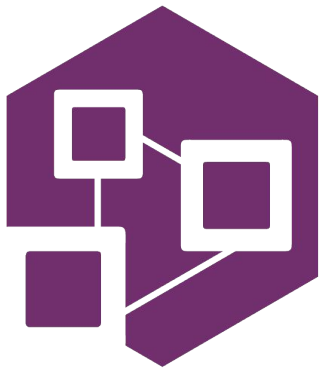


LEARNOVATE
Leading Learning Innovation

Almanac

Engaging, dynamically generated learning experiences tailored to learners needs

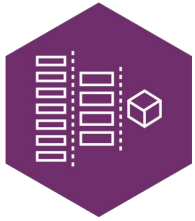
www.learnovatecentre.org



Almanac



Engaging, dynamically generated learning experiences tailored to learners needs



Almanac

Personalised learning experiences through adaptability

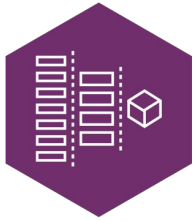


ALMANAC is a multimodal adaptive learning framework designed to provide learners with an engaging and intuitive learning experience incorporating a **rich blend of multimedia** including textual content, images, videos and animations.

ALMANAC provides the learner with **access to tailored learning experiences** that are **dynamically generated** based on the learners **immediate learning needs**. The aim of ALMANAC is to **generate learning experiences** that engage the learner and encourage them to **explore topics** while at the same time **having the information they need at their fingertips when they need it**.

The learner can **control their own learning experience** through simple controls enabling them to tailor the learning experiences generated by ALMANAC to meet their own learning needs. **The complexity and length of learning experiences generated by ALMANAC can be controlled by the learner to ensure that the learning experience provides the appropriate level of educational support to the learner while fitting into the time available to the learner.**

This learner driven adaptive behaviour allows ALMANAC to tailor the learning experience to the learners needs without the requirement to implicitly model the learners prior knowledge of a subject domain, which would be extremely difficult in a point of need context. The optional adaptation controls also remove the need to explicitly request information from the learner about their prior knowledge. It also empowers the learner to take control of their own learning and to practice their metacognitive skills.



Almanac

Just in time dynamic composition of learning experiences

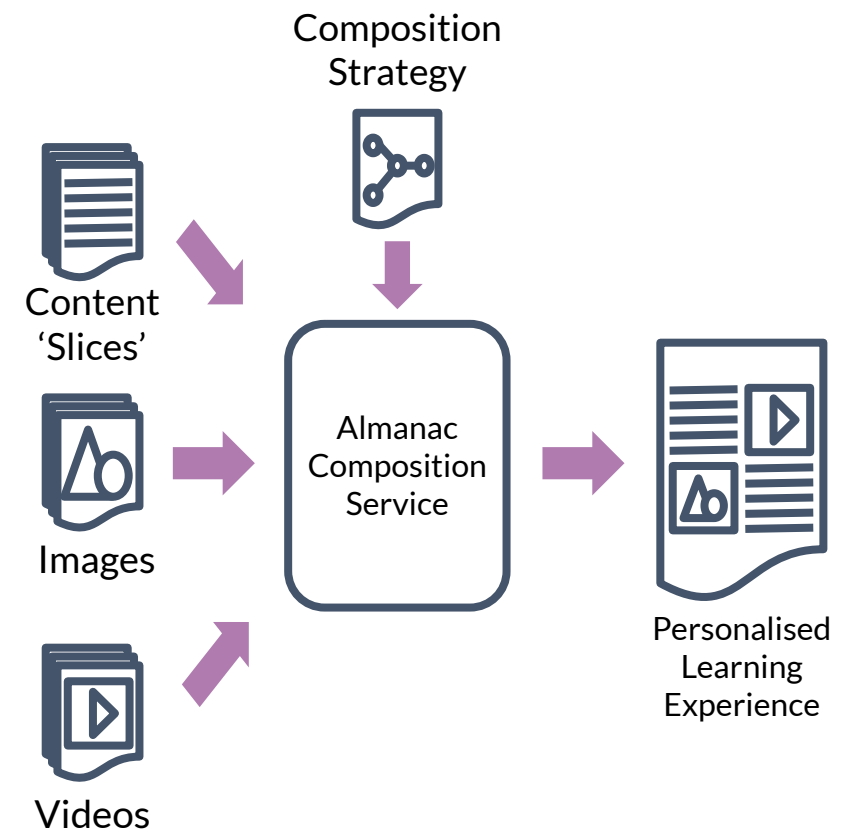
ALMANAC dynamically composes educationally sound learning experiences from a range of different content sources.

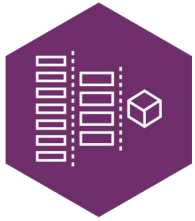
Existing or legacy publisher content can form the basis for learning experiences as it represents a trusted source of content with a proven level of quality. In this respect, ALMANAC represents a way in which publishers can repurpose and remonetise content that previously might not have been available in formats other than textbooks.

ALMANAC can decompose existing documents and use this material as the basis for generating new learning experiences.

Through the dynamic composition process, slices of content are recombined in new ways that increase content reuse through the use of multiple compositions strategies, broadening the range of scenarios and contexts in which the content can be used appropriately.

For example, publisher content that was originally developed for a textbook and designed to meet the needs of all learners in a class can be reused as part of a tool to support struggling learners or as a self-directed learning tool for more confident or experienced learners.





Almanac

Blending content sources



ALMANAC supports a wide range of different learning applications from K12 to corporate including advanced formal learning strategies such as 'flipped classroom', self-directed non-formal learning and point-of-need/just-in-time learning. Any scenario in which the learner is empowered to manage their own learning.

ALMANAC provides the pedagogical and organisational benefits of on-demand, bite-sized, personalised learning in two contexts – education and workplace. For each of the two learning contexts there are two stakeholders - the learner or employee and the teacher or manager.

Schools, Higher and Further Education

Learner

- Active and engaged
- Pulling information for point of need performance support
- Metacognitively aware
- Building own mental models

Teacher

- Facilitator and consolidator
- Focussed on higher levels of Bloom's Taxonomy

Workplace

Employee

- Active and engaged
- Pulling information for point of need performance support
- Metacognitively aware

