

Tracking Learning Experiences Using the Experience API

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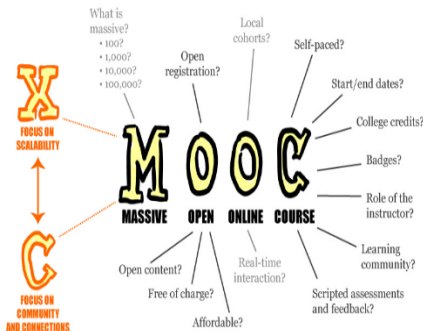

School of Science & Technology

ELFA 2015, 17 – 19 June 2015

Agenda

1. Short History of Technology-Based Training (TBT)
2. Shortcomings of present LMS-centric & content-centric e-learning
3. Many different ways of learning (informal learning, social media, collaboration, smartphones, etc), so how to capture learning?
4. What led to the development of the xAPI?
5. What is the xAPI?
6. Why is there the need to know the xAPI?
7. Early adopters of the xAPI
8. Demonstration walkthrough of LMS to LRS communication
9. Video demonstration of an LRS System
10. xAPI prototypes
11. Summary

1. Short History of Technology-Based Training (TBT)

 <p>Instructor-led Training - ILT</p>	 <p>Mainframe-Based CBT 19603 – 1970s</p>	 <p>Satellite-based Distance Learning 1980s - 1990s</p>	 <p>PC-Based CD-ROM CBT 1980s - 1990s</p>
<p>LMS Beginnings - <u>AICC</u> Standards – <u>1988</u> onwards. 1997 – Formation of e-Learning consortia like <u>IMS Global</u> and the US DoD's <u>ADL</u>.</p>		<p>IMS Common Cartridge Learning Tool Interoperability IMS Content Package IMS QTI IEEE Metadata Spec SCORM 1.2 Version 1.0 SCORM 2004 1st Edition SCORM 2004 2nd Edition SCORM 2004 3rd Edition SCORM 2004 4th Edition</p>	 <p>1st Generation WBT, Virtual Classroom, E-learning – 1998 – now.</p>
<p>Integrated Blended Learning - Web, Video, Audio, Simulations, ILT, & more ... 2002 ...</p>	 <p>Mobile Learning</p>		

2. Shortcomings of the present LMS-centric & content-centric e-learning - 1

LMS-centric & content-centric e-learning	Implication
MCQs -> single-answer assessments.	Don't reflect real-world situations
Learning	Very linear
Content materials on the LMS	Predominantly text-based
Teacher = knowledge dispenser	Doesn't encourage self-directed & independent learning
Contents from other devices, e.g smartphones, tablets	Can't consolidate with those on the LMS

1. Shortcomings of the present LMS-centric & content-centric e-learning - 2

LMS-centric & content-centric e-learning	Implication
LMS must connect to the Internet all the time in order for learning interactions to take place.	Smartphones, tablets are not always connected to the Internet.
Difficult to ascertain how much learning the participant has done if he or she uses multiple devices to access information.	Learning assessment becomes unreliable.

Main Problem with LMS Model

Very little online learning happens on the LMS!

LMS is used only as a repository of learning materials.

