



Association for Educational  
Communications and Technology

# iTECH DIGEST

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## Improving Learning Achievements, Motivations and Problem-Solving Skills Through a Peer Assessment-Based Game Development Approach

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*(Editor's note: See full text for reference citations.)*

The advancement and popularity of computer and multimedia technologies offer opportunities for educators to design and conduct more meaningful learning activities in technology-enhanced learning settings. Among various computer-supported learning approaches, digital game-based learning has been recognized as a promising approach for motivating students to learn. On the other

hand, researchers have indicated that merely accessing learning content via playing games might not be sufficient to engage students in higher order thinking, such as analysis, evaluation, organization and creation. Therefore, they have suggested the “learning by doing” approach that engages students in developing educational multimedia software or educational games.... It is expected that the game development strategy can provide useful mechanisms for students to interpret the learning content and help them organize what they have learned from the textbooks and daily life experiences when dealing with relevant problems. In the meantime, it is expected that

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This article is excerpted from *ETR&D* 61, published online first, November 6, 2013. Read the full text by logging in at the AECT website, <http://aect.org/>, and clicking on Publications.

### CALL FOR PAPERS

Check out calls for papers, proposals, and participants. Get involved.

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### JOURNALS

Members have instant online access to a wide variety of journals.

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### ISSUES IN FOCUS

The topic this month is OER, or open educational resources.

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*Plan Ahead*

## 2014 AECT International Convention

November 4-8  
Jacksonville, Florida

*“Learning, Design  
and Technology”*

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## Calls for Papers, Proposals, and Participants

**Call for Proposals.** Need funding to develop a research proposal? Consider applying for a Collaborative Research Grant. The purpose of the grant is to provide monetary support to enable association members to develop research project proposals that include active collaboration among researchers, research institutions, and AECT. Information at: <http://aect.org/>.

**Call for Papers.** The AECT flagship practitioner journal, *TechTrends*, is seeking manuscript submissions, including from international and newer authors. For more information, see the Instructions for Authors online by clicking on Publications on the AECT website: <http://aect.org/>.

AECT's premier research journal, *Educational Technology Research and Development* welcomes submissions on topics of interest from new and experienced researchers.

**Call to Converse.** Participate in online discussions through the AECT website in ITForum. Join in and read what others are saying and contribute your own thoughts. ITForum is reached from the AECT homepage: <http://aect.org/>.

**Call for Manuscripts.** AECT, in collaboration with Springer, has announced a new series of books and monographs under the title, “Educational Communications and Technology: Issues and Innovations.”

The purpose of the series is to extend AECT's ongoing publications with Springer and to offer the Springer Briefs innovative format to AECT authors and contributors. For more information potential authors are asked to see: <http://aect.org/>.

### *Deadline: February 15*

**Call for Proposals.** The 2014 AECT International Convention, which will be held in Jacksonville, Florida, November 4-8, will feature presentations and workshops on a wide range of topics. The proposal period is now open and will close on February 15.

Proposals are reviewed by divisions and affiliates. Check with the leaders of those groups to find out about specific interests and the review process. Proposals must be submitted electronically. Complete directions can be found at:

<http://www.aect.org/events/call>.

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See page 5 for additional opportunities  
to publish and to participate in professional dialogue.



## Ty Gwyn: Documenting the Design of a Special School in Wales

Julie E.N. Irish  
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Ty Gwyn, Welsh for “white house,” was an existing school located in an affluent suburb of Cardiff, the capital city of Wales, in prime real estate. It was owned and operated by Cardiff County Council, and more specifically, the Schools Department—the equivalent of the school district in United States terminology. The school had been designed in the 1960s as a teachers’ education center, later becoming a school for students with disabilities. Over the years, larger numbers of students came to the school with increasingly acute physical and learning disabilities. By the 21st century the building was clearly not fit for its purpose in size or availability of modern facilities.

This case study explains the design process of a new special school from the interior design perspective. Reflecting on the design process described above, some key points emerge. [Editor’s note: This is a partial list.]