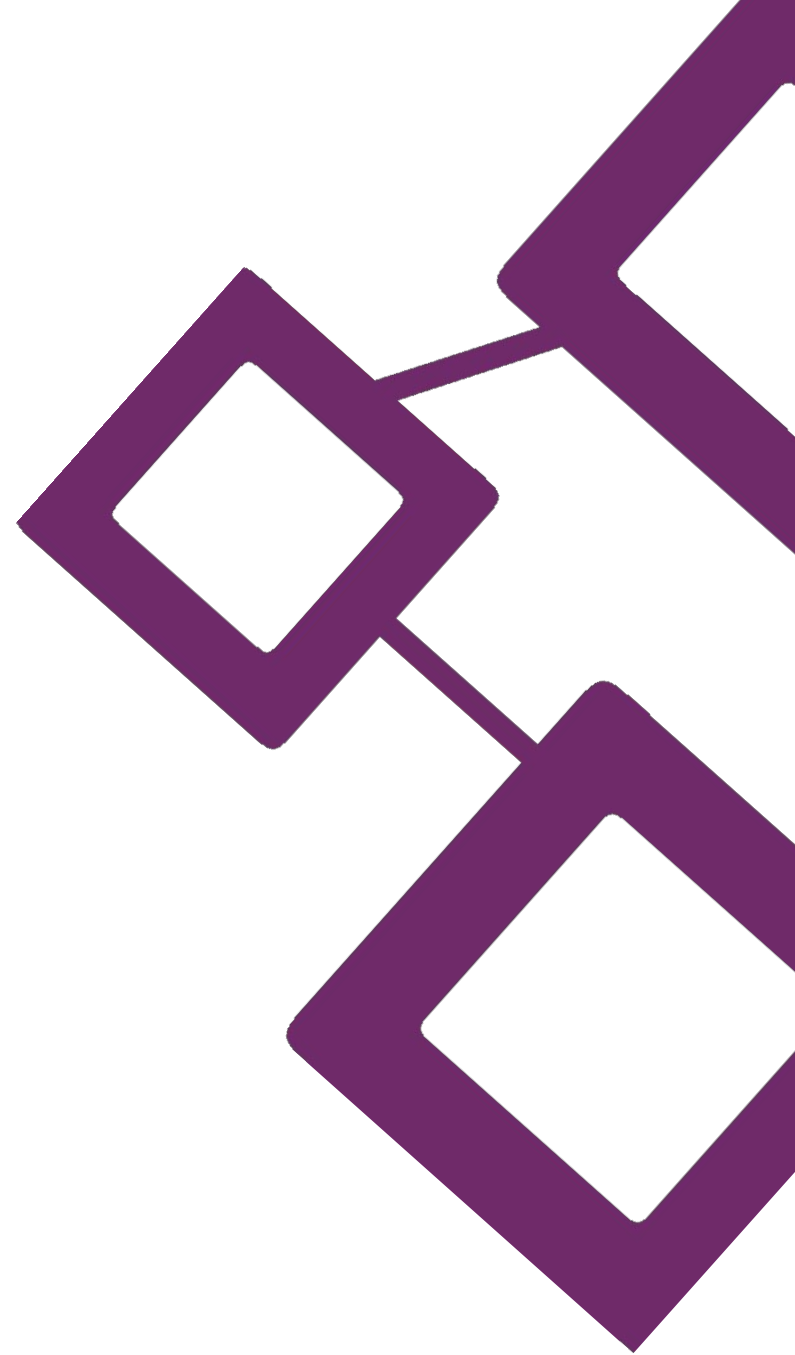
Manager

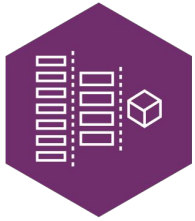
- Supporting employee to manage their own performance and to identify knowledge or skill gaps



Almanac

Addressing Organisational and Educational Challenges



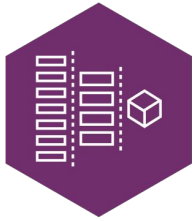


Almanac

Addressing Organisational Challenges



01	Employees need access to on-demand, point-of-need learning using knowledge resources in the organisation and outside	Personalised articles as a mash-up of internal (organisational) content and curated open source content
02	Need for adaptive personalised learning	A pedagogical strategy that gives the learner control over their own learning experience with regard to both complexity and length of the article. The learner uses adaptation controls to take control over their own learning and to practise their metacognitive skills.
03	Need for flexibility; both as to learning modalities and learning strategies (e.g. non-formal bite-sized learning)	<ul style="list-style-type: none">• Multimedia-rich learning articles promote effective information processing and support different learning modalities.• Learner control and a tailored learning experience support a variety of learning strategies. The learner can indicate their pre knowledge level and their preference for the length of the article.
04	Need for effective and efficient reuse of content	<p>ALMANAC represents a way in which publishers can repurpose and remonetise content that previously might not have been available in formats other than textbooks through:</p> <ul style="list-style-type: none">• Automated analysis of large learning content repositories to facilitate content reuse and discovery.• Curating of external content• Dynamically extracting metadata for legacy content



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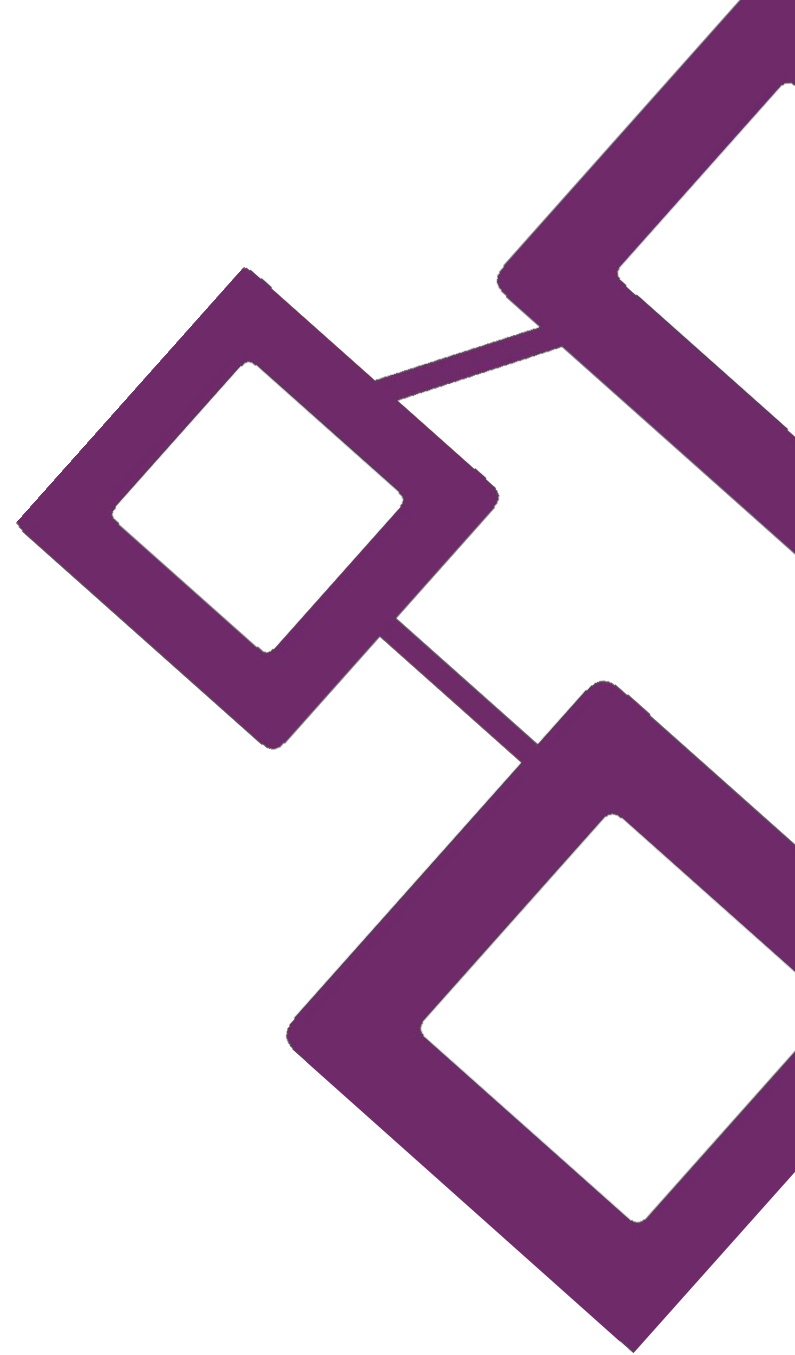
Addressing Educational Challenges