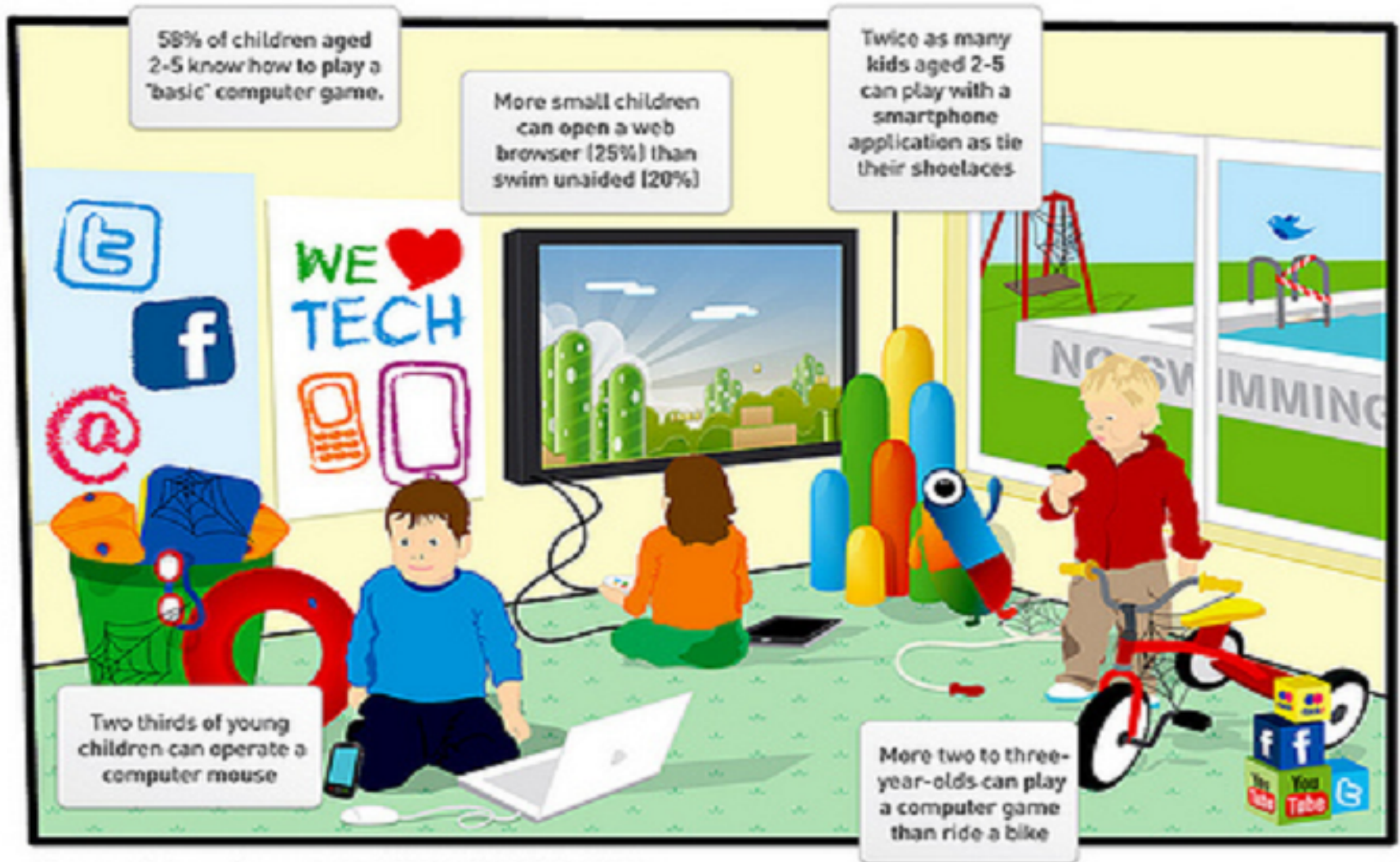
Nowadays, many people learn many things using at least some of the following applications. But LMS cannot handle such learning.



Codecademy



3. Many different ways of learning (informal learning, social media, collaboration, smartphones, etc), so how to capture learning?



Reference: <http://www.pcmag.com/article2/0,2817,2376056,00.asp>

What about mobile apps and augmented reality?...



I want to track data in a simulation...



Learning is social. How do I integrate all of this social media?



I want to train multiple users in a virtual world...



4. What led to the development of the xAPI?

- SCORM was first released in 2000 but it is now 15 years old!
- People communicating and collaborating with mobile devices.
- Mobile devices – expensive to maintain 24/7 Internet connectivity.
- People are also learning differently.:
 - Texting
 - Desktop – access LMS to do quizzes
 - Use iPad to view webinars
 - Android phone to check interactive study guides
- Rustici contracted to work on a new proposal for the new generation of e-learning specification.
 - Extensive consultation with the e-learning community of practitioners, Rustici developed the Tin Can API in 2013.
 - The ADL renamed it xAPI, for Experience API.

5. What is the xAPI?

- Stands for Experience Application Programming Interface (shortened to xAPI).
- It is also referred to as the Tin Can API.
- It is a set of open specifications to track learning experiences.
- Version 1.0.0 of this specification was released in April 2013.
- It is now at Version 1.0.1 as at 2 October 2013.
- It is still evolving.
- It is commonly said to be the next generation after SCORM.



