considered in the choice of system – some suppliers provide training as part of purchase, some provide online demonstrations, some provide no training materials.
- 5.12 Each supplier can provide several different sized sets but for direct comparison costs need to be based on the same class-size (for this evaluation each company was asked to provide the price for a Scottish class limit of 33 children requiring one classroom response unit each with one teacher unit).
- 5.13 Replacement batteries / rechargeable units. Different systems use different kinds of batteries, from standard AA batteries, through the kinds of batteries typically found in wristwatches, to rechargeable handsets. The lifespan of each and replacement is a cost consideration.

**5.14** While it is acknowledged that each Classroom Response System had strengths and performed well in providing a valuable resource for all of the Masterclass teachers, when looked overall at all the systems, and compared across a range of factors, the ICT Curriculum Support team reached their own conclusions as to what they would recommend to schools in Falkirk Council to provide best value, ease of use and versatility to suit the needs of schools in Falkirk Council.

**Appendix 1 - Details of the companies which provided loan sets of voting tools for evaluation**

Process took place between November 2005 and February 2006, matched to the Masterclass teachers who undertook the evaluations and their comments

<p><b>Product: ACTIVote - The Interactive Student Response Solution</b></p>	
<p>Supplier: Promethean Limited, TDS House, Lower Philips Road, Blackburn, Lancashire BB1 5TH</p>	
<p>Tel: 0870 241 3194.</p>	
<p>Website: <a href="http://www.prometheanworld.com">www.prometheanworld.com</a></p>	
<p>Contact: Anne Latona, Education Consultant</p>	
<p>Tel: 07855 741859</p>	
<p>E-mail: <a href="mailto:anne.latona@prometheanworld.com">anne.latona@prometheanworld.com</a></p>	
<p>Masterclass teacher: Claire Quigley, Depute Headteacher, Westquarter Primary School, Westquarter Primary School, Westquarter Avenue, Westquarter, Falkirk FK2 9RN. Tel: 01324 503950. E-mail: <a href="mailto:claire.quigley@falkirk.gov.uk">claire.quigley@falkirk.gov.uk</a></p>	
<p>Claire Quigley reported, “There were a few problems with the set up - installing software etc. but Michelle Horsburgh from Promethean managed to get round these and once the software had been installed the rest of the set up was fairly straight forward. The good thing about it is if you forget there are tutors inbuilt into the software to guide you through the process. The product itself is nice to hold and it can sit on the desk too. It is easy to use, basically choose and press a button to show you have voted, and the children took to it immediately. Michelle delivered training to myself and the two P7 teachers - we got together after school one evening to go through it again ourselves and found that it was very easy to use and understand. The children have had no bother with it at all. The software is excellent. It comes with a range of flipcharts covering all areas of the curriculum and would be good to use even without the voting tool! I had initially thought it would be set up in the ICT Suite but quickly realised that in order to use it well it had to be available to pick up and use at any time - which meant setting up in the class. The children love it and the teachers are keen to learn more about making up their own flipcharts etc. The experience was very positive.”</p>	

Product: <b>Qwizdom voting system Q4 (RF).</b>	
Supplier; Scotsys, 10 James Street, Righead Industrial Park, Bellshill ML4 3LU.	
Tel: 0845 606 2641.	
Contact: Kevin McAuley	
Tel: 07808 571215.	
E-mail: <a href="mailto:kmcauley@scotsys.co.uk">kmcauley@scotsys.co.uk</a>	
Website: <a href="http://www.scotsys.co.uk">www.scotsys.co.uk</a> and <a href="http://www.qwizdom.co.uk">www.qwizdom.co.uk</a>	
Masterclass teacher: Tommy McKinlay, Principal Teacher, Braes High School, Newlands Road, Reddingmuirhead, Falkirk FK2 0DA. Tel: 01324 719551. E-mail: <a href="mailto:tommy.mckinlay@falkirk.gov.uk">tommy.mckinlay@falkirk.gov.uk</a>	
<p>Tommy McKinlay reported that, "I had previous experience of working with Qwizdom Q3. I had problems installing the software but with the help of Kevin McAuley at Scotsys these problems were quickly resolved. Compatibility, ease of transfer of existing materials - this is varied, dependent on the original format. From Powerpoint - I found it very easy to quickly change a set of Powerpoint slides into an interactive quiz. But from Word, including graphics, I found it to be very time consuming using the cut &amp; paste facilities. The latest version of the software does make this easier but it is still time consuming. Next time I think that I'll just type directly into the software. A wide range of questions are available ranging from multiple choice type to True/False or Yes/No questions. Supplied in a case teachers have not found any problems. The handsets are big enough not to be accidentally misplaced. All pupils who have used the system in the class have responded well - all keen to take part in the question and answering sessions. The only problem has been making sure that the handsets are turned off at the end of a session. I would have preferred to see a distinct on/off button. Used within the DET department to run end of unit tests which we have made ourselves and also used it within the end of term assembly for S1 and S2 to run an interhouse quiz. It proved very successful.</p>	