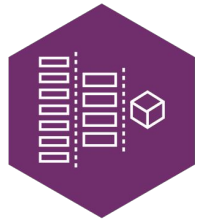


01	learners need access to on-demand, bite-sized learning which ideally uses proprietary learning content and curated open content to supplement and enhance the learning affordances of educational publishers' content and to ensure learner engagement	Personalised articles as a mash-up of proprietary learning content and curated open source content.
02	Need for adaptive, personalised learning	A pedagogical strategy that gives the learner control over their own learning experience with regard to both complexity and length of the article. The learner uses adaptation controls to take control over their own learning and to practise their metacognitive skills.
03	Need for flexibility; both with regard to learning modalities and learning strategies (e.g. support flipped classroom model)	<ul style="list-style-type: none">• Multimedia-rich learning articles promote effective information processing and support different learning modalities.• Learner control and a tailored learning experience support a variety of learning strategies. The learner can indicate their pre knowledge level and their preference for the length of the article.
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Almanac

Learner Experience





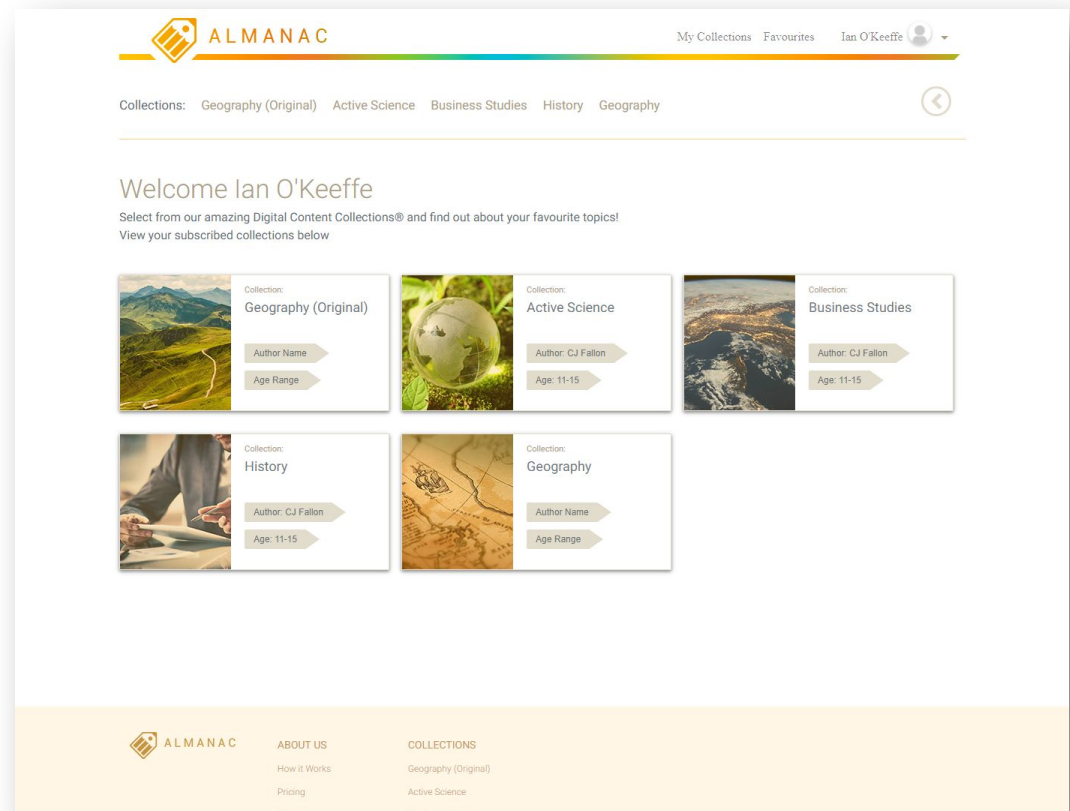
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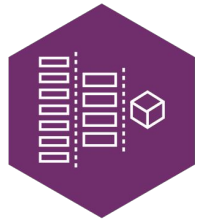
Learner Experience

The Learner can select the subject area that they are interested in learning about from the list of available 'almanacs'.

In this example, Almanac is being used to support classroom based learning in schools. The learner has access to a range of different 'almanacs' that align with the subjects they take.

However, by incorporating different content bases, Almanac can support corporate as well as higher and further education use cases.





Almanac

Learner Experience

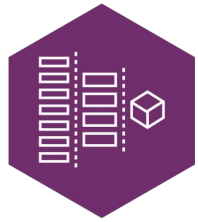
The learner searches for topics that they want to learn about, for example 'gases'.

The learner can use simple slider controls to adapt how their personalised learning articles will be created by Almanac.

Depending on the use case requirements different adaptive behaviours and controls can be used

For example: time available, prior knowledge, difficulty level, etc.

A screenshot of the Almanac web application interface. At the top, there is a header with the 'ALMANAC' logo and a navigation bar with links for 'My Collections', 'Favourites', and a user profile 'Ian O'Keefe'. Below the header, a breadcrumb trail shows 'Collections: Geography (Original) > Active Science > Business Studies > History > Geography'. The main content area is titled 'Active Science' and includes the instruction 'Select from our amazing Digital Content Collections® and find out about your favourite topics!'. It features a three-step search process: 1. 'Enter the topic you're looking for:' with a text input field and a right arrow button. 2. 'Describe what results you want for this search:' with a 'Content Type' slider (ranging from 'Core' to 'Explore', currently set near 'Core') and a 'Source' dropdown menu (currently showing 'Publisher'). 3. 'And ... Go!' with an orange 'SEARCH' button. The interface is clean and modern, with a light yellow footer bar.