- Constant dialogue between the interior designer and the client ensured that the client was able to explain their needs and the designer knew how to meet those needs.
- Listening to what the client required was important, but so was observation. In observing, the various stakeholders were able to see something that was so obvious to the client that they failed to mention it.

- Gathering information from various sources in the school provided different viewpoints. Catering staff or janitors offered a different design input than teachers.
- Site visits to observe similar installations was useful, not only to emulate successful designs but also to learn from others’ mistakes.
- Flexibility and a willingness to adapt were also key components, particularly when mistakes arose on site.
- A reasonable budget to achieve the flagship design to which the client aspired was important.

To consider the final design from the end users’ viewpoint, did the design process facilitate the clients’ vision of a flagship special school, and did it change lives? The Head Teacher suggests that it did, saying “there are so many smiling faces and so many opportunities we could only have dreamt about in the last school.”

Editor’s note: This very brief excerpt cannot do justice to the full scope of this illustrated case study. Readers are encouraged to read the full article. Excerpted from *International Journal of Designs for Learning* 4 (2013): 92-101. Read the full text by logging in at <http://aect.org/> and clicking on Publications. See the full text for reference citations.

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#### **AECT Mission**

The mission of the Association for Educational Communications and Technology is to provide international leadership by promoting scholarship and best practices in the creation, use, and management of technologies for effective teaching and learning in a wide range of settings.

#### **Goals:**

- Define the disciplines and professional activities that comprise the field of educational communications and technology.
- Serve and represent professionals in the field and support professional growth.
- Advance scholarship and practice that contribute to and enlarge the knowledge base of the field.
- Promote policies that ensure the humane and ethical use of educational communications and technology at all levels, from the personal through the international.

### **Improving Learning...continued from page 1**

the peer assessment approach can help them make reflections with in-depth thinking. To evaluate the performance of the proposed learning approach, an experiment has been conducted to investigate the following research questions:

- (1) Can the peer assessment-based game development approach improve the students' learning achievement?
- (2) Can the peer assessment-based game development approach promote the students' science learning motivation?
- (3) Can the peer assessment-based game development approach improve the students' problem-solving skills?
- (4) What are the students' perceptions of the peer assessment-based game development approach in terms of ease of use, usefulness, and satisfaction?

From the experimental results, it was found that the proposed approach improved the students' learning achievements, motivations and problem-solving skills in comparison with the conventional game development approach. Moreover, most of the students highly recognized that the peer assessment-based game development was helpful to them in terms of improving their "in-depth thinking," "creativity" and "learning motivation."

Regarding learning achievements, several previous studies that conducted peer assessment activities in in-class learning or web-based learning, have reported the potential of peer assessment in helping students make reflections, which could further help them find out their learning problems and the possible ways of dealing with the problems. The students' feedback to the open-ended questions also shows that the proposed approach has encouraged the students to think deeply about the game development task and the learning content from different aspects when reviewing peers' work.... From the experimental results and the students' feedback to the open-ended questions, it is apparent that the students were happy to have their games played and reviewed by their peers. On the other hand, they also liked to play and review the games developed by others. That is, peer assessment is a promising strategy for engaging students in enjoyable and effective game development tasks.

*Editor's note:* As is the case with any excerpt, this one omits much that will be of interest. Readers therefore are urged to access the full text of this thoughtful study.

## New Opportunities and Member Benefits

**VIDEO** – “We Are AECT” is an opportunity to share how members define AECT. What’s your “elevator speech” description of AECT? Think of this project as making your “elevator video,” 3-5 minutes (or shorter, 15-60 seconds), something you might share on your smart-phone with a new colleague who asks, “What’s AECT all about?”



**OPINION** – AECT is seeking position papers that present thoughtful opinions about issues germane to the mission and vision of AECT. Position papers developed under this project will be peer reviewed and will encourage discussion of important, emerging topics and, when appropriate, can be further developed for publication.

**ANTHOLOGY** – *The Culture of Competition is HARMING Our Schools* is a planned anthology. The editors are seeking papers based on research, practice, informed opinion, or a combination of these bases. This is an open call to participate in this provocative volume.



