

# External System Interface Guide Using LTI Standard

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# CONTENTS

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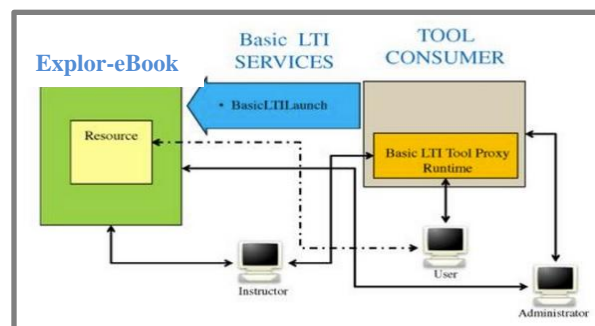
1. Overview	3
2. Use Cases for Basic LTI .....	5
3. Basic LTI Launch Data.....	6
4. Basic LTI Security Model .....	8
5. Appendix A - LTI Standard Vocabularies .....	9
6. Design related with Flow .....	10
7. Integration with Schoology .....	11
8. Integration with Moodle.....	14

# 1. Overview

Explor-eBook LTI specification defines two styles of integration:

- Full LTI entails a formal, negotiated deployment process whereby the Tool Consumer (typically an LMS) and Teacher Created Materials reach an agreement about (1) the run-time services that will be used to support tight integrations between the systems, (2) the security policies that will apply, and (3) the set of destinations within the Tool that can be launched from the Tool Consumer system.
- Basic LTI exposes a single destination in the Explor-eBook system. The procedure for establishing a link to this single destination is simple, but limited. There is no provision for accessing Full Explor-eBook services in the Tool Consumer and only one security policy is supported.

This document describes how Basic LTI destinations are described in Explor-eBook and how they are handled.



**Overview of Basic LTI of Explor-eBook**

Throughout this document, we use specific terminology to describe the two main pieces of software involved in Explor-eBook. What we traditionally think of as the "Learning Management System" (LMS) is referred to as the "Tool Consumer" (TC) as it "consumes" the tool. The Explor-eBook is called the "Tool Provider" (TP) as it "provides" the tool for use in the Tool Consumer.

Basic Explor-eBook LTI uses the OAuth protocol to secure its message interactions between the TC and TP. OAuth requires a key and shared secret to sign messages. The key is transmitted with each message, as well as an OAuth-generated signature based on the key. The TP looks up the secret based on the provided key and re-computes the signature and compares the recomputed signature with the transmitted signature to verify the sender's credentials.

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The TC can make choices as to how it manages credentials (keys and secrets) within its system. Basic LTI has two patterns for the credentials: (1) the TC-wide credential for a particular TP URL which is set by the TC administrator and used for all launches to a particular TP URL, or (3) each Basic LTI link is protected by its own credential. The first pattern allow for a more seamless integration between a TC-instance and TP-instance from an instructor's perspective. The second pattern allows instructors to "mash up" Basic LTI links.

This document uses the term "context" where you might expect to see "course". A context is roughly equivalent to a course, project, or other collection of resources with a common set of users and roles. The word "context" is used instead of "course" because a course is only one kind of context (another type of context would be "group").

The structure of this document is:

1. USE CASES FOR BASIC LTI - A listing of the use cases describing the core usage scenarios of the Basic LTI specification;
2. BASIC LTI LAUNCH DATA - A description of the data items that are passed as part of the POST data when a Basic LTI launch is performed;
3. BASIC LTI SECURITY MODEL - The definition of the security environment for Basic LTI launches;
4. APPENDIX A LTI STANDARD VOCABULARIES - A reference to the LTI specification's standard vocabularies;

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## 2. Use Cases for Basic LTI