6. Why is there the need to know the xAPI?

- i. Taking e-learning outside of the web browser
- ii. Handle e-learning in native mobile applications
- iii. More control over learning content
- iv. Better security
- v. Platform transition; e.g. start e-learning on a mobile device, finish it on a computer
- vi. Able to track
 - i. games and simulations
 - ii. real-world performance
 - iii. team-based e-learning
 - iv. learning plans and goals

Learning happens anywhere

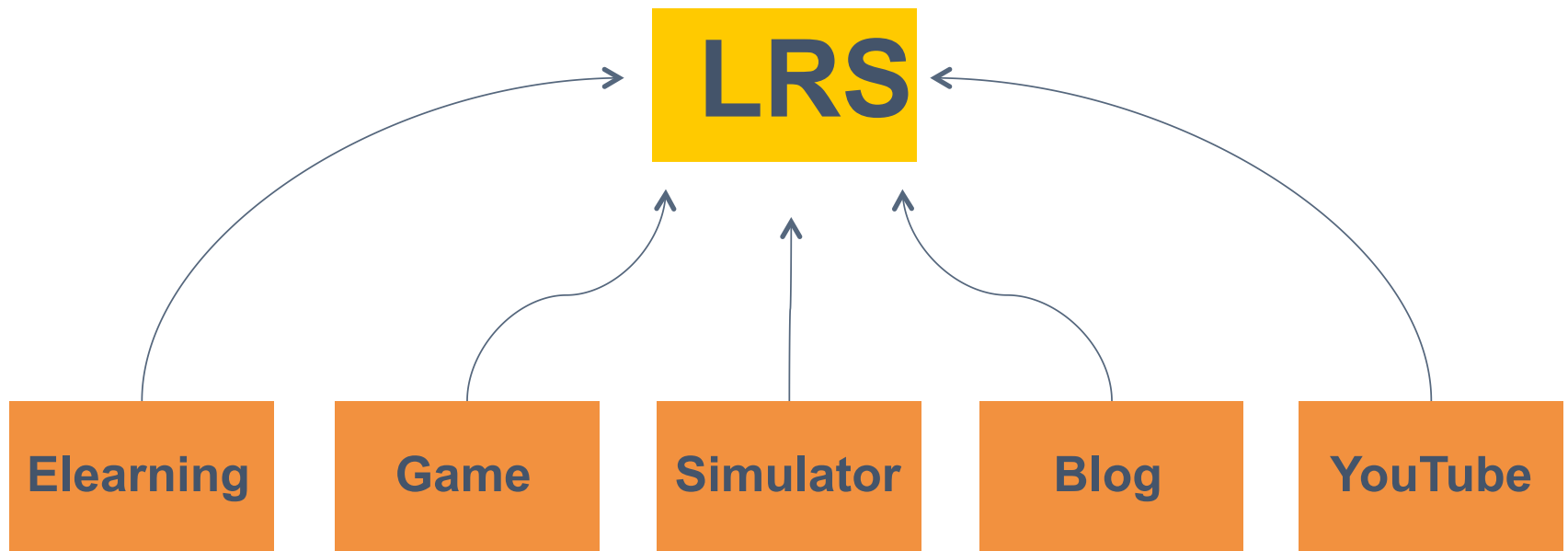


Learning Experiences that Matter



How Tin Can API works

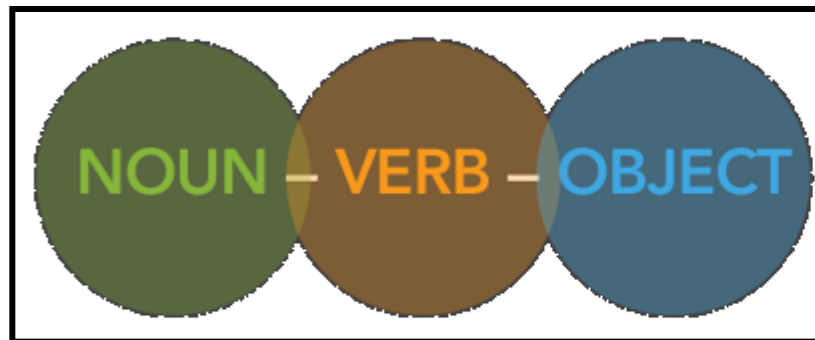
LRS – Learning Record Store



Tin Can Statements - 1



iTunes U



MOBILE APP



Tin Can Statements - 2

Tin Can in Education:

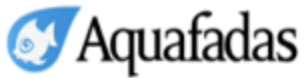
1. “Jenny **uploaded** ‘Guide to Bb Collaborate’ to **YouTube**”.
2. “Jenny **watched** ‘Statistics for Beginners’ on **Khan Academy**”.
3. “Jenny **subscribed** to ‘ECR podcast’ on iTunesU”.
4. “Jenny **posted** ‘English Competency Assessment’ on Jenny’s Blog”.
5. “Jenny **attended** 2014 Faculty Learning Day”. Registrant's pass records attendance.
6. “Jenny **uploaded** a photo to the field work database”
7. “Jenny **borrowed** Capstone Project Guidelines from the Tay Eng Soon Library”
8. “Jenny **completed** Topic One in Gerontology App”

7. Early Adopters of the xAPI - 1

Check out the latest at: <http://tincanapi.com/adopters/>

116 companies and organizations have adopted the xAPI (March 2015).