Product: <b>Qwizdom voting systems Q3 (IR) and Q5 (RF).</b>	Q3	
Supplier: RM plc, Belhaven House, Lark Way, Strathclyde Business Park, Bellshill ML4 3RB.		
Tel: 01698 578000.	Q5	
Contact: Douglas Chappelle		
Tel: 07899 062596.		
E-mail: <a href="mailto:dchappelle@rm.com">dchappelle@rm.com</a>		
Website: <a href="http://www.rm.com">www.rm.com</a> and <a href="http://www.qwizdom.co.uk">www.qwizdom.co.uk</a>		
Masterclass teacher: James Murphy, Principal Teacher, St Mungo's High School, Merchiston Avenue, Falkirk FK2 7JT. Tel: 01324 628416. E-mail: <a href="mailto:james.murphy@falkirk.gov.uk">james.murphy@falkirk.gov.uk</a>		
<p>James Murphy reported that, “The software is very good and easy to use although the content packs are written specifically for the English curriculum. Both sets worked well. I have trialled the software in the faculty of science, maths, modern languages as well as during an assembly. The staff and pupils both enjoy using the package and I have found it particularly useful for motivating pupils. Does not embed an inserted image but puts a shortcut. Games were fantastic. We are also keen to use the kits for pupil and staff surveys. Pupils of lower ability were listening more intently – knew they were being tested so paid attention. Radio frequency ones would be recommended. Good for Quality assurance – the school Senior Management Team were keen on this part. School was enthused and will now be purchasing several sets.”</p>		

<b>Product: GeneeUs Interactive Education Voting System</b>	
Supplier: Interactive Education, Libra House, 2 Upper Zoar Street, Wolverhampton WV3 0LA.	
Tel: 0870 0434024.	
Contact: Sarah Peers, Education Consultant	
Tel: 07841 235110	
E-mail: <a href="mailto:sarah@interactive-education.co.uk">sarah@interactive-education.co.uk</a>	
Website: <a href="http://www.interactive-education.co.uk">www.interactive-education.co.uk</a>	
Masterclass teacher: Steve Dougan, Depute Headteacher, Bo'ness Academy, Gauze Road, Bo'ness EH51 9AS. Tel: 01506 822028. E-mail: <a href="mailto:steve.dougan@falkirk.gov.uk">steve.dougan@falkirk.gov.uk</a>	
<p>Steve Dougan reported that, “The content that we saw during the demonstration looked professional and it was very easy to make up your own questions. As the system GeneeUs by Interactive Education is still being developed we were given the opportunity to submit material to the company who would in turn change it into animated work. Unfortunately there were unresolved difficulties in installing the software.”</p>	

<b>Product: Turning Point Classroom Response System.</b>	
Supplier: RM plc, Belhaven House, Lark Way, Strathclyde Business Park, Bellshill ML4 3RB.	
Tel: 01698 578000.	
Contact: Douglas Chappelle	
Tel: 07899 062596.	
E-mail: <a href="mailto:dchappelle@rm.com">dchappelle@rm.com</a>	
Website: <a href="http://www.rm.com">www.rm.com</a> and <a href="http://www.turningtechnologies.co.uk">www.turningtechnologies.co.uk</a>	
with Steljes, 12 Syon Gate Way, Brentford, Middlesex TW8 9DD.	
Tel: 020 8213 2100	
Website: <a href="http://www.steljes.co.uk">www.steljes.co.uk</a>	
Contact: Mitt Nathwani, Turningpoint product manager	
E-mail: <a href="mailto:Mitt.Nathwani@steljes.co.uk">Mitt.Nathwani@steljes.co.uk</a>	
Website: <a href="http://www.turningtechnologies.co.uk">www.turningtechnologies.co.uk</a>	
Masterclass teacher: Maggie Barrowman, ICT Co-ordinator, Larbert Village Primary School, Main Street, Larbert, Falkirk FK5 3AP. Tel: 01324 503420. E-mail: <a href="mailto:maggie.barrowman@falkirk.gov.uk">maggie.barrowman@falkirk.gov.uk</a>	
<p>Maggie Barrowman reported, “There were problems getting the software installed at first as I couldn’t find the examples or help files at all – so it was a bind having to seemingly create everything from scratch. It works on the PowerPoint program. I used my own pre-created Environmental Studies topic Powerpoint presentations with ease. There were no games provided. I was only given 16 hand sets when I had a class of twenty eight so we had to share so we did most of our work in groups of two. This worked especially well in problem-solving activities. The children loved seeing the results on the board. There was good pupil response to Turning point. I used it in maths and topic as well as in simple spelling tests for a learning support group.</p>	