<b>Title:</b>	<b>Setting TP Domain Credentials (Basic LTI)</b>
<b>Use Case Local ID:</b>	LTIv1-12
<b>Description:</b>	The TC administrator configures TP domain credentials for a particular TP.
<b>Actors:</b>	<ul style="list-style-type: none"><li>● TC Administrator</li><li>● TP Administrator</li></ul>
<b>Preconditions:</b>	None
<b>Basic Flow of Events:</b>	<ol style="list-style-type: none"><li>1. The TP Administrator creates the key and secret combination for the TC</li><li>2. The TC Administrator obtains the key and secret from the TP administrator.</li><li>3. The TC Administrator installs the key and secret and associates them with launches destined for the TP's domain using a TC-provided dialog or configuration mechanism.</li></ol>
<b>Alternate Path</b>	A. In step 3, the key and secret combination may be designated to apply to a particular TP URL instead of all URLs destined for the TP's domain.

<b>Title:</b>	<b>Setting Link Level Credentials (Basic LTI)</b>
<b>Use Case Local ID:</b>	LTIv1-13
<b>Description:</b>	An instructor authors a Basic LTI link and sets the key/password for that link.
<b>Actors:</b>	<ul style="list-style-type: none"><li>● Instructor</li><li>● Tool Provider (TP)</li></ul>
<b>Preconditions:</b>	None
<b>Basic Flow of Events:</b>	<ol style="list-style-type: none"><li>1. The Instructor contacts the TP and gains access to a provider tool or content.</li><li>2. The TP provides the Instructor with (1) a Basic LTI launch URL or XML snippet for the content or tool, (2) a key used to access this content/tool, and (3) a secret associated with the key.</li><li>3. The Instructor enters the three values (URL or XML snippet, Key, Secret) into a Basic LTI authoring dialog in the TC system.</li></ol>

<b>Title:</b>	<b>Launching an Authored Basic LTI Link from a Context</b>
<b>Use Case</b>	LTiv1-14
<b>Local ID:</b>	
<b>Description:</b>	A non-Instructor user selects a Basic LTI link from a context in the TC.
<b>Actors:</b>	<ul style="list-style-type: none"> <li>• TC User</li> </ul>
<b>Preconditions:</b>	An Instructor has properly authored or imported a Basic LTI Link and there are appropriate credentials in place.
<b>Basic Flow of Events:</b>	<ol style="list-style-type: none"> <li>1. The TC User clicks on the link in the TC UI.</li> <li>2. The tool or content from the TP appears in the TC UI. If JavaScript is turned off – the TC User will need to click on a "continue" button to send the POST data to the TP.</li> </ol>

### 3. Basic LTI Launch Data

TC systems should provide as much data as possible in each launch to maximize the chance that the TP will have the data it needs to function properly. TC systems may have sandboxing features that limit the sending of certain Basic LTI data elements only to TP.

#### **lti\_message\_type=basic-lti-launch-request**

This indicates that this is a Basic LTI Launch Message. This allows a TP to accept a number of different LTI message types at the same launch URL. This parameter is required.

#### **lti\_version=LTI-1p0**

This indicates which version of the specification is being used for this particular message. This parameter is required.

#### **resource\_link\_id=88391-e1919-bb3456**

This is an opaque unique identifier that the TC guarantees will be unique within the TC for every placement of the link. If the tool / activity is placed multiple times in the same context, each of those placements will be distinct. This value will also change if the item is exported from one system or context and imported into another system or context. This parameter is required.

#### **resource\_link\_title=My Weekly Wiki**

A title for the resource. This is the clickable text that appears in the link. This parameter is recommended.

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**resource\_link\_description=...**

A plain text description of the link's destination, suitable for display alongside the link. Typically no more than several lines long. This parameter is optional.

**user\_id=0ae836b9-7fc9-4060-006f-27b2066ac545**

Uniquely identifies the user. This should not contain any identifying information for the user. Best practice is that this field should be a TC-generated long-term "primary key" to the user record – not the "logical key". This parameter is required.

**user\_image=http://....**

This attribute specifies the URI for an image of the user who launched this request. This image is suitable for use as a "profile picture" or an avatar representing the user. This parameter is optional.