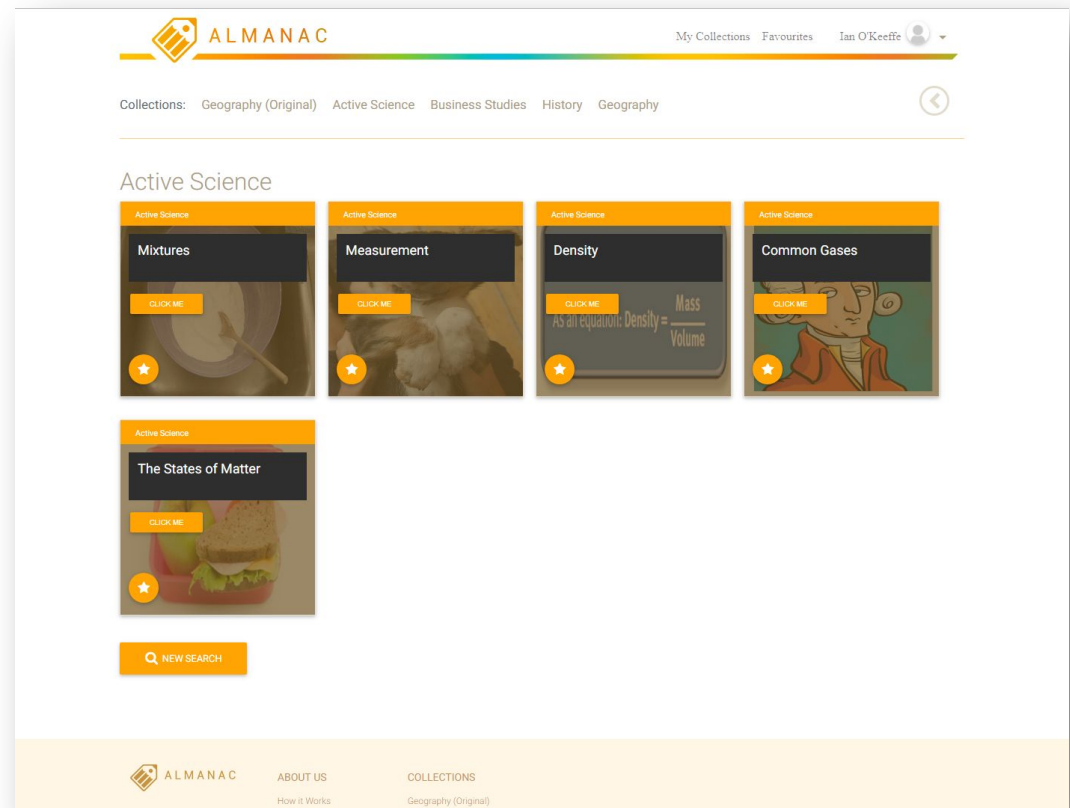
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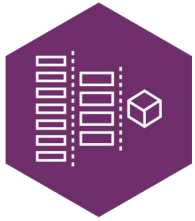
Learner Experience

Almanac presents the learner with a range of different 'articles' that it can create for the learner based on the learning needs and preferences.

The learner can then choose the article that is most relevant or interesting based on their learning needs.

This approach is designed to encourage the learner to explore other related or relevant topics.





Almanac

Learner Experience

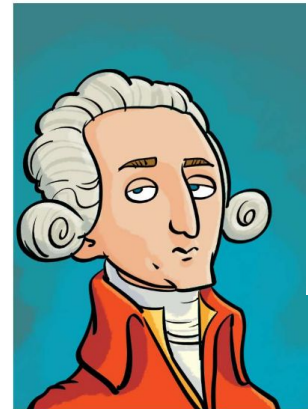
Almanac dynamically generates a learning experience for the learner from available curated content slices, blending both publisher content and other 3rd party sources to create a multimedia rich experience.

Almanac personalise the experience at three levels:

- Learning strategy
- Learning path
- Content

Learning experiences are always structured in an educationally sound way that is appropriate to the needs of the learner.

How oxygen got its name

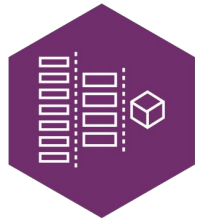


Source: Publisher

You read about Antoine Lavoisier and his experiments heating tin. He repeated his experiments many times and measured the volume of air that was absorbed during the reaction. He always found that 20% of the total air inside the flask was used up in the process. He concluded that only 20% of air was capable of reacting with tin. He realised that this 20% must be the 'pure air' that Joseph Priestley had discovered in 1774. Lavoisier named it 'oxygen'.

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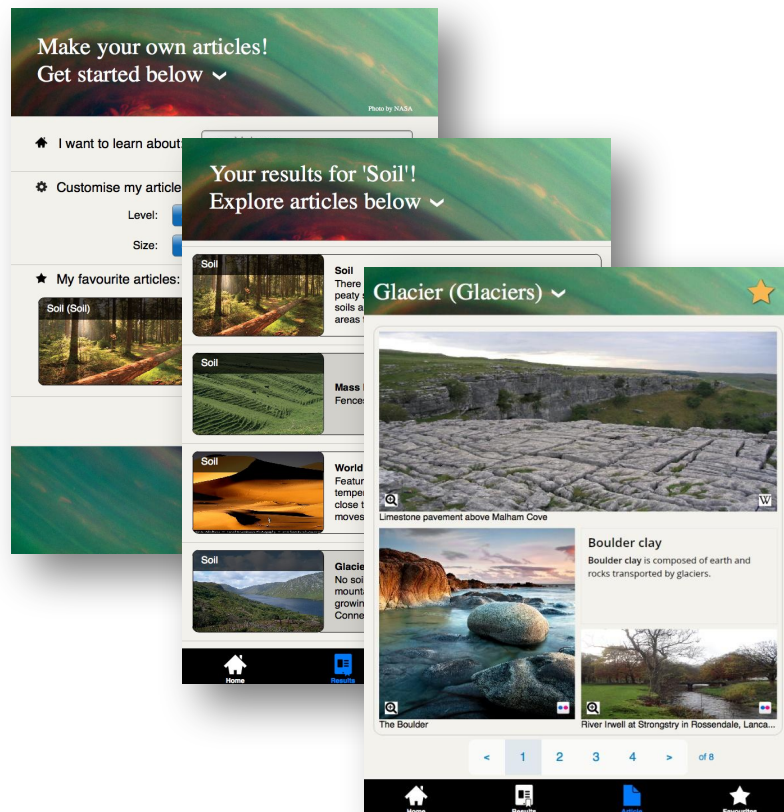




