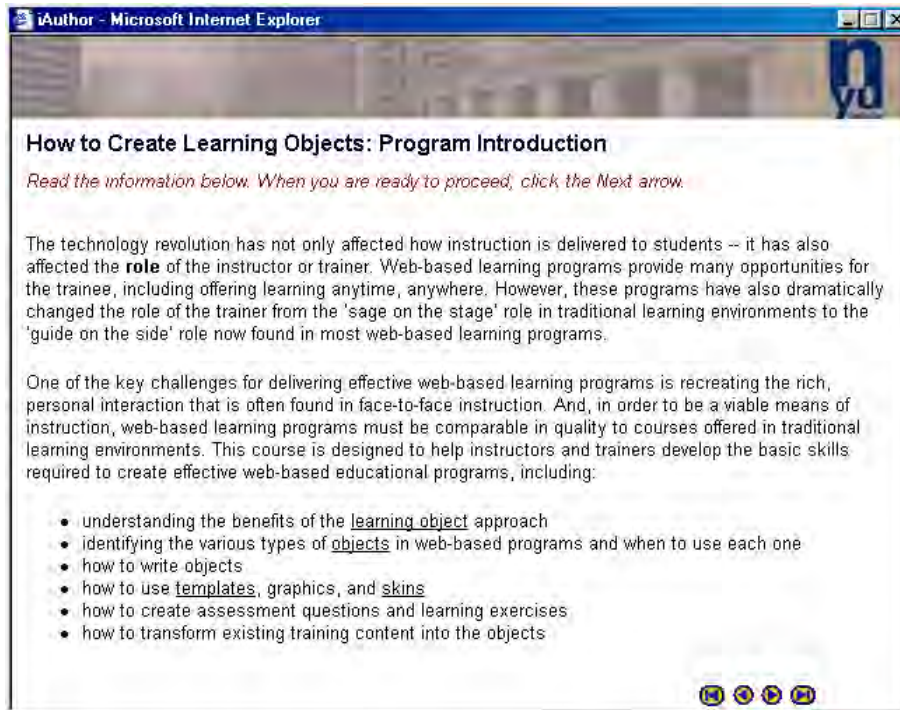


## Topic: How To Create Learning Objects

### LO 0: Program Introduction



The screenshot shows a window titled "iAuthor - Microsoft Internet Explorer". The main content area displays the title "How to Create Learning Objects: Program Introduction" and a red instruction: "Read the information below. When you are ready to proceed, click the Next arrow." Below this is a paragraph of text about technology's impact on instruction and the role of the instructor. A second paragraph discusses the challenge of recreating face-to-face interaction in web-based programs. A bulleted list follows, detailing the course's objectives. At the bottom right, there are four navigation icons: a home icon, a back icon, a forward icon, and a refresh icon.

**How to Create Learning Objects: Program Introduction**

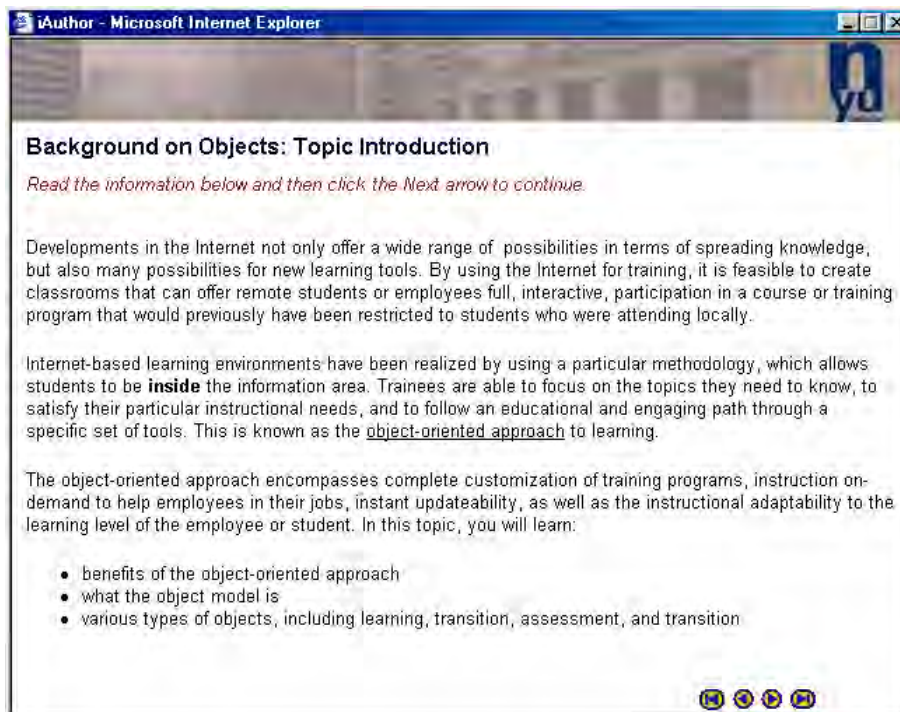
*Read the information below. When you are ready to proceed, click the Next arrow.*

The technology revolution has not only affected how instruction is delivered to students – it has also affected the **role** of the instructor or trainer. Web-based learning programs provide many opportunities for the trainee, including offering learning anytime, anywhere. However, these programs have also dramatically changed the role of the trainer from the 'sage on the stage' role in traditional learning environments to the 'guide on the side' role now found in most web-based learning programs.