**roles=Instructor**

A comma-separated list of URN values for roles. If this list is non-empty, it should contain at least one role from the LIS System Role, LIS Institution Role, or LIS Context Role vocabularies (See Appendix A). The assumed namespace of these URNs is the LIS vocabulary of LIS Context Roles so TCs can use the handles when the intent is to refer to an LIS context role. If the TC wants to include a role from another namespace, a fully-qualified URN should be used. Usage of roles from non-LIS vocabularies is discouraged as it may limit interoperability. This parameter is required.

**lis\_person\_name\_given=Jane****lis\_person\_name\_family=Public****lis\_person\_name\_full=Jane Q. Public****lis\_person\_contact\_email\_primary=user@school.edu**

These fields contain information about the user account that is performing this launch. The names of these data items are taken from LIS. The precise meaning of the content in these fields is defined by LIS. These parameters are recommended unless they are suppressed because of privacy settings.

**context\_id=8213060-006f-27b2066ac545**

This is an opaque identifier that uniquely identifies the context that contains the link being launched. This parameter is recommended.

If these custom parameters are included in the Basic LTI link, the TC must include them in the launch data or the TP may fail to function.

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## 4. Basic LTI Security Model

There are three possible credentials (keys and secrets) associated with a particular Basic LTI launch, listed in precedence order where TP domain credentials have the highest precedence.

- **Credentials associated with a TP domain.** These credentials authorize access to all TP URLs from the TC. Once the TP domain credentials are established for a TP, all Basic LTI tool launches to the TP will use this same secret. Using TP domain credentials gives TPs the option of trusting user information and context information across multiple contexts within a particular TC instance as being maintained properly by the TC.

In order to select which TP domain credentials are used for a particular LTI link, the TC examines the domain name in the launch URL for the LTI link. The TP domain credentials are looked up after scanning the domain name of the launch URL. So for example, if the launch URL was:

<http://demo.getmagicbox.com/ltigateway.htm>

So when TP is generating link URLs and giving them to an instructor or embedding those links in a cartridge, it is important to use consistent domain names in those launch URLs so as to be able to match a TP domain credentials for a particular TP with the appropriate launches.

- **Credentials associated with a TP URL.** These credentials authorize access to a particular TP URL from the TC. These are typically used when the administrator is enabling a remote tool within the TC with a preset configuration which can be added to a context by the instructor with little or no further configuration.
- **Credentials associated with a particular link.** These credentials authorize access to the resource at the URL specified by the link. These credentials are typically entered by the instructor at the moment that the link is created in the context.



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## 5. Appendix A - LTI Standard Vocabularies

This section contains URN vocabularies for ContextType and Role values.

### 1. LIS Vocabulary for System Role

The following table lists URN values for system role as defined by Explor-eBook.

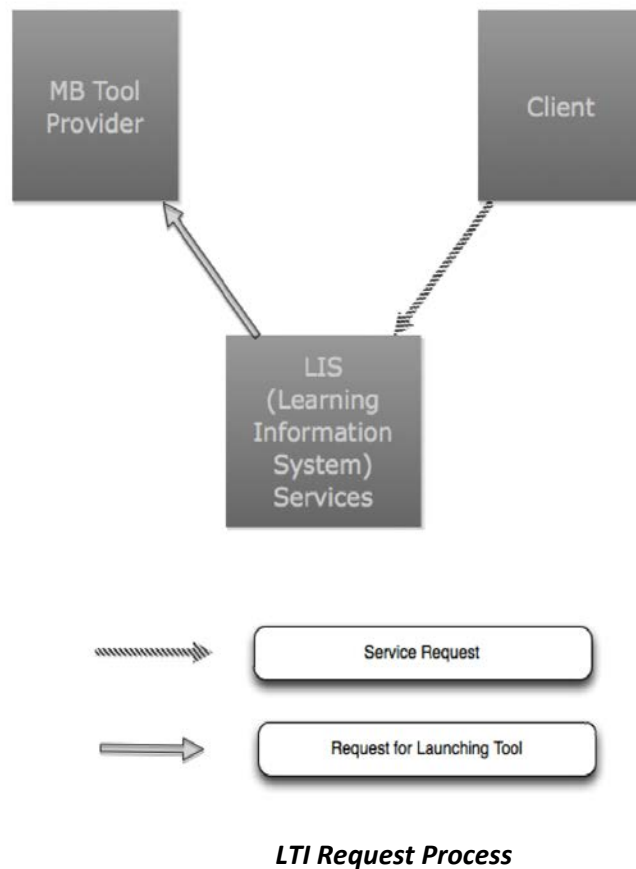
Handle	Full URN
SysAdmin	urn:lti:sysrole:ims/lis/SysAdmin
SysSupport	urn:lti:sysrole:ims/lis/SysSupport
Creator	urn:lti:sysrole:ims/lis/Creator
AccountAdmin	urn:lti:sysrole:ims/lis/AccountAdmin
Administrator	urn:lti:sysrole:ims/lis/Administrator

