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Learning objects

**Designing, locating, tagging and
transferring objects**

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**Canadian Association
of Distance Education
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Purpose of presentation

To report on our experiences of participation in Industry Canada's learning objects' pilot in Newfoundland

Presentation plan

**1. Designing objects & locating
objects**

2. Tagging objects

3. Transferring xml records

Conclusions

Designing & locating objects

- Example of web-based module designed as an object
- Overview of 6 objects used in pilot
 - Video objects

Example of an object design

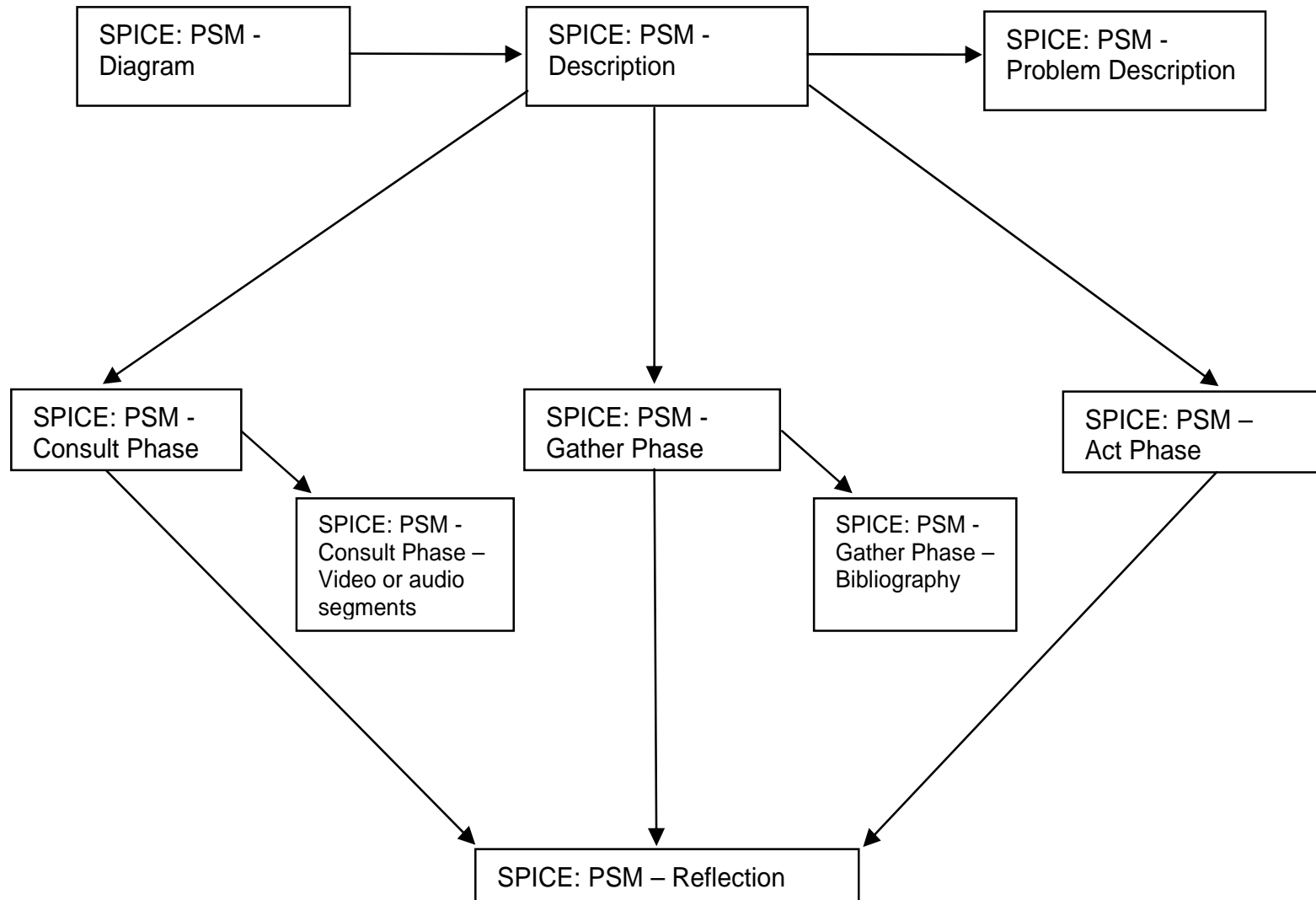
SPICE is a web-based learning module for pre- or in- service practitioners such as teachers, social workers, nurses designed from a learning object perspective