One of the key challenges for delivering effective web-based learning programs is recreating the rich, personal interaction that is often found in face-to-face instruction. And, in order to be a viable means of instruction, web-based learning programs must be comparable in quality to courses offered in traditional learning environments. This course is designed to help instructors and trainers develop the basic skills required to create effective web-based educational programs, including:

- understanding the benefits of the learning object approach
- identifying the various types of objects in web-based programs and when to use each one
- how to write objects
- how to use templates, graphics, and skins
- how to create assessment questions and learning exercises
- how to transform existing training content into the objects

### LO 1: Background on Objects: Topic Introduction



The screenshot shows a window titled "iAuthor - Microsoft Internet Explorer". The main content area displays the title "Background on Objects: Topic Introduction" and a red instruction: "Read the information below and then click the Next arrow to continue." Below this is a paragraph about the Internet's role in spreading knowledge and creating interactive classrooms. A second paragraph discusses the methodology of internet-based learning environments. A third paragraph explains the object-oriented approach to learning. A bulleted list follows, detailing the benefits and types of objects. At the bottom right, there are four navigation icons: a home icon, a back icon, a forward icon, and a refresh icon.

**Background on Objects: Topic Introduction**

*Read the information below and then click the Next arrow to continue.*

Developments in the Internet not only offer a wide range of possibilities in terms of spreading knowledge, but also many possibilities for new learning tools. By using the Internet for training, it is feasible to create classrooms that can offer remote students or employees full, interactive, participation in a course or training program that would previously have been restricted to students who were attending locally.


Internet-based learning environments have been realized by using a particular methodology, which allows students to be **inside** the information area. Trainees are able to focus on the topics they need to know, to satisfy their particular instructional needs, and to follow an educational and engaging path through a specific set of tools. This is known as the object-oriented approach to learning.

The object-oriented approach encompasses complete customization of training programs, instruction on-demand to help employees in their jobs, instant updateability, as well as the instructional adaptability to the learning level of the employee or student. In this topic, you will learn:

- benefits of the object-oriented approach
- what the object model is
- various types of objects, including learning, transition, assessment, and transition


## LO 2: Benefits of the Object Oriented Approach

iAuthor - Microsoft Internet Explorer



### Overview


*Read the information below and then click the Next arrow to continue.*




**Corporations and universities across the world are investing millions of dollars in distance learning and web-based training initiatives.** Simply defined, web-based training refers to courses or training programs offered via the Internet. The minimum requirement for employees or students participating in web-based training is access to a computer, the Internet, and motivation to succeed in a nontraditional classroom.

The object-oriented approach to web-based publishing is a stock photo conveying same things as front page of our homepage - increasing pace of business, smarter world, need for fast, effective learning solutions. should have a businessperson in motion. prefer female. Existing learning content can be tagged with metadata, and assembled into learning programs or courses as needed.

*Click the Next arrow to learn more about what these terms and concepts mean.*



iAuthor - Microsoft Internet Explorer



### Benefits of the Object-Oriented Approach

*Click the options below for more information and then click the Next arrow to continue.*


[Overall Control](#)      [On-Demand Training](#)      [Cost Effectiveness](#)

[Instant Updateability](#)      [Learner Customization](#)


The object-oriented approach to web-based training differs from traditional classroom training because it does not require employees or students to meet at a certain time and place, use the same materials, or receive the same instruction as everyone else in the class.

The object-oriented approach frees employees from being bombarded with information they may not need in their jobs and makes it easier for them to gain the skills they do need to perform their jobs better. In addition, self-study training courses are available as often as employees need, so they can refresh their skill and knowledge base on a continual basis. Also, the object model is an **efficient method** of retraining or cross training.

*For example:* In an online training class employees have the ability to tailor the learning experience to meet their specific needs. While the training materials may be the same for everyone in the class, employees can study the topics in the order they want, and study in more depth the topics that are most useful to their specific job requirements.



iAuthor - Microsoft Internet Explorer



## Benefits of the Object-Oriented Approach


*Click the options below for more information and then click the Next arrow to continue.*

[Overall Control](#)      [On-Demand Training](#)      [Cost Effectiveness](#)

[Instant Updateability](#)      [Learner Customization](#)

Traditional training programs require employees to attend classes, and then bring the **knowledge** they gain back with them to the workplace.