<b>Product: Educlick Classroom Response System</b>	
Supplier: Aclass Technology (UK) Ltd, Technology House, 46b Bradford Road, Brighouse HD6 1RY.	
Tel: 01484 717070	
Fax: 01484 404795	
Website: <a href="http://www.aclasstechnology.co.uk">www.aclasstechnology.co.uk</a>	
Contact: Stuart Malthouse (Mobile: 07779 126180) Business Development Manager	
And Mr Peter Land, Edinburgh, Business Development Consultant (Scotland)	
Tel: 07921620272	
E-mail: <a href="mailto:peterl01@aclasstechnology.com">peterl01@aclasstechnology.com</a>	
Masterclass teacher: Lesley Shave, class teacher, Moray Primary School, Moray Place, Grangemouth FK3 9DL. Tel: 01324 501300. E-mail: <a href="mailto:lesley.shave@falkirk.gov.uk">lesley.shave@falkirk.gov.uk</a>	
<p>Lesley Shave reported that, "I had a bit of a shaky start with this. After the demonstration I could have done with more information. Then we had some trouble getting my ageing laptop to work with the program but the system is quite easy to use and to be fair I think installation is normally straightforward. The lessons which come with it are mostly geared to the English curriculum but Scottish ones are promised. Typing in classes is a bit tedious and I was not able to figure out how to import them until I found that their website (<a href="http://www.aclasstechnology.co.uk/eduClick/faq.html#class">www.aclasstechnology.co.uk/eduClick/faq.html#class</a>) had instructions on how to import classes from Excel. Children are really enjoying using it. The main issues I have with the system relate to the fact that the infra-red system has difficulty coping with 33 children all trying to answer at the same time. When in the first past the post mode I wasn't sure if it was really the pupil who pressed first whose response came on the screen first. I was told that it is important that the infra-red receiver is placed in a central position, ideally located above the projected image; as is true of all Infrared systems. The system has proved to be reliable. There was a range of pre-created lessons, though geared towards the English curriculum, which can be transferred for use in Scotland but that all takes time- not being familiar with another system meant it was easy to choose the wrong level. The system comes in a very neat storage bag which holds all the voting handsets securely. The receiver however strikes me as being a bit vulnerable and not that sturdy. Each EduClick system comes with a tripod for the receiver. This is generally used when the system is moved between classrooms. However a magnetic and a screw fit wall mount are also supplied so the receiver can be permanently mounted. Children were extremely well motivated. This was particularly noticeable in whole class activities. The children had a handset each and even those who were normally reluctant to answer were trying very hard to register their answer. I used it for a post topic assessment and although results were much in the same range as usual there were very few unanswered questions, as children did not want others to see that they had not answered. In maths, children especially liked the competition element in mental activities - this working very well in our broad banded groups.</p>	