List includes companies dealing with LMSs, authoring tools, etc.

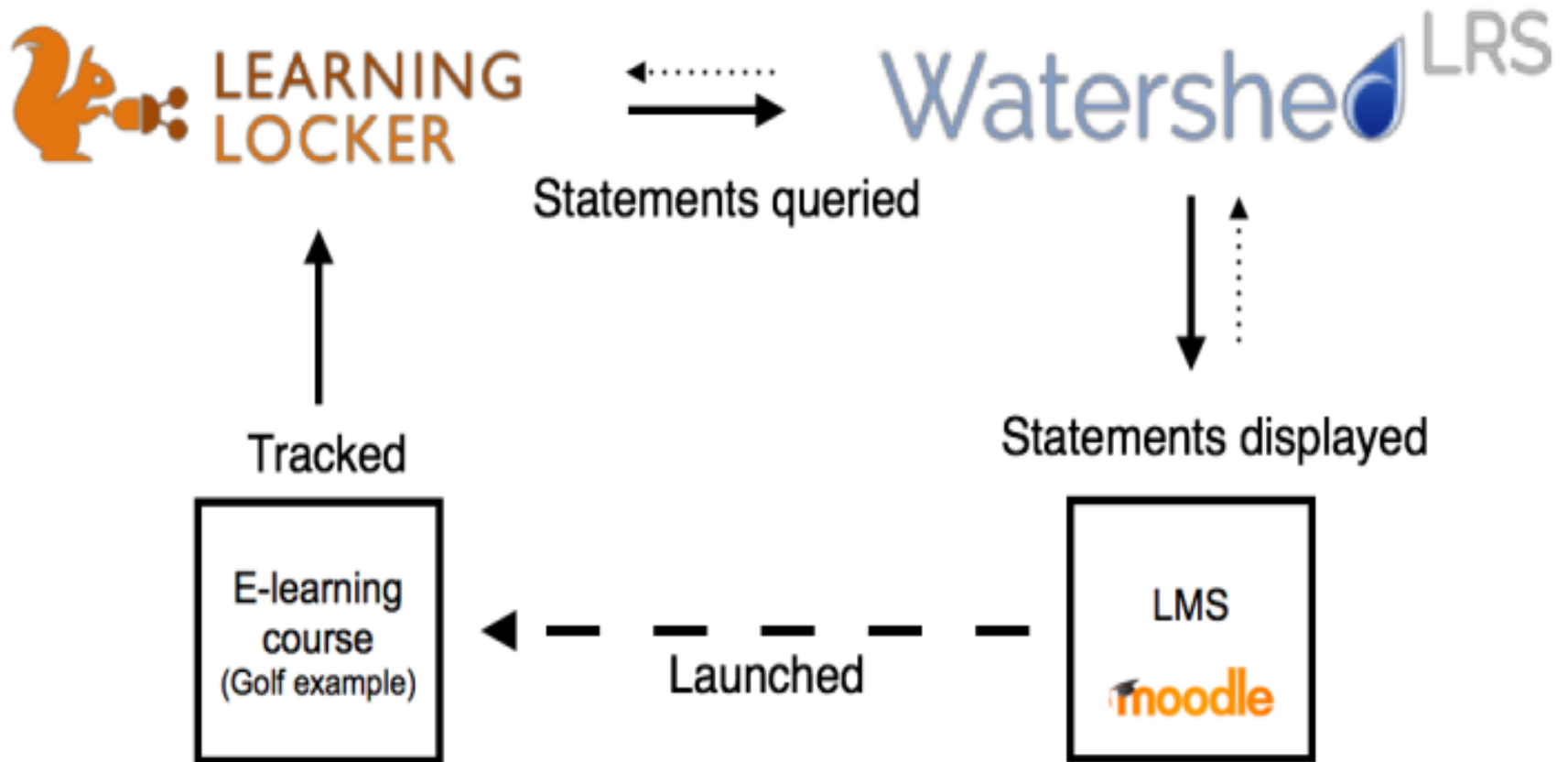


Blackboard



8. Demonstration walkthrough of LMS to LRS communication

- 1



8. Demonstration walkthrough of LMS to LRS communication - 2

► Restrict access

▼ Activity completion

Completion tracking

Show activity as complete when conditions are met 

Require view ☐ Student must view this activity to complete it

Track completion by verb

☒ Verb