By utilizing the object-oriented approach to training, employees can study during their own peak learning periods. All the training information is housed digitally, and can be accessed from the employee's own computer. That means they can also study in an environment that is comfortable for them - home, work, while traveling, in a library, or even a cyber-cafe. With web-based training, employees can read, listen, or view the materials repeatedly if necessary and they can do this right from their desks.



iAuthor - Microsoft Internet Explorer



## Benefits of the Object-Oriented Approach

*Click the options below for more information and then click the Next arrow to continue.*

[Overall Control](#)      [On-Demand Training](#)      [Cost Effectiveness](#)

[Instant Updateability](#)      [Learner Customization](#)

Web-based training is significantly **more cost-effective** than traditional training because organizations do not have to invest in employees' travel and accommodation expenses to attend training seminars. In addition, traditional training programs often come in packages that only **partly address** a given organization's needs. As a result, money is spent on materials that aren't needed, leaving less for demonstrated learning needs.

By utilizing web-based training, organizations can dramatically reduce **facilitator** costs. In addition, the object-oriented approach to training allows organizations to create Internet or Intranet libraries of learning materials which address the specific needs of their business and which can be **reused** without incurring printing and instructor costs for each administration of the program.



iAuthor - Microsoft Internet Explorer



## Benefits of the Object-Oriented Approach


*Click the options below for more information and then click the Next arrow to continue.*

[Overall Control](#)      [On-Demand Training](#)      [Cost Effectiveness](#)


[Instant Updateability](#)      [Learner Customization](#)

One of the **trademarks** of web-based publishing is the **speed** with which the material can be altered and updated.

Since all the material in web-based training is digital, changes can be made and uploaded in minutes, rather than months. Rather than having to wait for the next publication of a textbook to make needed changes, with objects changes can be implemented immediately. This feature is particularly critical for the teaching of skills and concepts in the business world, because objects allow your instruction to move as quickly as your business does.



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## Benefits of the Object-Oriented Approach

*Click the options below for more information and then click the Next arrow to continue.*


[Overall Control](#)      [On-Demand Training](#)      [Cost Effectiveness](#)

[Instant Updateability](#)      [Learner Customization](#)

In traditional classrooms, there are generally some students who find the pace or material too challenging, some who find it too easy, and others who find it to be appropriately presented.

With the object model approach, instructional sequences can be **quickly modified** to meet the level of sophistication of each employee or student as every person has different learning needs and experiences different places of confusion in a learning environment.

By implementing the object model approach (particularly with the addition of pre-assessment), an individualized instructional program can be created for each employee or student to exactly meet the **learning needs** of that individual.



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**Web-based Publishing Systems Make-up**

*Click the options below for more information and then click the Next arrow to continue.*

[Overview](#)      [Development](#)      [Publishing Process](#)

Effectively designed systems for creating web-based training combine a sophisticated object model with a set of advanced Internet applications to enable web-based publishing on an anytime, anywhere basis.

These authoring systems are housed at a Web site and anyone creating training materials within the system simply logs into that site with a pre-arranged user name and password and begins their work. Once the materials are created, they are housed in a database that is linked with the Web site, so anyone working on a given program can log into the site and see exactly what has been created and complete their portion of the task.

custom - graphic of globe with the word Writers or word Artists on Madrid, the word Subject Matter E: Dublin, and the word Project Manager on New Yo the places connected by lines, like flight routes.

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**Web-based Publishing Systems Make-up**

*Click the options below for more information and then click the Next arrow to continue.*

[Overview](#)      [Development](#)      [Publishing Process](#)

Web-based authoring systems that utilize the object-oriented model use carefully constructed digital objects to assemble publications. Each of these objects contains specific digital content that is self-sufficient and independent. This enables objects to be assembled and used in a variety of training programs, as well as to serve as a resource in a corporate digital object repository or library.

In other words, once the object is developed, an organization can use the same object over and over again. In addition, organizations can do so in a variety of instructional sequences.

```

graph TD
    A[Object-Oriented Web-based Authoring System] --> B[Marketing Objects]
    A --> C[Assessment Objects]
    B --> D[Learning Objects]
    B --> E[Content Objects]
    C --> F[Transition Objects]
    C --> G[Database Objects]
  
```

Navigation icons: Home, Back, Forward, Stop

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**Web-based Publishing Systems Make-up**

*Click the options below for more information and then click the Next arrow to continue.*

[Overview](#)      [Development](#)      [Publishing Process](#)

The objects created using authoring software are easily tracked and monitored at every stage of the publishing process. This makes managing a publication less costly to the organization because errors or slowdowns can be caught immediately, rather than after a publication comes back from a printer with a 10,000 print run and an error is discovered.

In addition, web-based publications are easier to maintain, as all communication, research, and background material used in constructing the publication is stored in the workspace with the publication. This method makes it easy for organizations to go back into a publication months or years later and update it.



The screenshot shows the iAuthor software interface. On the left, there are buttons for 'Publish Editor', 'outline', and 'Page Editor'. On the right, a file explorer window is open, showing a tree view of a workspace. The tree view includes a folder 'System 1.1' containing sub-items: 'System 1.1\_System', 'Messages', 'Schedule', 'The Project Team', and 'Research'. The main menu at the top includes 'File', 'Edit', 'View', 'Insert', 'Actions', and 'Help'.