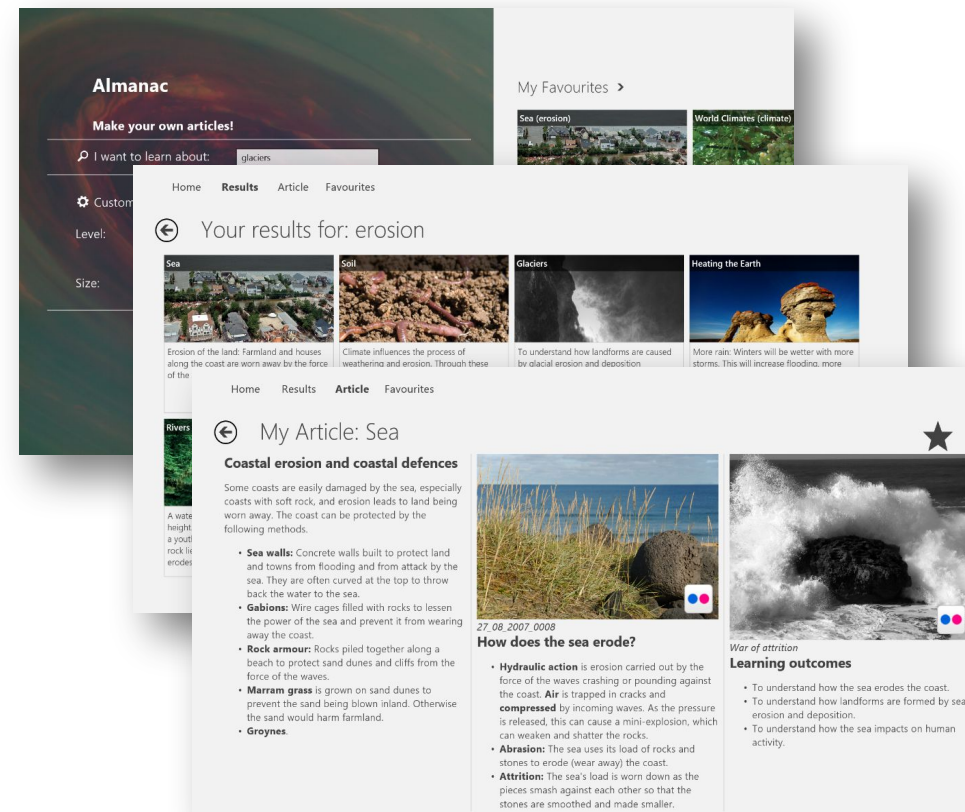
Almanac

Learner Experience – apps

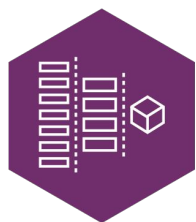
Custom iOS App



Custom Windows App



Almanac's APIs wrap the adaptive composition intelligence so adaptive learning experiences can be included anywhere. Custom apps and websites or integrated into an existing learning environment



Almanac

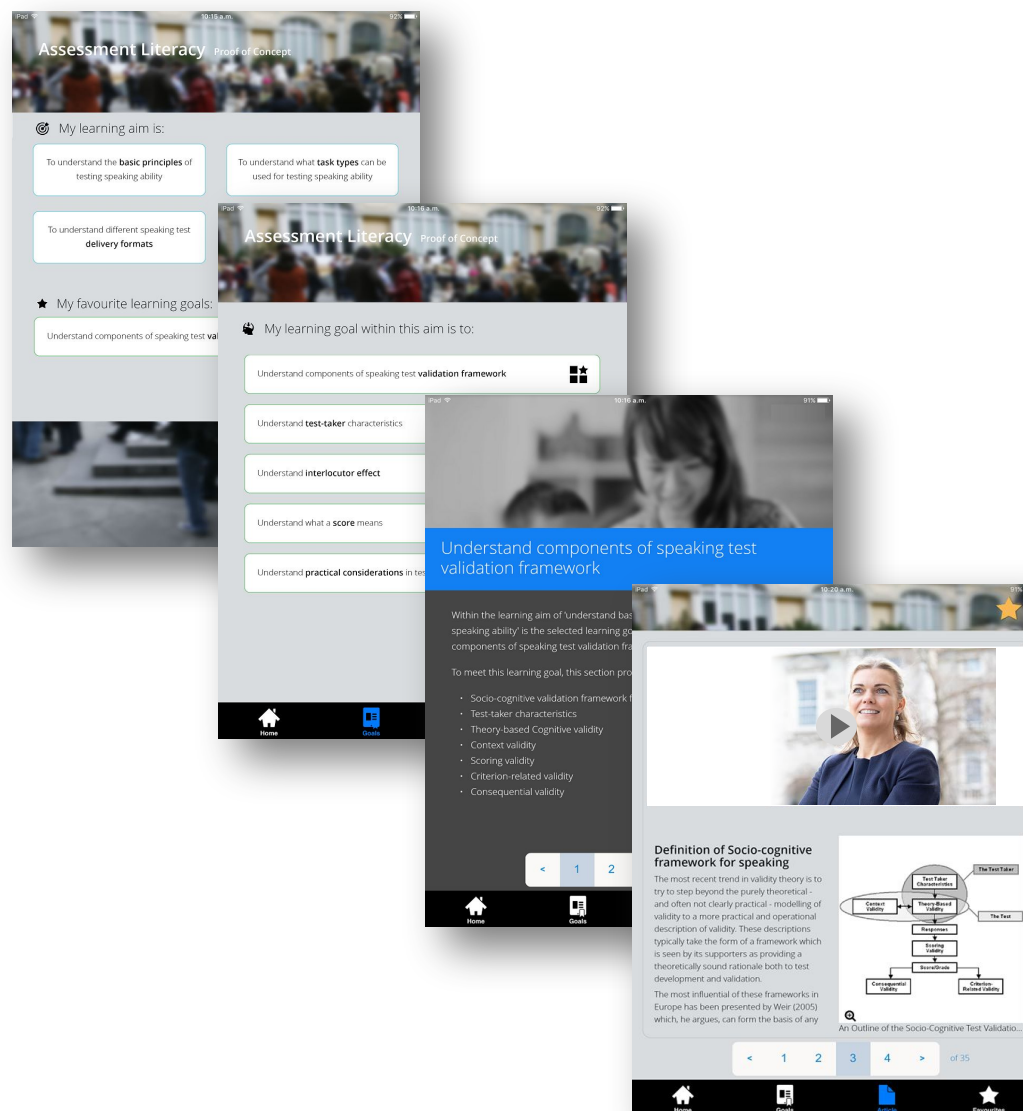
Custom adaptive learning experiences

The technology and methodologies that underpin Almanac are based on over 20 years of research.

Almanac wraps all of this research up in a customisable package to facilitate easier adoption but it can still support completely bespoke adaptive learning experiences with a little bit of extra know-how.