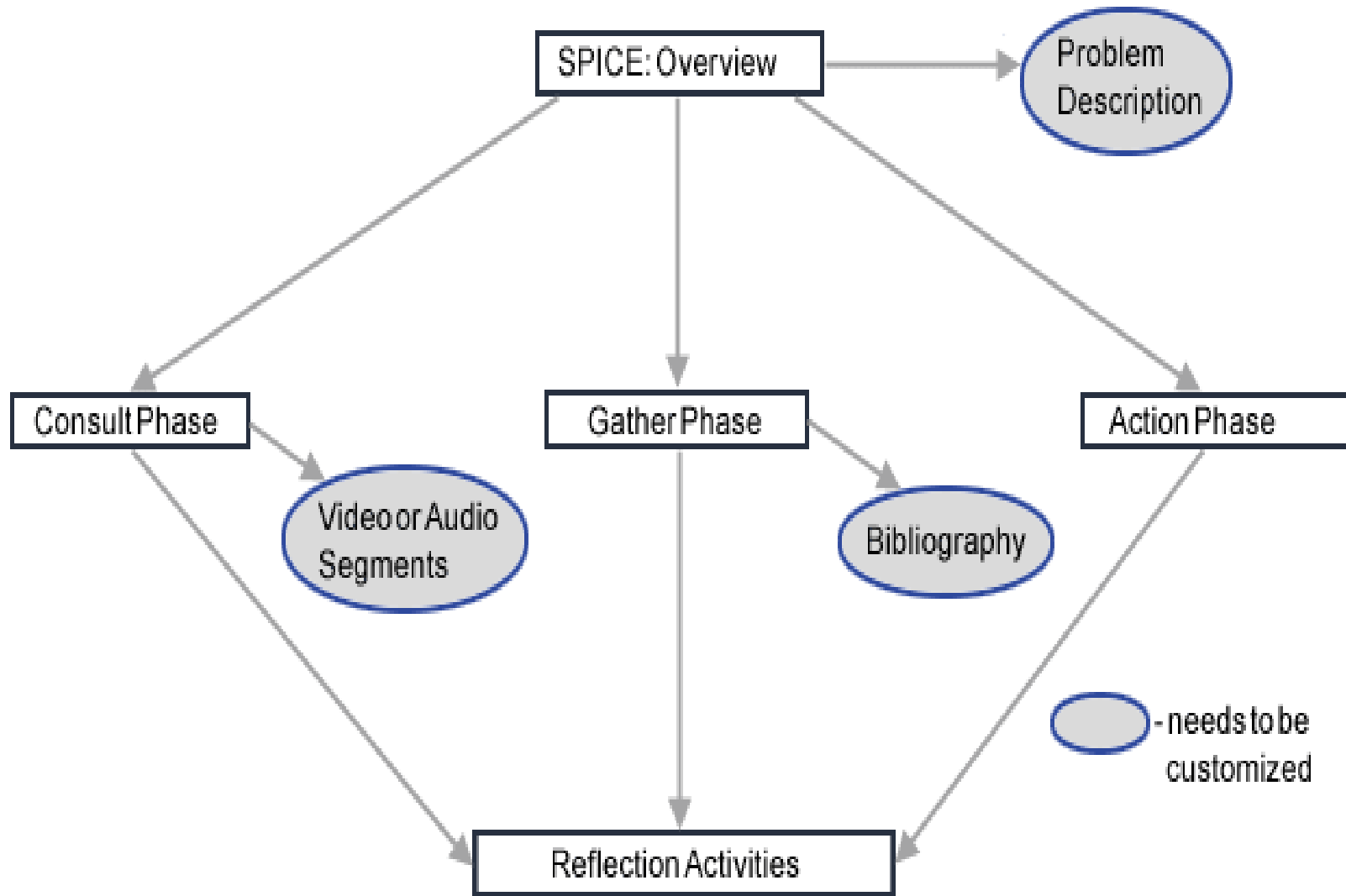
SPICE: Object list

# of objects	Type	Title	Format
1	Diagram	SPICE: Problem Solving Model - Diagram	JPG-Image
1	Description	SPICE: Problem Solving Model – Description	HTML-Web Page
1	Consult Phase	SPICE: Problem Solving Model - Consult Phase	HTML-Web Page
1	Gather Phase	SPICE: Problem Solving Model - Gather Phase	HTML-Web Page
1	Act Phase	SPICE: Problem Solving Model – Act Phase	HTML-Web Page
1	Bibliography	SPICE: Problem Solving Model- Gather Phase - Bibliography	HTML-Web Page
1	Reflection Activity	SPICE: Problem Solving Model - Reflection Activity	HTML-Web Page
1	Problem Description	SPICE: Problem Solving Model – Problem Description	HTML-Web Page
20+	Audio or Video Segments	SPICE: Consult Phase - *.*	Streamed or canned