⏪ ⏩ ⏴ ⏵

**iAuthor - Microsoft Internet Explorer**

**Web-based Publishing Systems**

*Read the question and then select the correct answer. Click Submit to have your answer evaluated and then click the Next arrow to continue.*

**Why are web-based publishing systems easier for organizations to maintain than other types of publishing systems?**

There are fewer steps involved with web-based authoring systems, therefore saving an organization time when it comes to maintaining the system.


All communication, research, and background material used in building a web-based publication is stored in the work space with the publication.

Web-based authoring systems use less complex construction methods, but take more time to create.

Web-based authoring systems are not designed to be changed or altered in any way.

⏪ ⏩ ⏴ ⏵ **Submit**

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## Reasons For Using Web-Based Authoring Systems

*Click the options below for more information and then click the Next arrow to continue.*


[Overview](#)      [Cooperative Learning](#)      [System Construction](#)

In today's digital economy, training employees, students, and/or external customers is more critical than ever. Today's worker must be a knowledge worker, and must keep pace with a constantly growing volume of product and industry information. To create training materials with web-based authoring systems, organizations look for efficiency, effectiveness, and productivity improvements.

The web-based authoring system market is loaded with new course authoring products and distance delivery systems that promise to electrify an organization's training program overnight, in some cases, for very little in the way of capital outlay. Organizations need to ask themselves which web-based authoring system fits their unique instructional needs and technology infrastructure, at a price and learning curve that their training division can afford.



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## Reasons For Using Web-Based Authoring Systems

*Click the options below for more information and then click the Next arrow to continue.*


[Overview](#)      [Cooperative Learning](#)      [System Construction](#)

The goal of any web-based authoring system must be to provide employees and trainers with a **cooperative learning atmosphere**, where the students or employees can share their experiences and trainers can guide them in their learning.

Interactivity is a key issue in both conventional and web-based training. And, organizations should keep in mind that student interest in the learning process is drastically reduced when the level of interactivity is low. Therefore, in order for a web-based publishing system to be effective, all the objects in the system must be designed to be delivered over the Internet, using standard browser configurations.



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## Reasons For Using Web-Based Authoring Systems

*Click the options below for more information and then click the Next arrow to continue.*


[Overview](#)      [Cooperative Learning](#)      [System Construction](#)

To create effective web-based training courses, the objects in the web-based authoring system must be **encapsulated**. This means that each object has to contain all the information and scripts it needs to carry out a specific function, both in terms of the content as well as the way it functions technologically. In other words, in order to be effective every object must exist on its own, separated from anything else, and continue to operate correctly and make logical sense.

Objects are the actual **building blocks** used to construct larger information structures on the Internet, such as Web sites, courseware, research, reports, marketing publications, and e-libraries. This process is known as **molecular construction**. The objects themselves are built from a combination of data files such as [HTML](#), [DHTML](#), [XML](#), [JavaScript](#), graphics, and [executable files](#). These data files can be thought of as the atoms that make up a molecule.




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## Objects and Web-based Authoring Systems

*Read the question and then type in the correct answer in the box provided. Click Submit to have your answer evaluated and then click the Next arrow to continue.*

Objects are the \_\_\_\_\_ which can be used to construct larger information structures on the Internet, such as Web sites, courseware, research, reports, marketing publications, and e-libraries.

 [Submit](#)

**Summary**

*Read the information below and then click the Next arrow to continue.*

As you have learned, some of the key benefits of object-based training are **independence of teaching and learning with respect to time and space**. They enable learning content to be created as independent 'learning objects' which can be tagged and managed in a repository and assembled into learning modules or courses as needed. In addition, web-based authoring systems demand encapsulation, which means that every object in the system contains all the information and scripts it needs to carry out a specific function, both in terms of the content as well as the way it functions technologically.

The digital age has brought an unprecedented pace of change to most organizations. To survive in this rapidly changing environment, organizations must remain flexible, and part of that flexibility lies in adapting corporate training to the changing needs of business. One of the keys to achieving this level of flexibility is the use of the object-oriented model in training courseware.

Navigation icons: back, forward, home, search.

### LO 3: Learning Objects

**Overview**

*Read the information below then click the Next arrow to continue.*

One of the key challenges of creating online courses is recreating the rich, personal interaction that is often found in face-to-face learning. One of the ways to provide a viable means of web-based instruction is through the use of learning objects. The hallmark of learning objects is their ability to be easily stored, searched for, and reused in a learning system.

Learning objects are independent and reusable digital objects that provide instruction on a discrete learning objective. In addition, learning objects are interactive in nature and are capable of interacting with both the learner and a Learning Management System (LMS) using an industry standard.

**Learning objects must meet the following criteria:**

- provide instruction
- be interactive in nature
- be self-sufficient
- be re-sequenceable
- be encapsulated
- be tagged with metadata
- be valid

Navigation icons: back, forward, home, search.

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**Learning Objects Must Provide Instruction**

*Click the options below for more information and then click the Next arrow to continue.*

[Overview](#)      [Appropriately Leveled](#)      [Meaningful Interaction](#)

**Continuous Feedback**

One of the best ways to deliver educational or training materials efficiently and with ease of reuse is through the use of learning objects. Not every object of information that a person might learn from is a learning object. A learning object is characterized by instruction, rather than just a presentation of information. To qualify as instructional, the material must meet several criteria.