### 2. LIS vocabulary for Institution Role

The following table lists URN values for institution role as defined by Explor-eBook.

Handle	Full URN
Student	urn:lti:instrole:ims/lis/Student
Faculty	urn:lti:instrole:ims/lis/Faculty
Learner	urn:lti:instrole:ims/lis/Learner
Instructor	urn:lti:instrole:ims/lis/Instructor
ProspectiveStudent	urn:lti:instrole:ims/lis/ProspectiveStudent

## 6. Design related with Flow



Launch URL:

### Required Parameters :

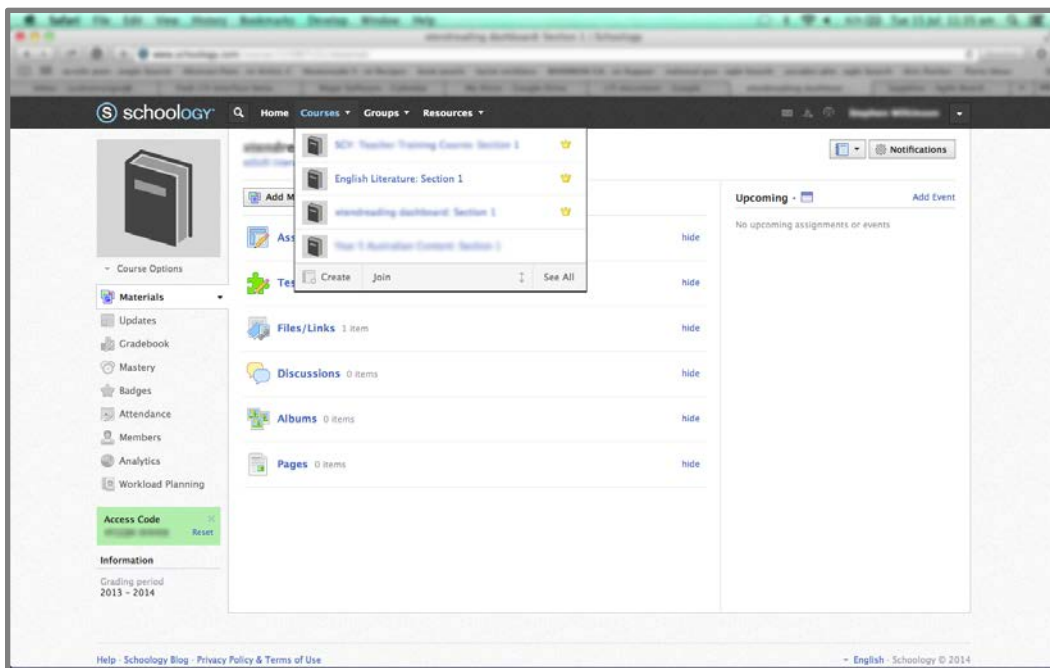
- a) Consumer key (mutually shared key on both ends) :
- b) Secret key (mutually shared key on both ends) : This is used to create the signature.
- c) resource\_link\_id
- d) user\_id: this field will use as username within our system (Required)
- e) lis\_person\_contact\_email\_primary: user email id
- f) list\_person\_name\_full : user full name
- g) tool\_consumer\_instance\_guid : Tenant name. ("GSE" in this case.) (Required)
- h) roles : Roles can be share comma seperated as well for multi role option.