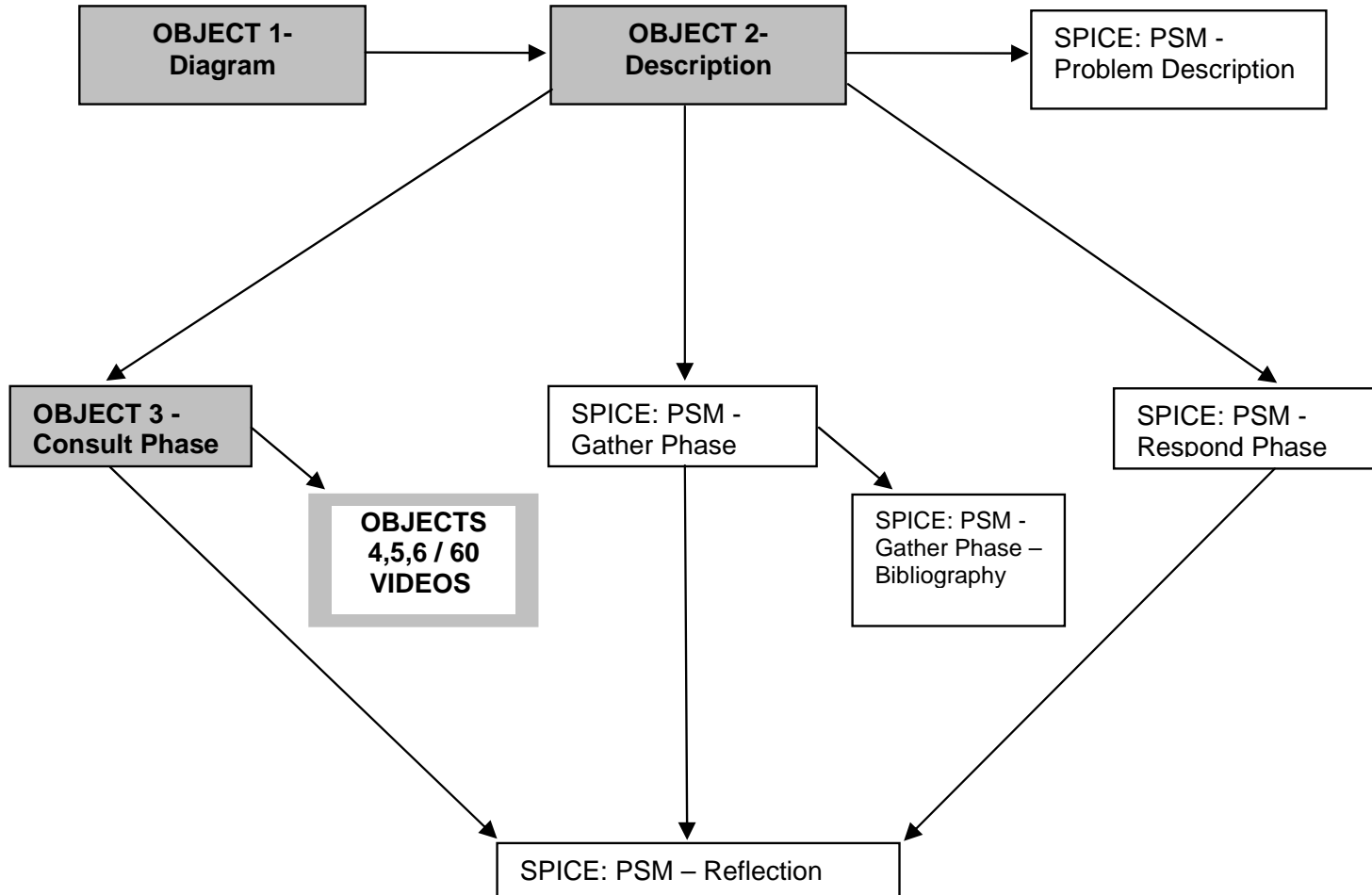
SPICE: Diagram of objects



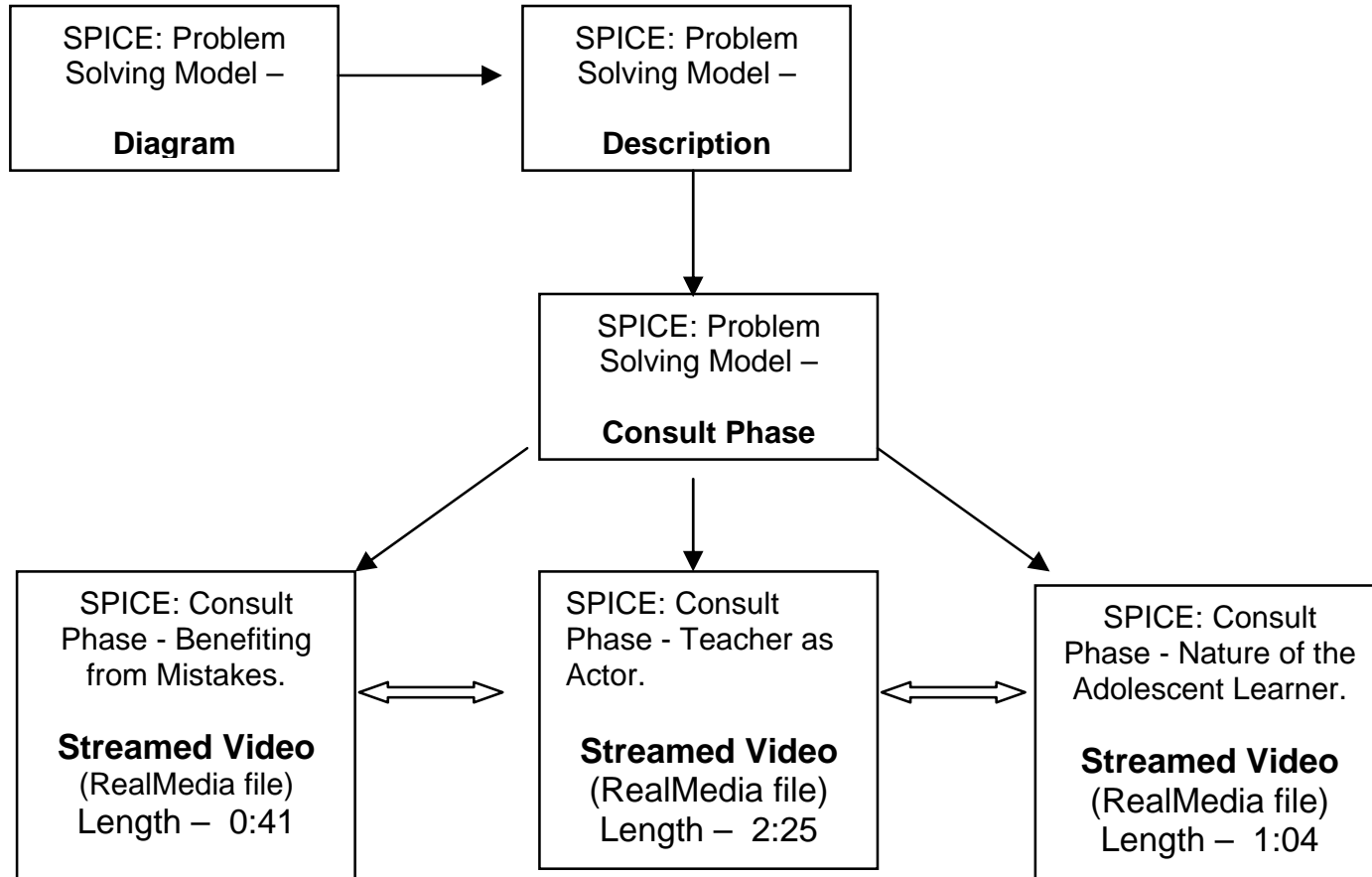