Product: <b>OptiVote</b> with both IF (Infra-Red) and RF (Radio Frequency) capability.	
Supplier: eInstruction UK Ltd, Farnley Hall Estate, The Square, Farnley, Otley, Yorkshire LS21 2QF	
Tel: 01943 850 119	
Fax: 01943 850 714	
Contact: Philip Stanley	
Tel: 07793 816491	
E-mail: <a href="mailto:philip.stanley@eInstruction.uk.com">philip.stanley@eInstruction.uk.com</a>	
Website: <a href="http://www.eInstruction.uk.com">www.eInstruction.uk.com</a>	
Masterclass teacher: Fiona Kelly, ICT Co-ordinator, Stenhousemuir Primary School, Rae Street, Stenhousemuir, Larbert, Falkirk FK5 4QP. Tel: 01324 503440. E-mail: <a href="mailto:fiona.kelly@falkirk.gov.uk">fiona.kelly@falkirk.gov.uk</a>	
<p>Fiona Kelly reported that, “Phil Stanley from eInstruction visited my school and after a short introductory lesson I then went home and prepared a few lessons. It is extremely user friendly. It is easy to store as it comes in a small bag. I have allocated pupils to help distribute the controls. The pupils have enjoyed using the system. They are totally focused and on task. This was especially useful in a rather challenging maths class. The remote controls are easy for the pupils to use. There are no games included but pupils enjoy watching for the questions appearing on screen and the boys particularly are enjoying watching to see who has answered and when they answer. It is giving them a small amount of competition which is helping to keep them focused. I used it for science and environmental studies assessment using the system, as I have quite a few pupils who struggle to write. Making up questions for the topic and adding pictures was easy and took little time. There was no difficulty with the receiver picking up every child’s response as a chart along the bottom of the screen recorded when each child had responded. It had a timer facility on the software to encourage quick responses. The “random pick a student” facility was enjoyed by pupils and was useful on occasion for the teacher. RF handset with more buttons caused some confusion to even P7 pupils over the simplicity of the IR handset with fewer choices. I don't really want to hand the system back and I know my class don't!”</p>	

## Appendix 2 – Features Comparison Chart

	ACTIVote	OptiVote (IR)	OptiVote (RF)	GeneeUs
Purchase cost for 33 pupil and 1 teacher handset with full kit	£2075 (no teacher remote required)	£1645 (no teacher remote required)	£2470 (no teacher remote required)	£1945
Can convert existing Powerpoint presentations?	Yes - ad hoc questions also can be created on top of any program	Yes – existing presentation stays intact with all links, transitions, and animations	Yes – existing presentation stays intact with all links, transitions, and animations	Yes – imported as a single object with any animations becoming still graphics
Infra red (IR) or Radio Frequency (RF)	RF	IR	RF	RF
Range of questions available on handset	6 buttons A-F, true/false, yes/no, strength of opinion, voting templates	8-button handset has multiple choice questions	15-button handset has an LCD screen which shows sequence answers, numeric, ordering and picking from list	True/False, numeric, multiple choice, multiple mark, A-F
Battery type and replacement costs	AAA (68 for £25)	AAA (68 for £25)	AA (68 for £25)	AA (68 for £25)
Battery life	2 years	2 years	2 years	2 years
Feedback/display for pupils on handset?	Feedback that answer has been transmitted.	Feedback that answer has been transmitted.	Feedback that answer has been transmitted.	Yes – LCD screen
Handset allows input of text	No	No	No	Yes - Text ranging from A-F
"Help Me" feature on handsets?	No	No	No	Yes
Communication Range	25m	30m	500m	500m
Number of questions included in set purchase	6500 across primary and secondary	2000 with search facility	2000 with search facility	16 banks of subject based questions included
Availability of additional banks of questions from website	Range of subject/age flipcharts free on website as well as User Forum	At cost	At cost	User can supply questions to GeneeWorld who will convert to system free of charge
Warranty	1 year	Lifetime	2 years	2 years on handsets and receivers, free software updates for life
Software licence and installation	1 presentation licence and 5 preparation licences. Works as part of ACTIVstudioMV integrated teaching tools package included	System licence for installation anywhere in school or at home. Questions can be published on the web. Software can sit on network for multiple users to access at same time	System licence for installation anywhere in school or at home. Questions can be published on the web. Software can sit on network for multiple users to access at same time	Site licence – software needs to be installed on each desktop computer