*Click on the other options to learn more about these qualifications.*

Navigation icons: Home, Back, Forward, Stop

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**Learning Objects Must Provide Instruction**

*Click the options below for more information and then click the Next arrow to continue.*

[Overview](#)      [Appropriately Leveled](#)      [Meaningful Interaction](#)

**Continuous Feedback**

In order for Web-based training materials to be effective, they must be **appropriately leveled**. In other words, technical materials being presented to employees without much technology experience would differ greatly from materials presented in a training class to employees with extensive technology experience.

Therefore, in order to ensure that training materials are appropriately leveled, organizations must not only be able to identify the target audience for the training materials being presented, they must ensure that the materials are flexible, and easy to implement and use for the audience being targeted.

To provide effective instruction, a learning object must:

- be very easy to understand
- be appropriately leveled
- be very challenging

Submit

Navigation icons: Home, Back, Forward, Stop

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## Learning Objects Must Provide Instruction

*Click the options below for more information and then click the Next arrow to continue.*

[Overview](#)      [Appropriately Leveled](#)      [Meaningful Interaction](#)

**Continuous Feedback**

**Interaction** is something that engages the learner with the material. Therefore, not every element of information that a person might learn from is considered a learning object as instruction, rather than simply a presentation of information characterizes learning objects.

*For example:* Simply clicking on an arrow to go to the next page does not qualify as meaningful interaction. But, a learning object that instructs the learner to click on options within the learning object to learn more about a topic would be considered meaningful interaction.

Do you like survey questions as a way to engage students?

Yes  
 No

Submit

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## Learning Objects Must Provide Instruction

*Click the options below for more information and then click the Next arrow to continue.*

[Overview](#)      [Appropriately Leveled](#)      [Meaningful Interaction](#)

**Continuous Feedback**

Effective learning objects incorporate mechanisms that allow the learner to gauge whether they actually comprehend the information being taught. **Feedback** can be as simple as feedback on a test question (whether the learner got it right or wrong), as complex as a detailed progress report over a sequence of instruction.


Practice questions are an aid to learning, not an elimination process. Therefore vague and confusing questions should not be asked. Further, feedback on practice questions should explain why the correct answer is right and why the incorrect answer(s) is/are wrong. Feedback should aid the learning process.

An object, as defined by the iAuthor system, includes the following properties:

- easily deliverable, highly reusable, broad-reaching building block
- easily deliverable, highly reusable, Web-based building block
- Web-based, highly reusable, easily tagged building block

Correct. An object is a Web-based, highly reusable, easily tagged building block.

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## Learning Object Requirements


*Click the options below for more information and then click the Next arrow to continue.*

[Overview](#)      [Interactive](#)      [Self-Sufficient](#)


[Resequenced](#)      [Contain Metadata](#)      [Valid](#)

The old truism *Knowledge is Power* has never had more meaning than it does in today's digital economy. The need for organizations to share knowledge and information among employees has resulted in training programs designed to fit the needs of students in terms of time, career goals, levels of preparation, and learning styles. In order for organizations to provide efficient training, the training programs must be designed so that training departments can easily administer, update and configure them.

In order to create effective training programs, the learning objects that make up these programs must meet several requirements. Therefore, in addition to being instructional, intuitive and conducive to learning, learning objects must also be: interactive in nature, self sufficient, and able to be resequenced, contain metadata, and be valid.



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## Learning Object Requirements

*Click the options below for more information and then click the Next arrow to continue.*


[Overview](#)      [Interactive](#)      [Self-Sufficient](#)

[Resequenced](#)      [Contain Metadata](#)      [Valid](#)


Learning objects must be interactive in nature. Interactive learning is learning that engages the learner, through various media such as video, sound, graphics, animation, and text. The key to interactive learning is to ensure that the actual learning process engages the learner into the learning experience and encourages them to participate in the process.

In order to be effective, interactive learning must:

- be active rather than passive
- incorporate a variety of media, such as sound, visuals and movement
- encourage the learner to participate in the learning process and stay with the program once they've started it
- provide the learner with opportunities for engagement, interest, motivation, and retention



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## Learning Object Requirements


*Click the options below for more information and then click the Next arrow to continue.*

[Overview](#)      [Interactive](#)      [Self-Sufficient](#)


[Resequenced](#)      [Contain Metadata](#)      [Valid](#)

Learning objects must be complete and independent instructional units that provide instruction on a single idea or concept. In other words, the content of each learning object must be self-sufficient or **self-contained**. Therefore, learning objects must not depend on any previous knowledge or instruction, or set up a requirement for later instruction.

*For example:* If an organization is presenting learning object XX in a specific course, that learning object cannot refer back to learning object ZZ in another course because all learning objects must be self-contained and provide the learner with all the information they need without referring to another topic or learning object. In other words, if you took learning object XX out of a particular instructional sequence and put it in another sequence it would cease to make sense to the learner.