SPICE: Repurposability



6 objects selected for pilot



Summary of 6 objects chosen for pilot



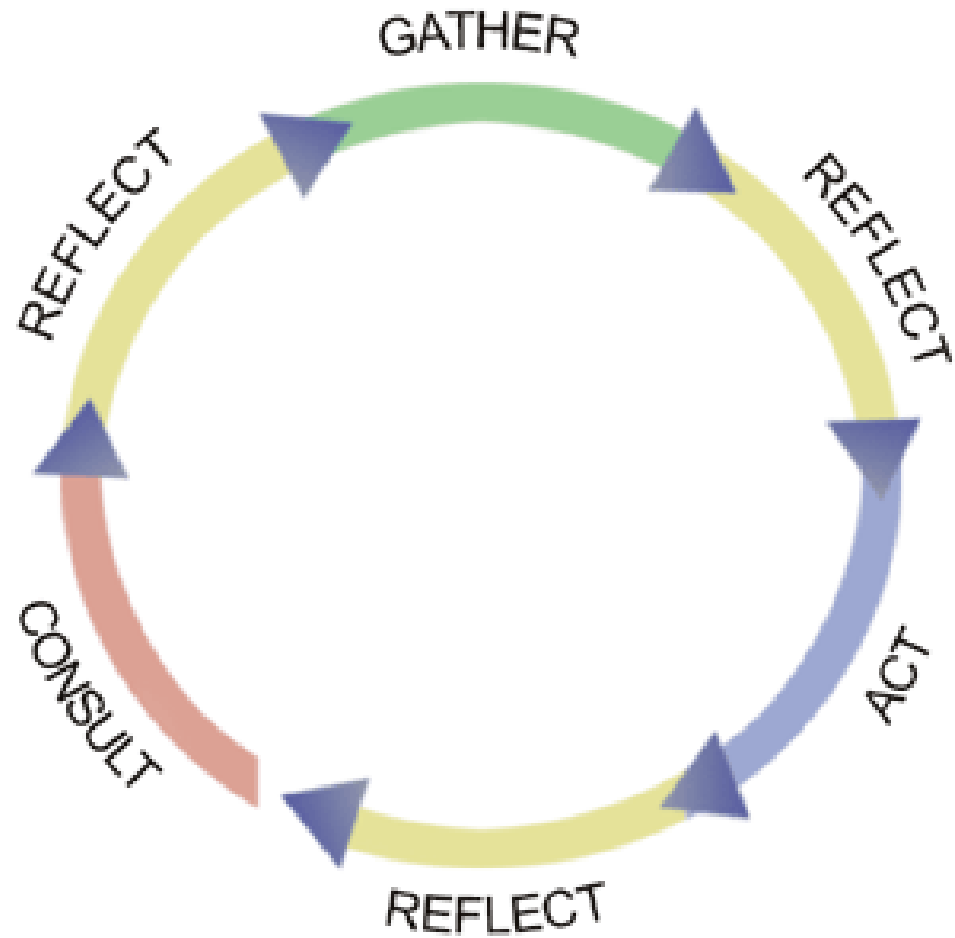
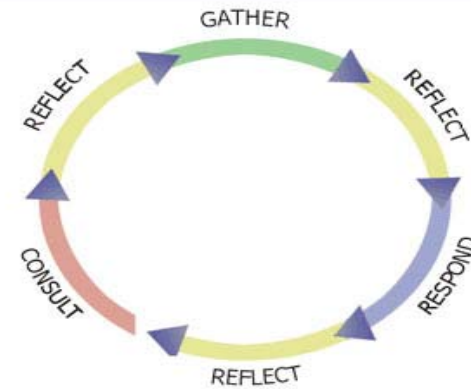