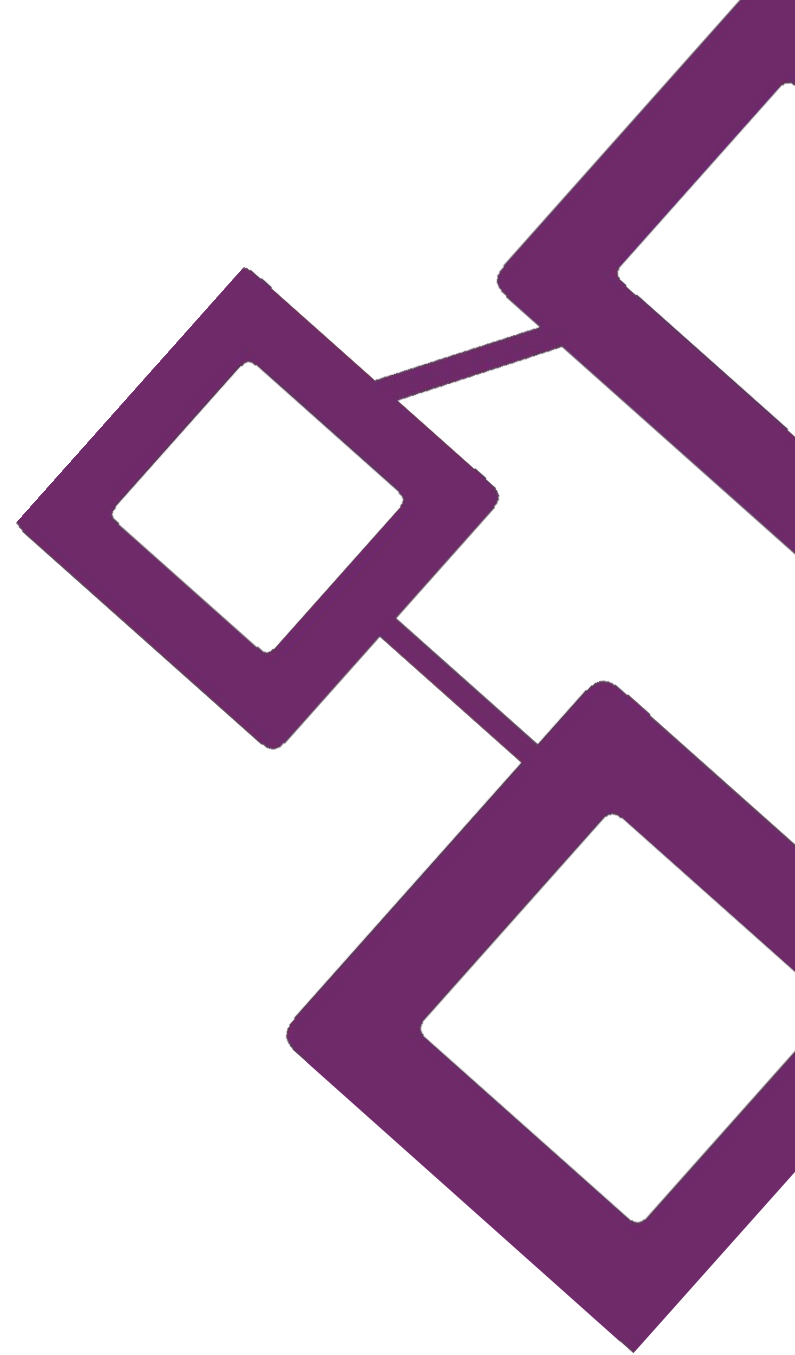
This is an example of a custom adaptive learning experience for a corporate learner that is driven by their learning goals and aims rather than their immediate learning need.

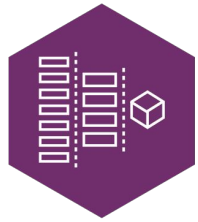
Almanac can also be used purely as a dynamic content composition service if adaptive behaviours are not required.



Almanac

Publisher Toolkit





Almanac

Publisher Toolkit

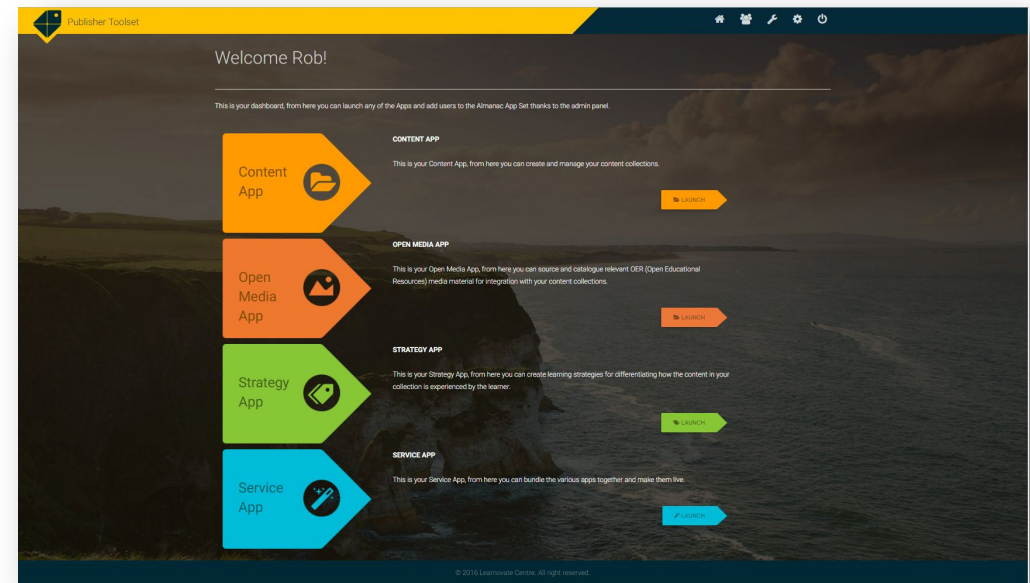
The Almanac **Publisher Toolkit** is designed to enable organisations to quickly and easily start producing adaptive learning experiences for their learners.

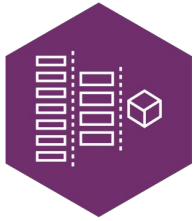
Designed with educators and instructional designers in mind, the toolkit doesn't require expertise in adaptive learning technology or other technical experience.

The Publisher Toolkit consists of 4 tools that work together to support the entire process of authoring and publishing an adaptive learning experience:

- Content Management Tool
- Open Media Curation Tool
- Adaptation Strategy Authoring Tool
- Service Management Tool

Designed to support learning providers, no matter where on their digital transformation journey they are.





Almanac

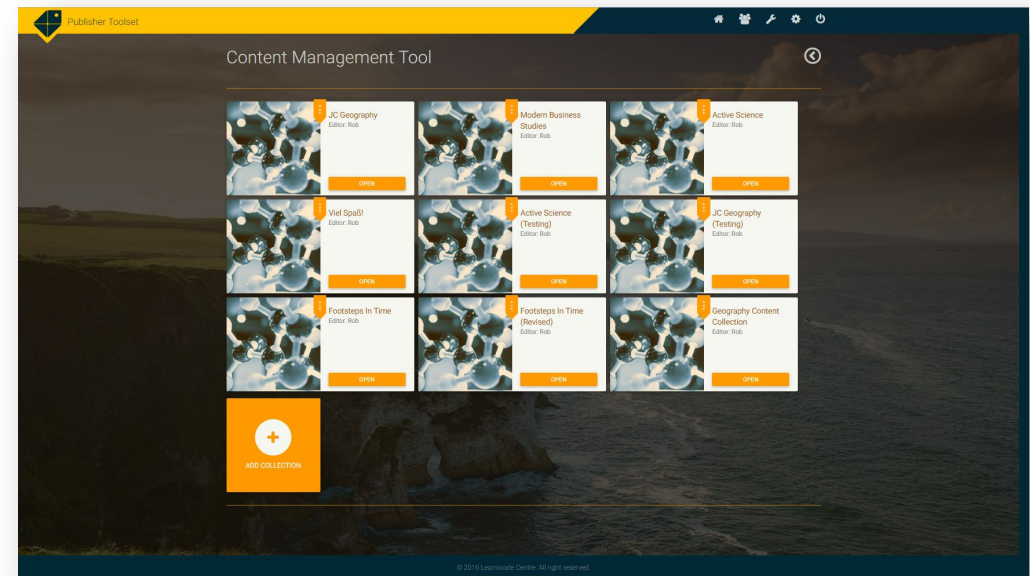
Publisher Toolkit – Content Management Tool

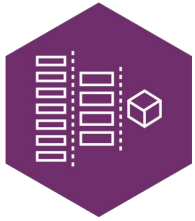
The **Content Management Tool** allows a non-technical user to upload and curate content to the system.