Expect completed on

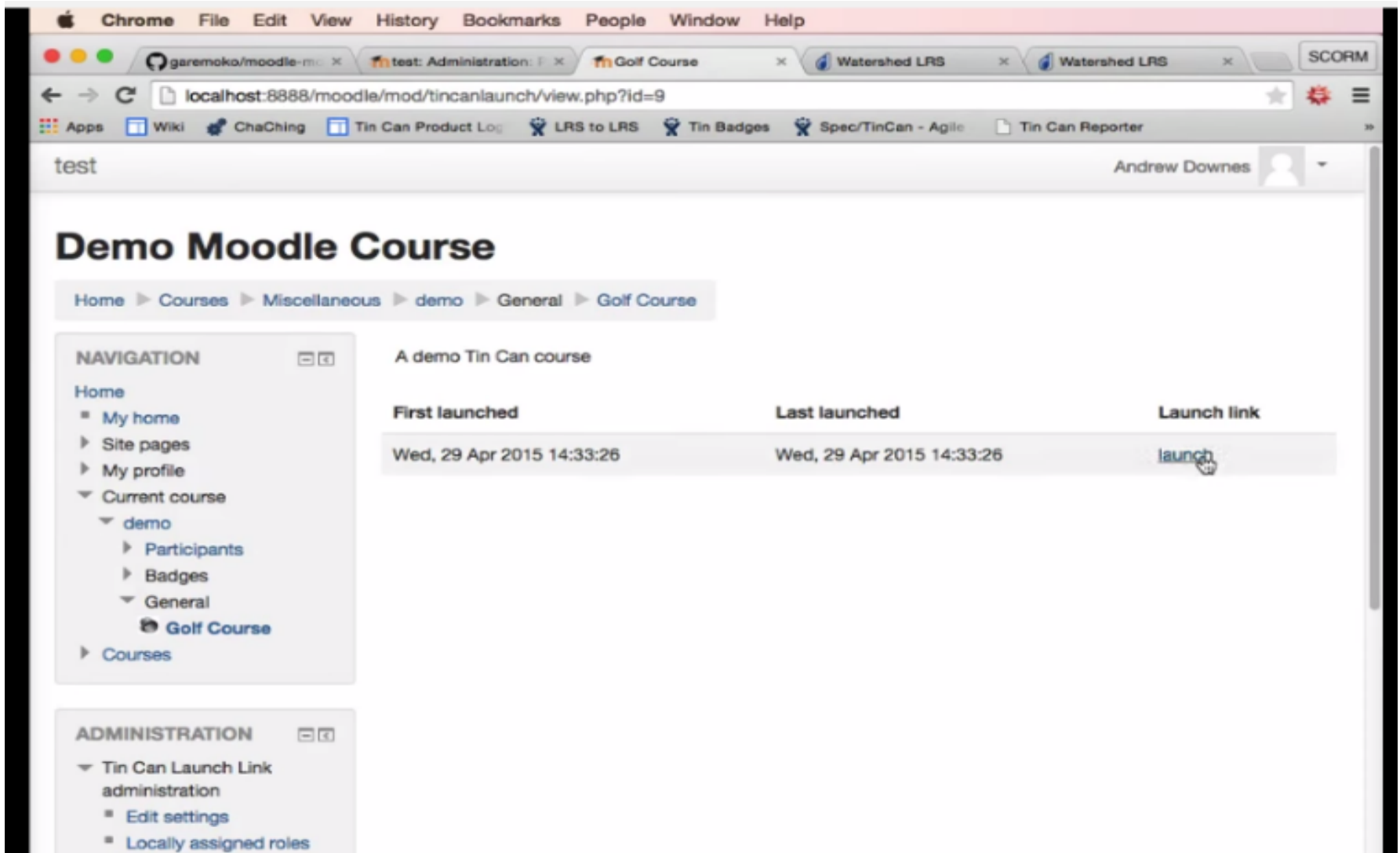
29  April  2015   ☐ Enable

Save and return to course

Save and display

Cancel

8. Demonstration walkthrough of LMS to LRS communication - 3



The screenshot shows a web browser window with the URL `localhost:8888/moodle/mod/tincanlaunch/view.php?id=9`. The page title is "Demo Moodle Course". The user is logged in as "Andrew Downes". The page displays a "demo" Tin Can course with a "launch" link.