FIGURE 1: SPICE Approach



What makes problems challenging is that they can be messy and so it can be difficult to identify where they begin and end or what causes them. The same problem might manifest itself differently in another place or time. Because problems are so complex, we cannot just objectively apply a body of rules or theoretical knowledge in the hope that we might solve them and make them go away. Instead, we need to take a systematic approach to first understanding the problem followed by consideration of possible responses to the problem.

SPICE provides you with a systematic yet intuitive approach to problem understanding and resolution. The approach, which is outlined in the above diagram, involves a series of activities or steps beginning with consulting, followed by information gathering and ending with responding to the problem. In between each of these steps, you engage in shared reflection with other members of the group.

CONSULT

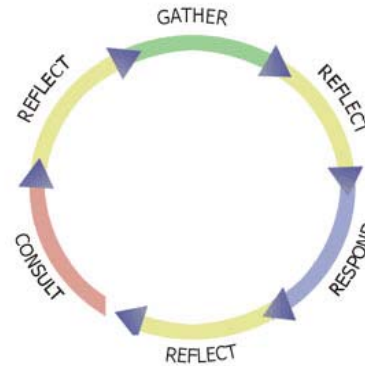
It is natural when one has a problem, be it professional or even personal, to first consult with others. In the workplace, we often consult with colleagues who we think may have some knowledge or experience of this problem. Being able to hear their perspective can often help us understand the problem better by allowing us to appreciate the different ways in which it manifests itself. In this way, we can see which characteristics of the problem might be common with our situation, context or circumstance and which might be different. This is why the SPICE approach to problems begins with consultation.

GATHER

Following consultation, you are invited to move through to the next step in the SPICE approach which is that of gathering information. The gathering information phase of the SPICE approach invites you to become familiar with some of the expert knowledge related to the problem. You can choose a reading provided to you or you can select some other reading which you locate independently. You can then engage in shared reflection to present to others your summary of and reaction to the reading.

RESPOND

Once you have consulted and gathered information then shared and compared perspectives, you will be ready to begin generating some responses to the problem. Your response may take many possible forms and



Phase 1 of the SPICE approach: Consultation

The first phase of the SPICE approach to working with problems in professional practice is that of consultation. This phase is described briefly here below. You can engage in consultation related to the problem in your practice.

It is natural when one has a problem, be it professional or even personal, to first consult with others. In the workplace, we often consult with colleagues who we think may have some knowledge or experience of this problem. Being able to hear their perspective can often help us understand the problem better by allowing us to appreciate the different ways in which it manifests itself. In this way, we can see which characteristics of the problem might be common with our situation, context or circumstance and which might be different. This is why the SPICE approach begins with consultation.