It supports the organisation of content within individual ‘collections’ so that multiple content bases, such as individual subject domains, can be created and managed using the tool.

A key feature of the tool is the ability to annotate content with basic metadata that will allow the content to be discovered by the Almanac Composition Service.

The Content Management Tool is essentially a basic Content Manage System (CMS) or Digital Asset Management (DAM) System that has been designed specifically to simplify the content management process and tailor it to the creation of adaptive learning experiences using Almanac.





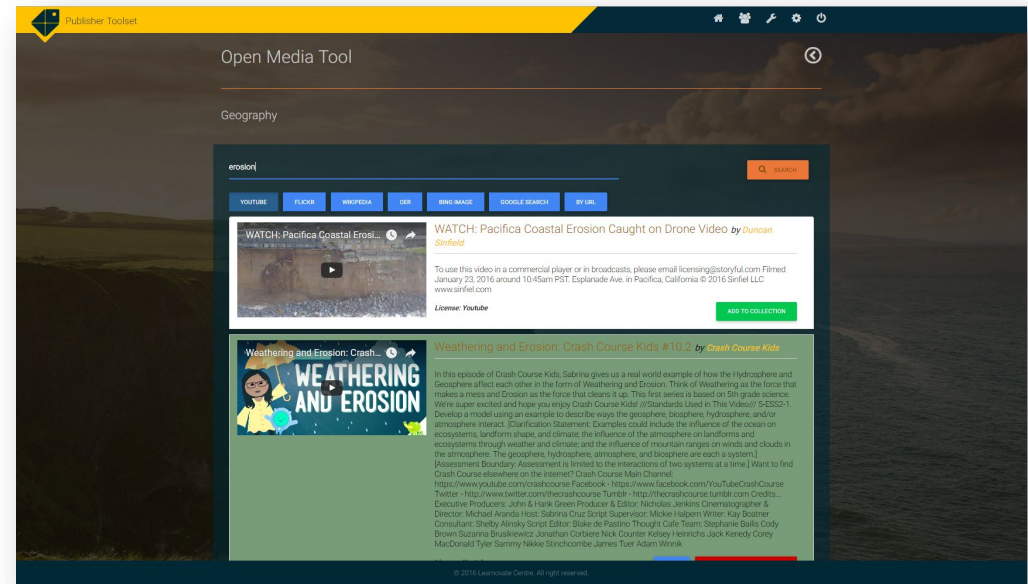
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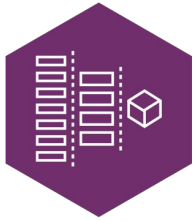
Publisher Toolkit – Open Media Curation Tool

The **Open Media Curation Tool** allows a non-technical user to create and manage a curated collection of open media resources including Open Educational Resources (OERs).

The tool provides the user with access to a set of search services that enable them to discover images, videos and other resource types from familiar services such as Flickr, Wikipedia, YouTube and Google Image Search.

The tool provides an open and extensible mechanism that allows additional services to be added. The tool allows the user to add additional metadata to the resources as well as providing easy access to licensing information on each individual resource.





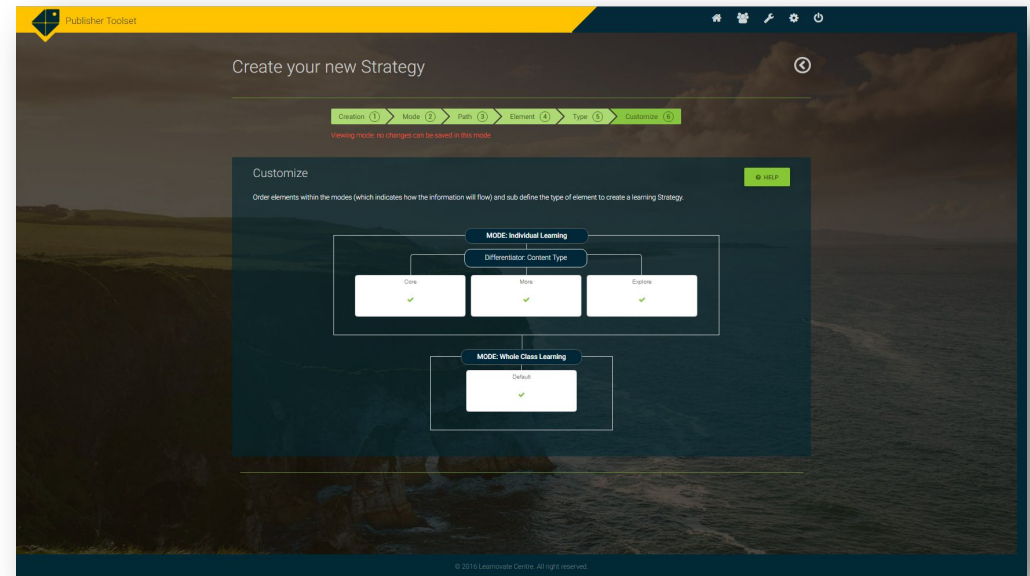
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Publisher Toolkit – Adaptation Strategy Authoring Tool

The **Adaptation Strategy Authoring Tool** is the most significant and novel feature of the Publisher Toolkit. It is designed to support a non-technical expert such as a teacher or instructional designer to author Adaptation Strategies that allow the delivery of adaptive/personalised learning experiences.

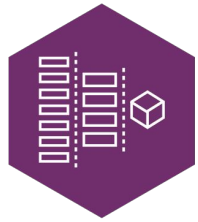
An Adaptation Strategy is a model that describes how content should be annotated, selected and sequenced to create an experience that is tailored to the needs of an individual learner while at the same time still conforming to best practice. In this case, best practice equates to appropriate pedagogical and/or instructional design guidelines with the aim that the resulting learning experience is pedagogically sound.

Users of the authoring tool do not have to have any technical knowledge of adaptive content delivery systems or the underlying infrastructure of Almanac in order to use the tool. However, they do need to have some experience in instructional design and pedagogical techniques. The tool is primarily intended for use by instructional designers at a publisher or similar organisation but can easily be used by teachers or lecturers in a K12 or university context



What is an Adaptation Strategy?

