

Bath Spa University School of Education

Application for Research Centre Funding – Centre for Educational Innovation and Technology

Title of proposed activity:

Pilot project to investigate the use of hand-held gaming devices to support maths-phobic PGCE trainees, with a view to bidding to TDA for scaled-up project.

A summary of the proposed activity

1. Make a bid to Training and Development Agency (TDA) ICT-funding stream for a project to investigate the use of hand-held gaming devices to support trainee teachers' mental mathematics development and confidence, based upon a pilot study as follows:
2. Identify a group of PGCE Primary and Early Years trainees who have failed the TDA mathematics skills test, or have low scores on the Bath Spa University mathematics audit. Interview this group concerning their mathematical confidence.
3. Purchase 12 Nintendo DS-lite hand-held gaming devices, together with 'Dr Kawashima's Brain Training' game for use with the above 'maths-phobic' group of trainees.
4. Trainees play designated mathematical games once a day in their own time on the package above over a period of one month, monitoring scores over this period. Trainees maintain log of the process, recording their feelings about mental mathematics as they develop their skills through the game.
5. Interview the group after the month's use, monitoring their scores on University and TDA skills tests and their experiences of teaching mathematics during their final school experiences.

A list of the staff involved in the proposed activity and their roles

Susan Haywood, Head of Partnership, School of Education. Interviewing five trainees before and after gaming experience. Monitoring data from these trainees during the gaming period. Leading on writing research report, feeding into TDA funding bid.

Graham Downes, Senior in Education, School of Education. Interviewing five trainees before and after gaming experience. Monitoring data from these trainees during the gaming period. Analysing quantitative and qualitative data from pilot project and assisting with writing funding bid to TDA.

A detailed rationale for the proposed activity

The TDA regularly funds the development of ICT tools in Initial Teacher Education (ITE) and the School of Education at BSU has been successful in securing such funding in the past (e.g. £25K in 2007-8). We have also bid (unsuccessfully) against a tender to evaluate TDA funding of ICT over the period 2005-7. The criteria applied to this evaluation contract were based on previous research track record, which is why we need to demonstrate proof of concept for the proposed project by running a small scale pilot before bidding for significant funding in the future.

There is significant evidence of the link between trainee teachers' subject knowledge and confidence in mathematics and their effectiveness in teaching mathematics in the classroom. This is recognised by TDA and reflected in national Standards (TDA 2007). Colleagues engaged in tutoring the mathematics element of the PGCE Primary and Early Years programme in the School of Education are currently working on a project to investigate trainees' attitudes towards their own mathematical competence (Witt and Mansergh 2008), and the proposed project would intend to build upon this.

There is evidence that the ludic elements of gaming devices are strongly motivating to pupils' learning in mathematics and other subject areas (Robertson, 2006). The cited project documented the positive impact of the use of Nintendo DS-lite devices fitted with 'Dr Kawashima's Brain Training' game upon pupils' performance in mental mathematics. The proposed project seeks to apply these findings to an adult trainee teacher population.

A breakdown of resources required and their cost

Item	Cost
Nintendo DS-lite devices fitted with 'Dr Kawashima's Brain Training' game x 12	£1100
Transcription of interview data	£150
Administrative support to complete bids x 2 days x 3 = 6 days @£150	£900
Total	£2150

Statement of expected outcomes from the activity

The expected outcomes from this activity are as follows:

1. A significant project proposal to the TDA for a scaled-up project based on the pilot completed with the above funding.
2. Conference presentations to ITTE annual conference (possibly to be hosted at Bath Spa University in 2009)
3. Research report on the pilot project providing available evidence of impact upon participants
4. Dissemination through South West Grid for Learning and Wiltshire/B&NES/South Gloucestershire Local Authority CPD sessions.

A statement on how the activity will promote future activities of the centre(s) and enhance the reputation of research at the university.

The proposed activity will promote the future activities of the centre in the following ways:

1. It will strengthen links between research in CEIT and research occurring elsewhere in the School of Education (e.g. Witts and Mansergh), and with research going on in schools through Local Authorities.
2. It will build research capacity within CEIT, demonstrating a track record to outside agencies enabling larger bids to be put forward in future.
3. It will potentially strengthen links between CEIT and the Information Technology in Teacher Education (ITTE) network, cited by TDA as innovators in good practice.

A statement of support from the head of the centre indicating how the bid will contribute to the aims and aspirations of the centre.

The leadership team is strongly in favour of this initiative. It will allow us to develop the confidence and specialist expertise required to submit successful bids for funding and enable us to transform our existing partnerships and research ideas into externally funded projects involving both academics within the university and professionals working in the field with vulnerable learners across a broad range of contexts.

A statement of support from the relevant Head of School

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