The phase of consultation relies on practical and personal knowledge from the field gained through access to perspectives on the problem by practitioners themselves. The perspectives are designed to provide insight into the multiple ways in which the problem can be experienced and interpreted.

Completion of this phase requires access to customized content directly related to the practice or field of the users of the SPICE approach. If you wish to use this phase of the approach for example as a small unit in a course for teachers of second languages, you will need to prepare in advance some content for this context. This content could consist of perspectives on the problem captured through interviews with practitioners that are subsequently recorded in text, audio or video format for quick and easy perusal.

Following consultation, the SPICE approach invites you to engage in collaborative shared reflection. The reflection activities are described in a separate learning object.

Metadata record from [Careo](#) for learning object video

["SPICE: Consult Phase - Benefiting From Mistakes"](#).

Requires Real Media Player.

Record ID:	598072
	Schema: IMS 1.2.2
	Owner: elizabeth
	Group: guest
	Date Created: 2003-03-07 14:18:11 Etc/GMT
	Date Modified: 2003-03-07 14:18:11 Etc/GMT
	Permissions: 0744
Metadata Summary of Object # 598072	
Title:	SPICE: Consult phase - Benefiting from mistakes
Description:	In this video segment an elementary teacher presents her perspective on the benefits of mistakes in second language learning. To view this video you will need Real Media player installed on your machine. See also: SPICE: Problem Solving Model-Description ; SPICE: Problem Solving Model-Diagram ; SPICE: Problem Solving Model - Consult Phase ; SPICE: : Teacher as Actor ; SPICE:Consult Phase - Nature of the Adolescent . SPICE is an acronym for the learning module Solving Problems in Collaborative Environments. The module as a whole is not presently available as an object.
Format:	Unrecognized format ims (video/rm)

See Also:

- [SPICE: Problem Solving Model - Diagram](#)
- [SPICE: Problem Solving Model - Description](#)
- [SPICE: Problem Solving Model - Consult Phase](#)
- [SPICE: Consult phase - Nature of the Adolescent](#)
- [SPICE: Consult phase - Teacher as Actor](#)