NAVIGATION

- Home
 - My home
 - Site pages
 - My profile
 - Current course
 - demo
 - Participants
 - Badges
 - General
 - Golf Course
 - Courses

ADMINISTRATION

- Tin Can Launch Link administration
 - Edit settings
 - Locally assigned roles

A demo Tin Can course

First launched	Last launched	Launch link
Wed, 29 Apr 2015 14:33:26	Wed, 29 Apr 2015 14:33:26	launch

8. Demonstration walkthrough of LMS to LRS communication - 4

localhost:8888/TinCan_Prototypes/GolfExample_TCAP/index.html?endpoint=https%3A%2F%2Fsandbox.watershedlrs.com... ★ 🔥

Apps Wiki ChaChing Tin Can Product Log LRS to LRS Tin Badges Spec/TinCan - Agile Tin Can Reporter

[TinCan Home](#)

☒ True
☐ False

The player with the best score on previous hole tees off:

☒ First
☐ Last
☐ With a putter

Which formula is used to calculate the 'course handicap'?

☐ Course Handicap = Handicap index + number of holes * number of lost balls in last round
☐ Course Handicap = Number of years experience / annual equipment spending
☒ **Course Handicap = Handicap index * Slope Rating / 113**

Golfer A has a course handicap of 6. Golfer B has a course handicap of 10. Golfer A shoots an 81. Golfer B shoots an 84. Golfer B wins the match be how many strokes?

1 (1)

A 'scratch golfer' has a handicap of ____

0 (0)

Golfer A has a course handicap of 3. Golfer B has a course handicap of 28. On the 6th handicap hole, how many strokes will Golfer A have to give Golfer B in match play?

1 (2)

To make friends on the golf course, you should play really slowly.

☐ True
☐ False

Knickers indicate a refined sense of style.