### Custom Parameters:

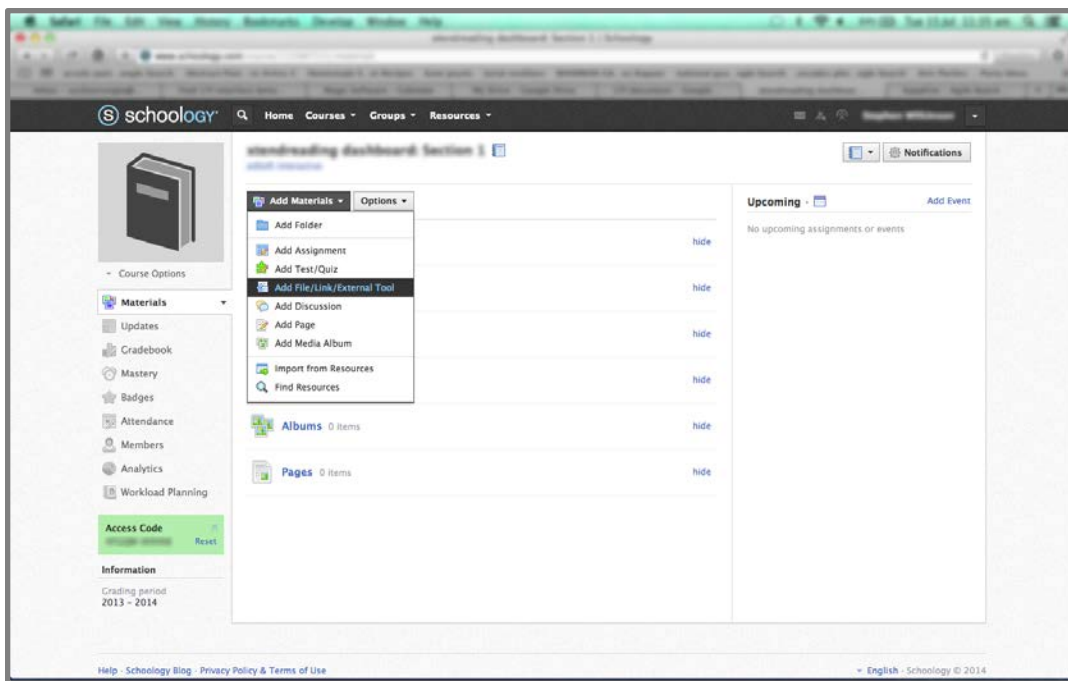
- a) custom\_callbackurl : This Custom Parameter will use to redirect request at the location where consumer need to show the error if request is not valid. If consumer is not passing this then our system will show its own error page.
- b) custom\_callbackhomeurl : This Custom Parameter will use to redirect request at the location where consumer need to show their own page after logout from Magic Box. If consumer is not passing this then our system will show its own TP login page.
- c) custom\_launch\_id : This Custom Parameter will use to launch the specific landing page. If consumer pass the custom\_launch\_id=myprofile then TP will automatically launch the myprofile page of user. if not then launch the by default dashboard of the user.