An Adaptation Strategy is essentially a template for a learning experience that describes what types of learning content should be included and in what order they need to be presented. It also describes how the learning experience can be adapted to the needs of the learner by taking different paths or selecting different types of content. Crucially, the strategy does not specify the content resources that are needed to create a learning experience.



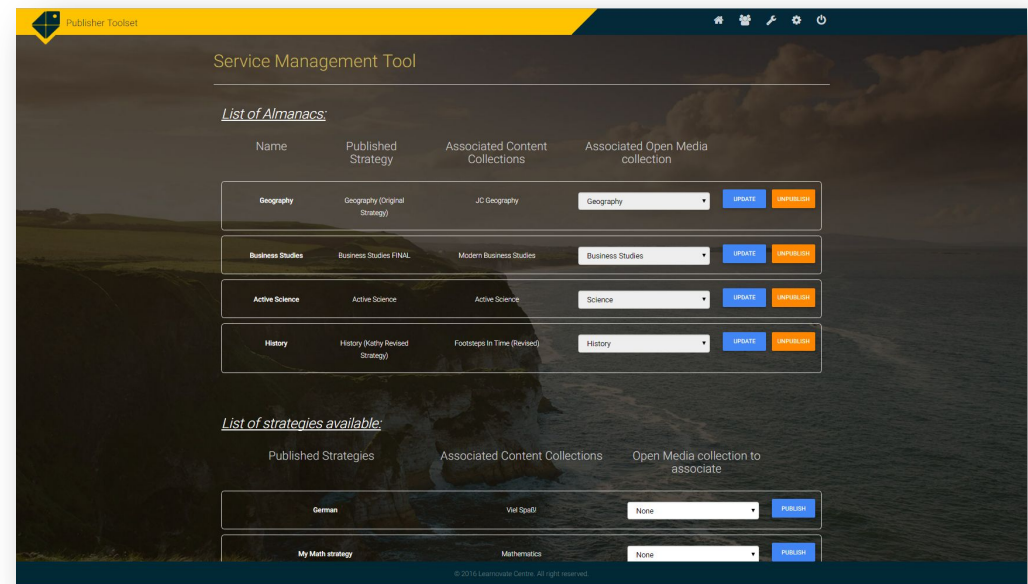
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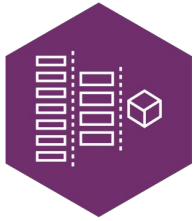
Publisher Toolkit – Service Management Tool

The **Service Management Tool** is the point of integration between the Publisher Toolkit and the Almanac Composition Service.

This tool allows the publisher to link authored strategies with collections of content created with the Content Management Tool and Open Media Curation Tool.

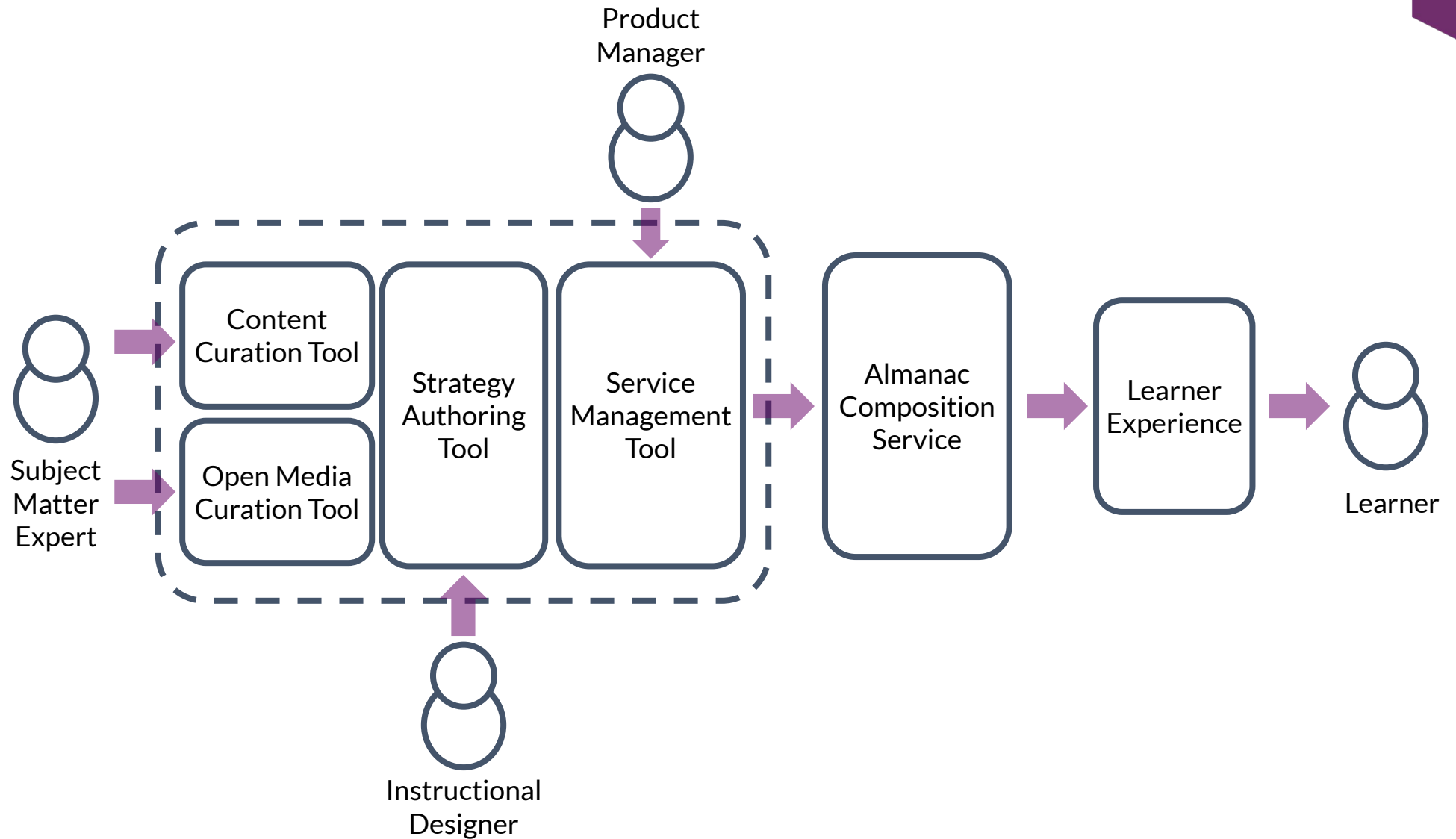
Linked strategies and content collections can then be 'published' to the Almanac Composition Service at which point they become available to learners.

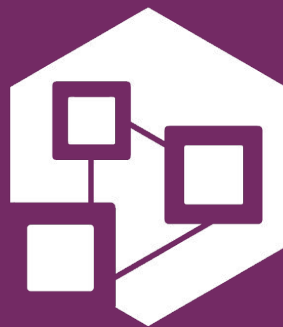




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Publisher Toolkit – Production Lifecycle





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The University of Dublin

**TECHNOLOGY
CENTRE**
ENTERPRISE IRELAND
IDA IRELAND SUPPORTED