	Qwizdom Q3 (IR)	Qwizdom Q4 (RF)	Qwizdom Q5 (RF)
Purchase cost for 33 pupil and 1 teacher handset with full kit	£1645	£2149	£2599
Can convert existing Powerpoint presentations?	Yes	Yes	Yes
Infra red (IR) or Radio Frequency (RF)	2-way IR	RF	RF
Range of questions available on handset	True/False; Yes/No; Multiple choice; Numeric (decimals/fractions/negative numbers); Multiple mark (more than 1 correct answer); sequence; Rating scale; Spontaneous/Verbal question; Paper based test facility	True/False; Yes/No; Multiple choice; Numeric (decimals/fractions/negative numbers); Multiple mark (more than 1 correct answer); sequence; Rating scale; Spontaneous/Verbal question; Paper based test facility	True/False; Yes/No; Multiple choice; Numeric (decimals/fractions/negative numbers); Multiple mark (more than 1 correct answer); sequence; Rating scale; Spontaneous/Verbal question; Paper based test facility; fill in the blank; short answer specific (text based)
Battery type and replacement costs	AA (68 batteries for £25)	AA (68 batteries for £25)	Rechargeable (includes recharging unit)
Battery life	Over 6 months with everyday use	4 months minimum	1-2 weeks between charges, 8 hours charging time
Feedback/display for pupils on handset?	Yes (Flashing Right/Wrong display which can be optionally controlled from software)	Yes (Right/wrong feedback on 8-character LCD display; question format presented on screen; pupil sees response before sending; question number also displayed on handset)	Yes (large 3-line screen display with Right/wrong feedback on LCD display; question format presented on screen; pupil sees response before sending; question number also displayed on handset)
Handset allows input of text	No	No	Yes
"Help Me" feature on handsets?	Yes	Yes	Yes
Communication Range	20-25 metres	300 metres	300 metres
Number of questions included in set purchase	Over 1000	Over 1000	Over 1000
Availability of additional banks of questions from website	Some free at <a href="http://www.qwizdom.co.uk">www.qwizdom.co.uk</a> – additional resources available at cost.	Some free at <a href="http://www.qwizdom.co.uk">www.qwizdom.co.uk</a> – additional resources available at cost.	Some free at <a href="http://www.qwizdom.co.uk">www.qwizdom.co.uk</a> – additional resources available at cost.
Warranty	3 years (includes free software update for 2 years)	2 years (includes free software update for 2 years)	2 years (includes free software update for 2 years)
Software licence and installation	Site licence - software needs to be installed locally on each computer, but all created materials can be installed on the network so that it can be shared and accessed anywhere.	Site licence - software needs to be installed locally on each computer, but all created materials can be installed on the network so that it can be shared and accessed anywhere.	Site licence - software needs to be installed locally on each computer, but all created materials can be installed on the network so that it can be shared and accessed anywhere.

	Educlick	EzClickPro	Turning Point (IR)	Turning Point (RF)
Purchase cost for 33 pupil and 1 teacher handset withy full kit	£1499	£1999	£1475 (no teacher handset required)	£1785 (no teacher handset required)
Can convert existing Powerpoint presentations?	Can run alongside	Yes	Yes – software is designed as Powerpoint plug-in so requires no conversion	Yes – software is designed as Powerpoint plug-in so requires no conversion
Infra red (IR) or Radio Frequency (RF)	IR	IR and RF	IR	RF
Range of questions available on handset	Numeric 1-9, Bell, 5 formats of questions	Numeric, Bell, 5 formats of questions	Multiple choice (keys 1-10 / A-J)	Multiple choice (keys 1-10 / A-J)
Battery type and replacement costs	CR2032 cost £0.25 each	IR Batteries CR2032 cost £0.25. RF require AA batteries	CR2032 cost around 45p each	CR2032 cost around 45p each
Battery life	Depends on usage	Depends on usage	12 months (units are only temporarily on when a button is pressed)	12 months (units are only temporarily on when a button is pressed)
Feedback/display for pupils on handset?	None	Future development	No	Yes (successful response transmission confirmation)
Handset allows input of text	No	Future development	No	No
“Help Me” feature on handsets?	Yes	Yes	Yes	Yes
Communication Range	100m dependent on room layout	100-300m dependent on room layout	35m	60m
Number of questions included in set purchase	1500	6000	1500	1500
Availability of additional banks of questions from website	15000 available at cost as well as free sharing website	15000 available at cost as well as free sharing website	3000 available free from website	3000 available free from website
Warranty	3 years	3 years	18 month warranty including accidental damage plus free software upgrades for life of kit	18 month warranty including accidental damage plus free software upgrades for life of kit
Software licence and installation	Site licence - software needs to be installed locally on each computer, but all created materials can be installed on the network so that it can be shared and accessed anywhere.	Site licence - software needs to be installed locally on each computer, but all created materials can be installed on the network so that it can be shared and accessed anywhere.	Site licence – software can be installed on any computer, including home computers for both pupils and teachers. Uses PowerPoint files so can be stored anywhere the teacher has access on a network.	Site licence – software can be installed on any computer, including home computers for both pupils and teachers. Uses PowerPoint files so can be stored anywhere the teacher has access on a network.