## 7. Integration with Schoology

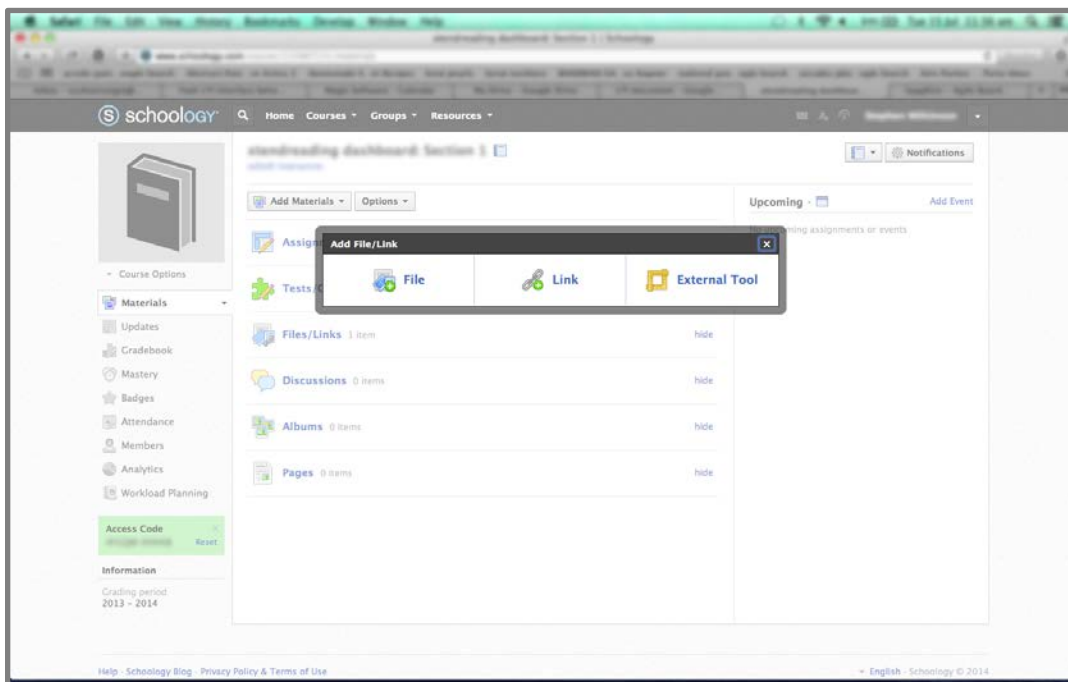
**Step 1: Select “Courses” from the Head Section & either create a new Course or select an existing course.**



**Step 2: Select “Add File/Link/External Tool” from “Add Materials” options in the courses.**



**Step 3: Select “External Tool” from the popup.**



**Step 4: Please fill the form appeared in the popup.**

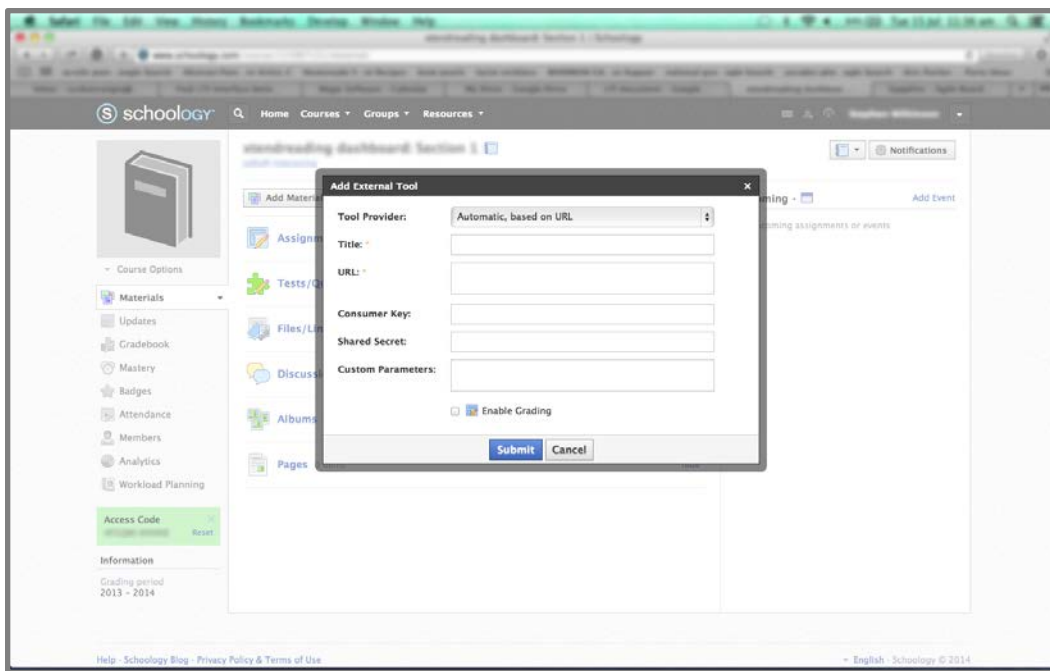
Title - This will be displayed as your course name.