**ANNOUNCEMENT** – The new Member Book Announcement Program offers AECT members the opportunity to announce recently published academic or scholarly books free of charge in the pages of *TechTrends*. This new member benefit strengthens AECT’s commitment to foster networking and professional dialogue.

*For further information about any of these benefits and opportunities, email your questions to: [aect@aect.org](mailto:aect@aect.org).*

## Member Access Publications

### *Educational Technology Research and Development (ETR&D)*

Bimonthly  
ISSN: 1042-1629 (print)  
ISSN: 1556-6501 (electronic)  
Journal no. 11423  
Springer US

### *TechTrends*

Bimonthly  
ISSN: 8756-3894 (print)  
ISSN: 1559-7075 (electronic)  
Journal no. 11528  
Springer US

### *Instructional Science*

An International Journal of the Learning Sciences  
Bimonthly  
ISSN: 0020-4277 (print)  
ISSN: 1573-1952 (electronic)  
Journal no. 11251  
Springer Netherlands

### *International Journal of Designs for Learning*

Quarterly  
ISSN: 2159-449X  
(electronic)  
AECT

### *Journal of Applied Instructional Design*

Quarterly  
ISSN: 2160-5289  
(electronic)  
AECT

Visit the AECT website <http://aect.org/>, log in, and click on Publications for instant access.

*Issues in Focus*

## OER: Promising but Problematic

Open educational resources (OER), according to the Hewlett Foundation, which offers one of the broadest definitions, are “teaching, learning, and research resources that reside in the public domain or have been released under an intellectual property license that permits their free use and repurposing by others. Open educational resources include full courses, course materials, modules, textbooks, streaming videos, tests, software, and any other tools, materials, or techniques used to support access to knowledge” (<http://www.hewlett.org>).

This definition parallels one from UNESCO, which first adopted the term at its 2002 Forum on the Impact of Open Courseware for Higher Education.

OER as a concept has generated controversy since the start of the global movement more than a decade ago. While there are philosophical arguments that range from questions about the movement’s altruistic motives to accusations of intellectual imperialism, the concerns at issue from a practical standpoint tend to center on matters of OER quality, intellectual property rights, and sustainability.

Both advocates and critics of OER worry about the vetting, or lack of vetting, of OER content. Much open access content is user generated, often without benefit of peer review or even competent editing. Consequently, it often falls to the end-users of OER to assess on their own the quality of resources they want to use. This can place undue burdens on educators and students.

In a 2007 report to the Hewlett Foundation, the writers suggested that one promising approach to addressing this issue “is to replace traditional prepublication review...with a post-publication review based on a more open community of third-party reviewers experienced in using the materials.”\*

Actualization of this type of vetting, however, would superimpose a structure that would be difficult to manage and could render OER less open.

Intellectual property rights are another area of concern. OER content is intended to be openly shared and so copyright, in theory, should not be at issue. But it is, and not merely because some content under copyright can easily be shared by accident or malicious intent. OER often is advocated to assist in leveling the education playing field for less developed nations. It makes sense, therefore, that one of the clearest resources on this concern would be an *OER Copyright and Licensing Toolkit* from OER Africa (<http://www.oerafrica.org>).

Creative Commons (<http://creativecommons.org>) is the leading nonprofit organization that enables the sharing and use of creativity and knowledge through free legal tools. Such licensing works alongside copyright.

Finally, there is the question of who pays. Is “free” sustainable?

The development of intellectual content is not without cost. If published content does not generate revenue, then funding for OER must come from other sources, such as grants. Such funding can be difficult to obtain and funding bodies often look at whether content development and dissemination can be sustained after the grant runs out. The old saw that there are no free rides rings true for OER. Consequently, new business models are needed.

Ultimately, as the title above suggests, OER is promising but remains as yet problematic.

\*Atkins, D.E.; J.S. Brown; and A.L. Hammond. *A Review of the Open Education Resources (OER) Movement: Achievements, Challenges, and New Opportunities*. Hewlett Foundation, 2007. <http://www.hewlett.org>



*OER global logo (English) adopted by UNESCO.*