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## Learning Object Requirements

*Click the options below for more information and then click the Next arrow to continue.*


[Overview](#)      [Interactive](#)      [Self-Sufficient](#)

[Resequenced](#)      [Contain Metadata](#)      [Valid](#)


Learning objects can be sequenced in any order and still provide valid instruction. This is the capability that makes learning objects so powerful.

The **resequenceability** of learning objects makes it possible to create a library or repository of learning objects, since they can be put into the library regardless of sequence. Learning objects can then be retrieved from the library one at a time or in any number of collections.

*For example:* An organization can have a learning object about using email in a topic about communications technologies. Once this is done, the organization can take the learning object about using email out of the topic on communications technologies and use it in another course easily and without a loss of meaning. In other words, the organization can collect any group of learning objects and assemble them into a curriculum sequence that fits their unique needs.



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## Learning Object Requirements


*Click the options below for more information and then click the Next arrow to continue.*

[Overview](#)      [Interactive](#)      [Self-Sufficient](#)


[Resequenced](#)      [Contain Metadata](#)      [Valid](#)

To be used effectively, learning objects must be tagged, or identified. In order to tag a learning object, keywords and instructional objectives are created which describe the object. By using this approach, the learning object can be found by using either the keywords or the objectives as search criteria in a search interface.

All objects have *metadata* associated with them. Metadata is data that describes the object in a standard way. Metadata is critical to allowing an object to be found by web-based search engines. In some cases, metadata is tied to a specific standard. In other cases, the metadata is created in a proprietary format, particularly in cases where no metadata standard exists.



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## Learning Object Requirements


*Click the options below for more information and then click the Next arrow to continue.*

[Overview](#)      [Interactive](#)      [Self-Sufficient](#)


[Resequenced](#)      [Contain Metadata](#)      [Valid](#)

The content and instructional logic presented in a learning object must provide sufficient instruction on a specific skill for the intended student to meet real-world performance criteria. If a significant number of students use the learning object but cannot demonstrate knowledge of the skills being targeted, then it is not a valid learning object.

The validation of a learning object must come from formal analysis of performance in a real-world implementation. Until such validation is complete, the material may qualify as an instructional object, but would not be considered a learning object until it had been demonstrated to lead to learning

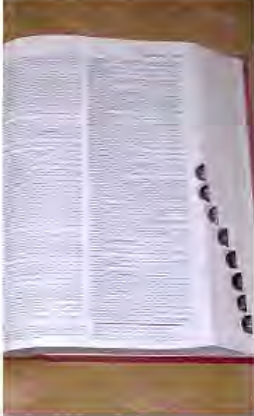


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### Other Learning Object Considerations

*Read the information below, then click the Next arrow to continue.*




Because the online learning environment does not provide the luxury of physically meeting with the class to discuss the meaning of specific terms related to course content, it is helpful for learning objects to be developed with a glossary of terms.

This glossary should be designed so that it can be easily accessed by the learner should h/she require any clarification. In addition, because trainers do not always know who the learner is or where he is from (i.e. state, country, etc.), all glossary terms should be explicitly defined without making any assumptions.



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### Learning Object Requirements


*Read the question and then select the correct answer. Click Submit to have your answer evaluated and then click the Next arrow to continue.*

**Meaningful Interaction:**

- engages the trainer with the material in a learning object
- engages the learner with the material in a learning object
- allows the learner to click a button to go to the next screen in a learning object
- is a method of asking test questions that provide feedback in the form of 'that is correct' or 'that is incorrect'



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## Encapsulation

*Click the options below for more information and then click the Next arrow to continue.*

[Overview](#)

[Content](#)

[Assessment](#)

[Navigation](#)

[Application](#)


[Support](#)

[Data Collection](#)


[Programming](#)

The key to making a learning object work is to package all of the content and functions needed to deliver and track the information directly inside the object itself. This is known as **encapsulation**. For a learning object to function, no matter where it is put in any instructional sequence, the following elements must be encapsulated:

- content
- assessment
- navigation
- application
- support
- data collection
- programming



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## Encapsulation

*Click the options below for more information and then click the Next arrow to continue.*

[Overview](#)

[Content](#)

[Assessment](#)

[Navigation](#)

[Application](#)


[Support](#)

[Data Collection](#)


[Programming](#)

Content in a learning object must not require experience with a prior learning object in the instructional sequence. This means that a learning object cannot refer to places, people, events, or definitions from previous learning objects. If it did, it would become invalid if it was removed from that instructional sequence and placed in another one that did not contain those other learning objects. In fact, it would even become invalid if that particular instructional sequence was rearranged.

Similarly, a learning object cannot make references to upcoming content or events if that content is part of another learning object.