URL - Fill the URL shared by Explor-eBook.

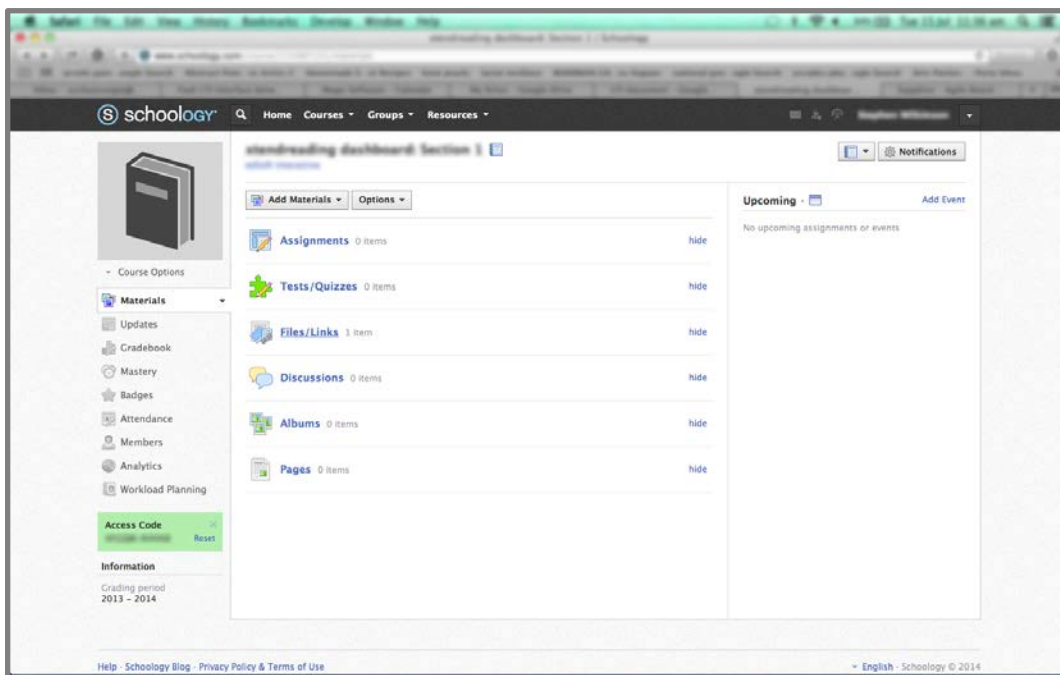
Consumer Key - Fill the “Consumer Key” shared by Explor-eBook.

Shared Secret - Fill the “Shared Secret” shared by Explor-eBook.