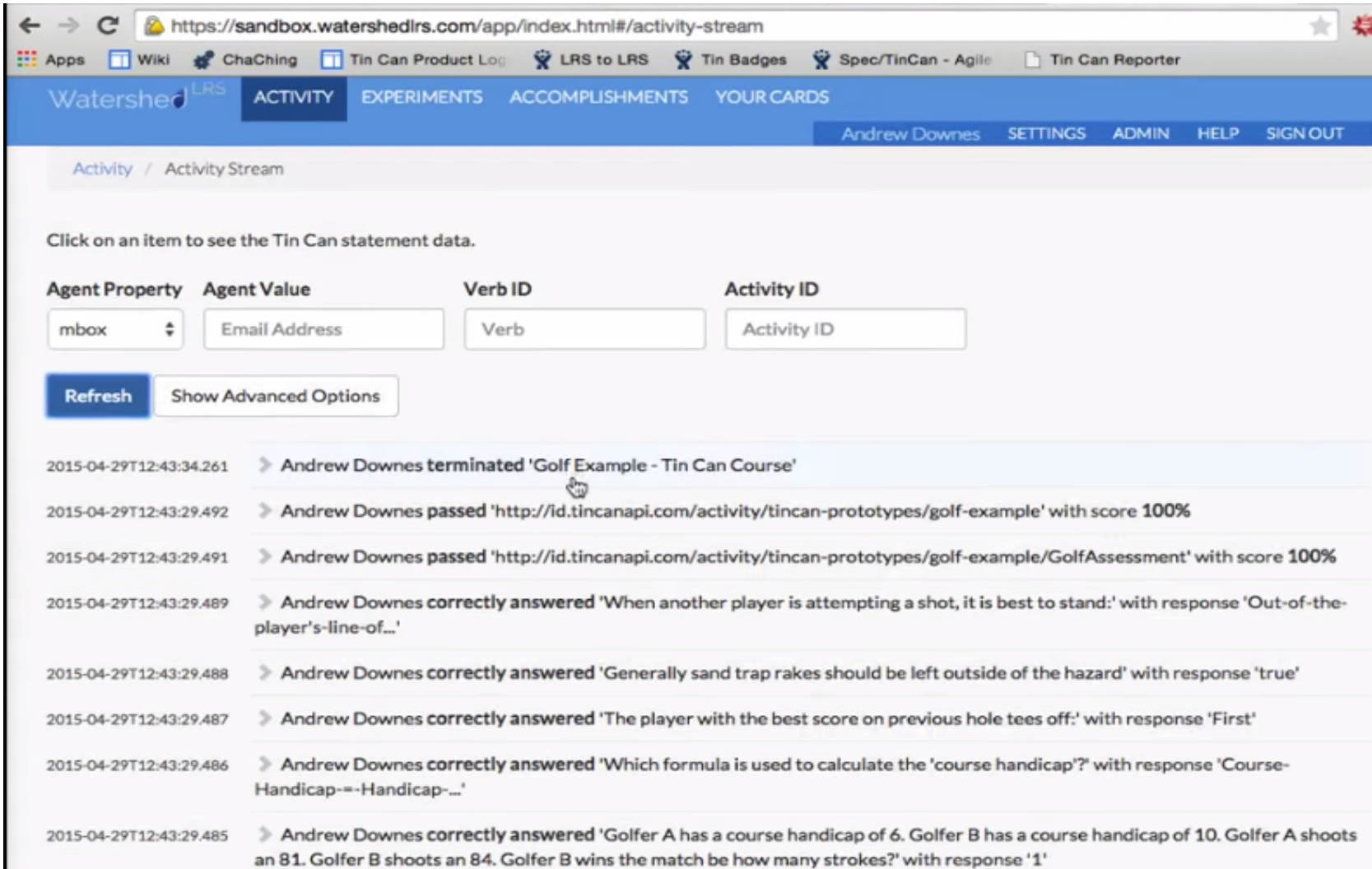
☐ True
☐ False

<- Previous Next -> Save & Exit

8. Demonstration walkthrough of LMS to LRS communication

The screenshot displays a Moodle course interface. At the top, the browser address bar shows 'localhost:8888/moodle/course/view.php?id=2'. The course name 'Demo Moodle Course' is prominently displayed. A breadcrumb trail indicates the path: Home > Courses > Miscellaneous > demo. The left sidebar contains a 'NAVIGATION' section with links to Home, My home, Site pages, My profile, Current course (expanded to show demo, Participants, Badges, General), and Courses. Below this is an 'ADMINISTRATION' section. The main content area features a 'Golf Course' icon and a 'Your progress' indicator with a checkmark. The right sidebar, titled 'TIN CAN LEARNER STREAM', lists several activities, including 'Andrew Downes terminated Golf Example - Tin Can Course' and multiple instances of 'Andrew Downes passed Golf Example - Tin Can Course' and 'Andrew Downes answered'.

8. Demonstration walkthrough of LMS to LRS communication - 4



The screenshot shows a web browser window with the URL <https://sandbox.watershedlrs.com/app/index.html#/activity-stream>. The page title is "Watershed LRS" and the main navigation bar includes "ACTIVITY", "EXPERIMENTS", "ACCOMPLISHMENTS", and "YOUR CARDS". The user "Andrew Downes" is logged in, with links for "SETTINGS", "ADMIN", "HELP", and "SIGN OUT".

The "Activity Stream" section displays a list of activities. The header for the list includes columns for "Agent Property", "Agent Value", "Verb ID", and "Activity ID". Below the header are input fields for "mbox", "Email Address", "Verb", and "Activity ID", along with "Refresh" and "Show Advanced Options" buttons.

The activity stream shows the following entries:

- 2015-04-29T12:43:34.261 > Andrew Downes terminated 'Golf Example - Tin Can Course'
- 2015-04-29T12:43:29.492 > Andrew Downes passed 'http://id.tincanapi.com/activity/tincan-prototypes/golf-example' with score 100%
- 2015-04-29T12:43:29.491 > Andrew Downes passed 'http://id.tincanapi.com/activity/tincan-prototypes/golf-example/GolfAssessment' with score 100%
- 2015-04-29T12:43:29.489 > Andrew Downes correctly answered 'When another player is attempting a shot, it is best to stand:' with response 'Out-of-the-player's-line-of...'
- 2015-04-29T12:43:29.488 > Andrew Downes correctly answered 'Generally sand trap rakes should be left outside of the hazard' with response 'true'
- 2015-04-29T12:43:29.487 > Andrew Downes correctly answered 'The player with the best score on previous hole tees off:' with response 'First'
- 2015-04-29T12:43:29.486 > Andrew Downes correctly answered 'Which formula is used to calculate the 'course handicap?'' with response 'Course-Handicap=-Handicap-...'
- 2015-04-29T12:43:29.485 > Andrew Downes correctly answered 'Golfer A has a course handicap of 6. Golfer B has a course handicap of 10. Golfer A shoots an 81. Golfer B shoots an 84. Golfer B wins the match be how many strokes?' with response '1'