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## Encapsulation

*Click the options below for more information and then click the Next arrow to continue.*

<a href="#">Overview</a>	All assessments, which are used for decision-making purposes within a learning object must be part of the learning object itself.
<a href="#">Content</a>	
<a href="#">Assessment</a>	<i>For example:</i> If a quiz is used to branch students to previous content or additional content, that content must reside within the learning object itself. It cannot branch to other learning objects, since those objects may not exist in any other given curriculum sequence.
<a href="#">Navigation</a>	
<a href="#">Application</a>	It should be noted that this requirement does not restrict the writer from creating either course-level or module-level assessments. An assessment must be part of the learning object itself only if it is used for branching within the object.
<a href="#">Support</a>	
<a href="#">Data Collection</a>	
<a href="#">Programming</a>	




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## Encapsulation

*Click the options below for more information and then click the Next arrow to continue.*

<a href="#">Overview</a>	All navigation within a learning object must be internal to it. A learning object cannot navigate the student outside of itself. If it did, it would not be independent of the object it navigated to.
<a href="#">Content</a>	
<a href="#">Assessment</a>	This means that all hyperlinks and other types of navigation must be constrained to the Web pages that make up the learning object. A learning object cannot link to external Web sites or other learning objects.
<a href="#">Navigation</a>	
<a href="#">Application</a>	The only exception is that on the last page of a learning object, the learning object can navigate to the next learning object in the sequence that it is contained within.
<a href="#">Support</a>	
<a href="#">Data Collection</a>	
<a href="#">Programming</a>	




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## Encapsulation

*Click the options below for more information and then click the Next arrow to continue.*

<a href="#">Overview</a>	A learning object cannot require any additional application software that necessitates a link outside itself.
<a href="#">Content</a>	
<a href="#">Assessment</a>	<i>For example:</i> No learning object can require that the learner hyperlink to a page to download a plug-in or some other software component.
<a href="#">Navigation</a>	
<a href="#">Application</a>	Similarly, a learning object cannot require that any software component be previously installed on the user's hard-drive other than those provided by the operating system and the browser.
<a href="#">Support</a>	
<a href="#">Data Collection</a>	
<a href="#">Programming</a>	



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## Encapsulation

*Click the options below for more information and then click the Next arrow to continue.*

<a href="#">Overview</a>	All information needed to provide support for a learning object must be part of that object.
<a href="#">Content</a>	
<a href="#">Assessment</a>	<i>For example:</i> A learning object cannot reference another object that provides help or other support material. This means that all necessary glossaries, help files, or background information necessary to understand the learning object must be contained within that object, rather than only occurring elsewhere in the instructional sequence.
<a href="#">Navigation</a>	
<a href="#">Application</a>	
<a href="#">Support</a>	One approach to this dilemma is the use of hotwords. Terms, which may be unfamiliar to some learners can be defined using hotwords. Hotwords and their definitions are embedded in the content and are easily retrieved by clicking on the word. However, for learners who already know the definition of a particular word, pace can be maintained as they will not need to click on the word to understand its meaning.
<a href="#">Data Collection</a>	
<a href="#">Programming</a>	




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## Encapsulation

*Click the options below for more information and then click the Next arrow to continue.*

<a href="#">Overview</a>	A learning object may collect data for purposes other than assessment, but this data collection must be directly tied to the object from which the data is being collected.
<a href="#">Content</a>	
<a href="#">Assessment</a>	<i>For example:</i> A learning object may collect survey information from the user in order to learn how to improve the object. Navigation data may also be collected and stored, either in cookies or in a database, to maintain state during navigation.
<a href="#">Navigation</a>	
<a href="#">Application</a>	
<a href="#">Support</a>	
<a href="#">Data Collection</a>	
<a href="#">Programming</a>	




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## Encapsulation

*Click the options below for more information and then click the Next arrow to continue.*

<a href="#">Overview</a>	Every learning object contains programming. Therefore, the programming logic must be encapsulated within the learning object.
<a href="#">Content</a>	
<a href="#">Assessment</a>	<i>For example:</i> All variables, whether local or global, must be declared within the learning object. Similarly, a learning object cannot call sub-routines or functions that are defined in other learning objects.
<a href="#">Navigation</a>	
<a href="#">Application</a>	
<a href="#">Support</a>	
<a href="#">Data Collection</a>	
<a href="#">Programming</a>	




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## Size Doesn't Matter


*Read the information below and then click the Next arrow to continue.*




An object can vary greatly in size, from a few Web pages to more than 30. The best guideline is to make it as small as possible, while still providing complete instruction on a key concept or skill.

Another guideline is to look at the nature of the knowledge. The more complicated the knowledge being taught, and the more background information necessary, the larger it will be.

In general, however, one page is too little to communicate any concept adequately to teach it, while 50 pages is probably too much, and probably means more than one concept is being addressed, in which case it should be broken out into a different learning object.




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## Background Information

*Read the information below and then click the Next arrow to continue.*




How much prerequisite knowledge should you package into a learning object? There is no one answer, but there are a few guidelines:

- Determine who your audience is and only include background information which that audience would need in order to understand the content presented in the learning object.
- Only include prerequisite knowledge on the specific concept being taught in the learning object. It is not necessary to include background information on more general or related concepts.




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### Size Doesn't Matter

*Read the question and then type the correct answer in the box provided. Click Submit to have your answer evaluated and then click the Next arrow to continue.*

When creating learning objects, the best guideline is to make it as \_\_\_\_\_ as possible, while still providing complete instruction on a key concept or skill.