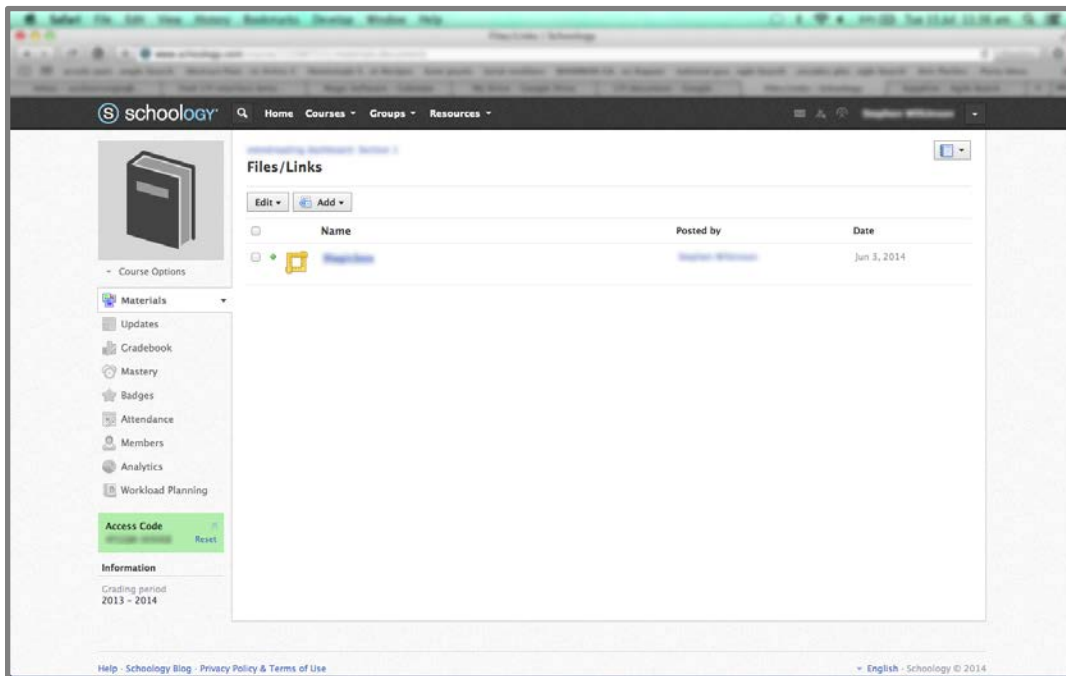
Custom Parameters - This is not mandatory. In case any custom parameters has been shared by Explor-eBook for the custom development, only then this parameter is required.



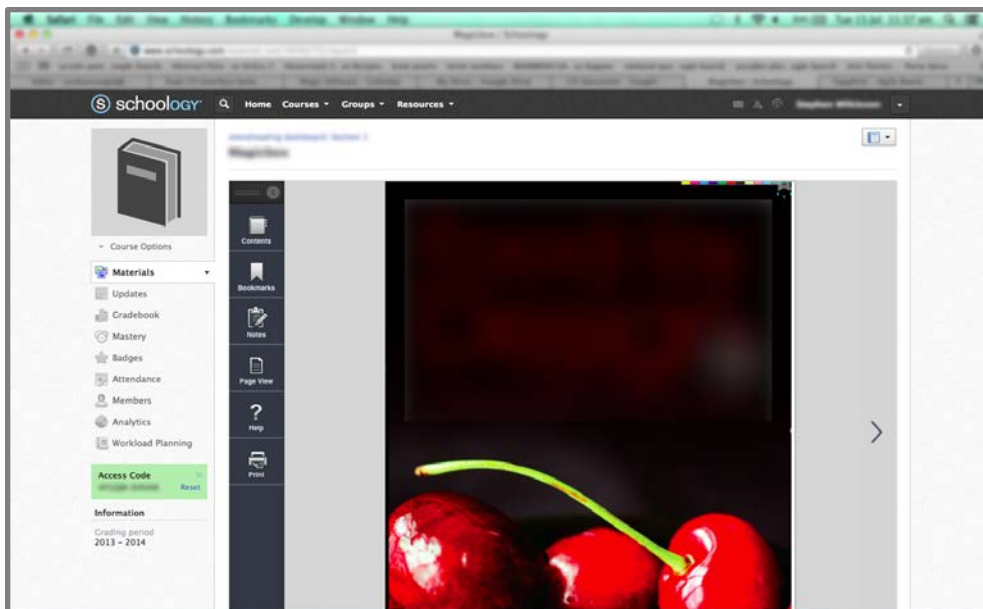
**Step 5: “Item” will be added in the “Files/Links” section once the details are filled in Step 4. Please click on this link to test the LTI.**



**Step 6: Please click on the Name to open the integrated URL of Explor-eBook via LTI.**



**Step 7: Explor-eBook LTI integration is complete & URL is displayed..**



## 8. Integration with Moodle

Please refer the following link: [http://docs.moodle.org/22/en/External\\_tool\\_settings](http://docs.moodle.org/22/en/External_tool_settings)