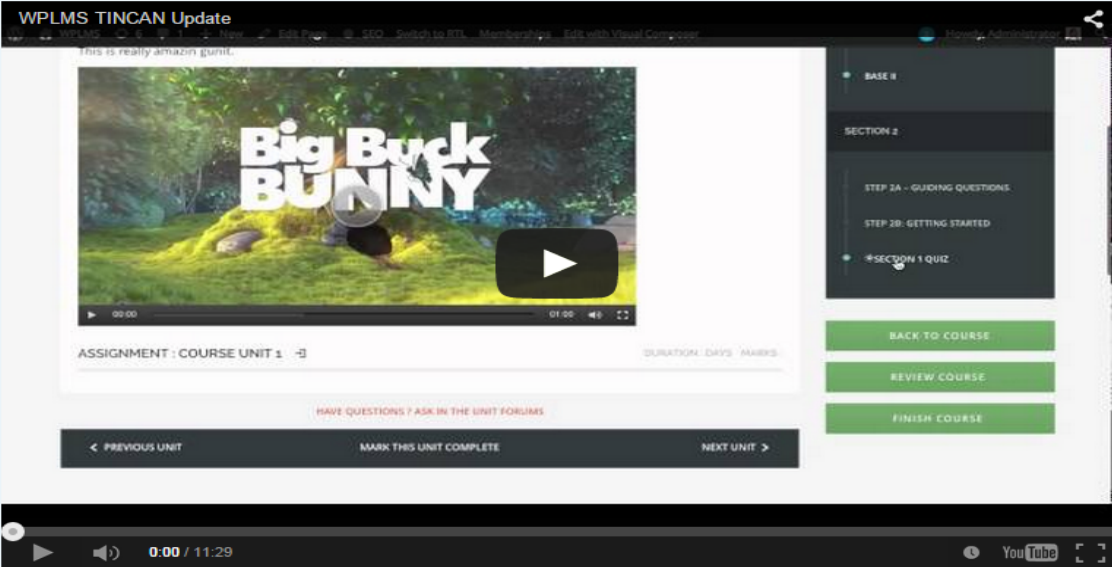
9. Video demonstration of an LRS (Learning Record Store) system

TinCan API Support and Recording Statements from Articulate package
URL:

<http://vibethemes.com/forums/forum/wordpress-html-css/wordpress-themes/wplms/tips-tricks-docs/21719-tip-tincan-api-support-and-recording-statements-from-articulate-package>

TIP : TinCan API Support and Recording Statements from Articulate package
07-15-2014, 11:41 PM

From version 1.7 we've added support for TinCan API. Refer to below video :



WPLMS TINCAN Update

00:00 / 01:00

ASSIGNMENT : COURSE UNIT 1 ->

DURATION: DAYS MARKS:

HAVE QUESTIONS ? ASK IN THE UNIT FORUMS

PREVIOUS UNIT MARK THIS UNIT COMPLETE NEXT UNIT

BACK TO COURSE REVIEW COURSE FINISH COURSE

0:00 / 11:29 YouTube

Important Things to Note :

1. Recording statements in External LRS would increase the response time of actions on site.
2. To record answers to questions , you site must be visible to Search engines (in WP Admin -> Settings -> Reading)
3. The Articulate Package uploaded for recording statements must be "Published for LMS" with TinCan recording enabled.

Last edited by Mr.Vibe; 07-16-2014, 07:00 AM.

10. xAPI Prototypes

- From the ADL:
 - <https://lrs.adlnet.gov/prototypes>
- From Rustici:
 - <http://tincanapi.com/download-prototypes>
- From Learning Locker:
 - <http://learninglocker.net/>
- From IxHive:
 - <https://github.com/Brightcookie/IxHive>
- From Tinman:
 - <https://github.com/claresco/Tinman>

11. Summary

- Stands for Experience Application Programming Interface (shortened to xAPI).
- Also referred to as the Tin Can API.
- A set of open specifications to track learning experiences.
- Version 1.0.0 of this specification was released in April 2013.
- It is now at Version 1.0.1 as at 2 October 2013.
- It is still evolving.
- It is commonly said to be the next generation after SCORM.
- Used to track learning in many different situations and using many different devices

End of Presentation

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