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### Ready, Aim, Fire


*Read the information below and then click the Next arrow to continue.*

What do you do if the content you want to present is sequential in nature? This is a common problem, as a lot of information in the world is inherently sequential.


*For example:* In shooting a water pistol, you would not want to rearrange the steps of 'Ready, Aim, Fire,' as the process would no longer make sense.

There are two ways to handle this situation. One solution is to describe all the steps in a single object. The other approach is to use naming conventions that communicate what step in the process each object describes. In the water pistol example, the objects could be named -- Step 1: Getting Ready to Shoot; Step 2: Aiming; Step 3: Firing.

By carefully naming the objects, the risk that they would be rearranged in an illogical manner is greatly reduced.



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## Food for Thought

*Click the options below for more information and then click the Next arrow to continue.*

[Question 1: Links](#)      [Question 2: Technology](#)      [Question 3: Background](#)

[Question 4: Support](#)      [Question 5: Connection](#)      [Answers](#)




*Read each question and determine whether the scenario would improve the learning object in question. Answers can be found in option 6: Answers.*

Suppose you were required to click on a link from this page to a Web site, view the material on it, then return to this page and answer a series of thoughtful questions about whether or not the Web site you viewed embodied the qualities of a good learning object.

*Would that make this a better learning object?*

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## Food for Thought

*Click the options below for more information and then click the Next arrow to continue.*

[Question 1: Links](#)      [Question 2: Technology](#)      [Question 3: Background](#)

[Question 4: Support](#)      [Question 5: Connection](#)      [Answers](#)




Suppose this learning object was filled with interactive technology for a real-time chat with your fellow students. The first screen of the learning object states:

Before you begin, go to the RandomDotCom.com company home page and download the GreatChat software to your computer. Then proceed with the learning object.

*Would that make this a better learning object?*

⏪ ⏩ ⏴ ⏵

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## Food for Thought

*Click the options below for more information and then click the Next arrow to continue.*


[Question 1: Links](#)      [Question 2: Technology](#)      [Question 3: Background](#)

[Question 4: Support](#)      [Question 5: Connection](#)      [Answers](#)




This learning object assumes that you know some information about learning, instruction, and presentation of learning materials. Suppose that instead, the learning object began with a 10 screen introduction to the history of instruction, to familiarize you with what it is before discussing this new form of education.

*What that make this a better learning object?*



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## Food for Thought

*Click the options below for more information and then click the Next arrow to continue.*


[Question 1: Links](#)      [Question 2: Technology](#)      [Question 3: Background](#)

[Question 4: Support](#)      [Question 5: Connection](#)      [Answers](#)




There are some terms mentioned in this learning object with which you may be unfamiliar. Imagine that you were told midway through the learning object that if you need an explanation for any term, you should go to Learning Object #XX: Definitions to find all the support you need.

*Would that make this a better learning object?*



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## Food for Thought

*Click the options below for more information and then click the Next arrow to continue.*

[Question 1: Links](#)      [Question 2: Technology](#)      [Question 3: Background](#)

[Question 4: Support](#)      [Question 5: Connection](#)      [Answers](#)


This preview has been approved for all audiences by the Moving Image Association of America.




This is the last page of this learning object. Suppose that to keep you in the flow, this page concludes by saying:

You are going to learn a lot more about learning objects in the material that follows. Stay alert, because you won't want to miss a thing. Pay particular attention to Learning Objects 6 and 7, where you are introduced to the glue that sticks learning objects together in meaningful curricula. See you then!

*Would that make this a better learning object?*



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## Food for Thought

*Click the options below for more information and then click the Next arrow to continue.*


[Question 1: Links](#)      [Question 2: Technology](#)      [Question 3: Background](#)

[Question 4: Support](#)      [Question 5: Connection](#)      [Answers](#)


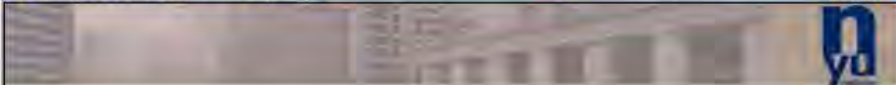


**None** of the practices described in Questions 1-5 would improve this learning object.

- Linking outside a learning object, whether it is for practice (Q1), technology (Q2), or support (Q4), violates the necessary criterion of encapsulation that all learning objects must meet.
- Question 3 provides more background than is necessary for understanding the concepts in this learning object.
- Question 5 describes an instructional sequence that may not reoccur, thus violating the resequenceability criterion of learning objects.



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## Summary

*Read the information below and then click the Next arrow to continue.*

To review, for an information object to qualify as a learning object, it must:

- provide instruction
- be resequenceable
- be self-sufficient
- be encapsulated
- be tagged with metadata
- be valid

In addition, there is no single appropriate size for a learning object, or absolute amount of background information required. Also, certain concepts, which are sequential in nature should be addressed as such in learning objects. Learning objects should accurately represent real-world concepts, but should do so in a consistent and logical manner.