Streamed video segments















SPICE Approach - Microsoft Internet Explorer

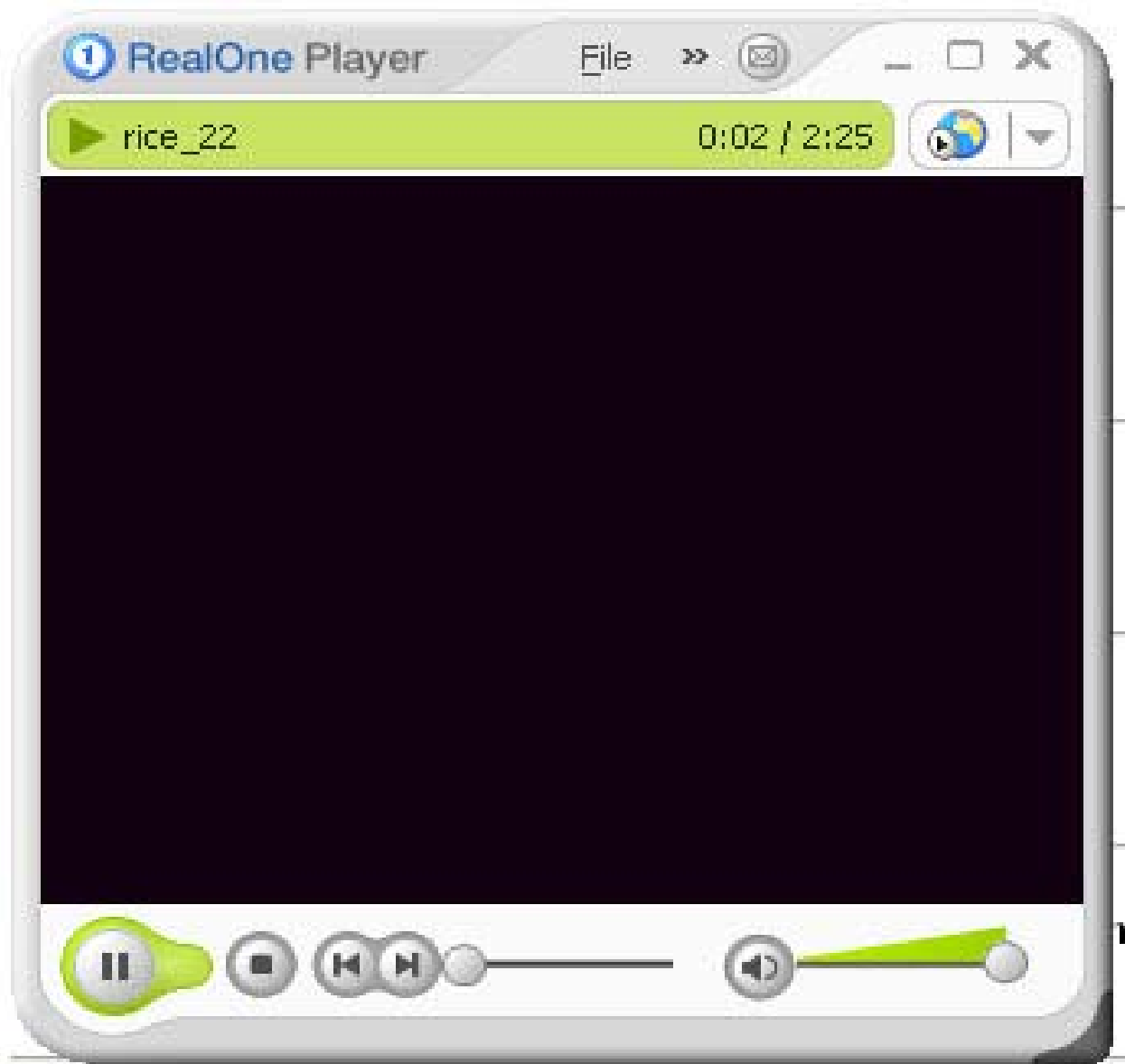
File Edit View Favorites Tools Help

Back Forward Stop Refresh Home Search Favorites Media

Address <D:\videos1.html> Go

CONSULT **SPICE**

	Dealing with Different Levels of Ability		0:50
	The issue of Interlanguage		1:53
	Providing Supports		1:24
	Progressive Use of French		1:59
	Evaluation of Oral French		1:30
	Nature of the Junior High Immersion Student		1:33
	Immersing the Core French Student		0:59



Conclusions: Designing & locating objects

- A repurposable learning object is able to derive meaning from the context of use
- Video objects are highly contextualized & pose challenges to repurposability
- Repurposability of learning modules can be promoted by customizing components

Meta-tagging objects

- CanCore Schema
- Manual tagging using MSWord
- Transfer to XML format using
ALOHA

CanCore Schema



CANCORE INITIATIVE
CanCore Learning Object Metadata

Metadata Guidelines

version 1.1

CanCore Schema

“CanCore is a Canadian implementation of the IEEE educational metadata standard for cataloguing educational learning resources. In its formative years, CanCore was championed by a number of Canarie-funded e-learning projects, notably, POOL, BELLE, CAREO and SAVOIR-NET. CanCore has been incorporated into a number of repositories.”

Griff Richards (Simon Fraser)

CanCore Schema

- Not specifically tailored to tagging in an educational context
 - Language not user-friendly
- Controlled vocabulary necessary but constraining
- Context and community may require flexibility in vocabulary/elements & element groups

Example of manual tagging

1.0 General

1.1 **Identifier:** (Note: Unable to determine Identifier element using CanCore guidelines)

1.2 **Title:** SPICE: Problem Solving Model - Diagram

1.3 Catalogentry

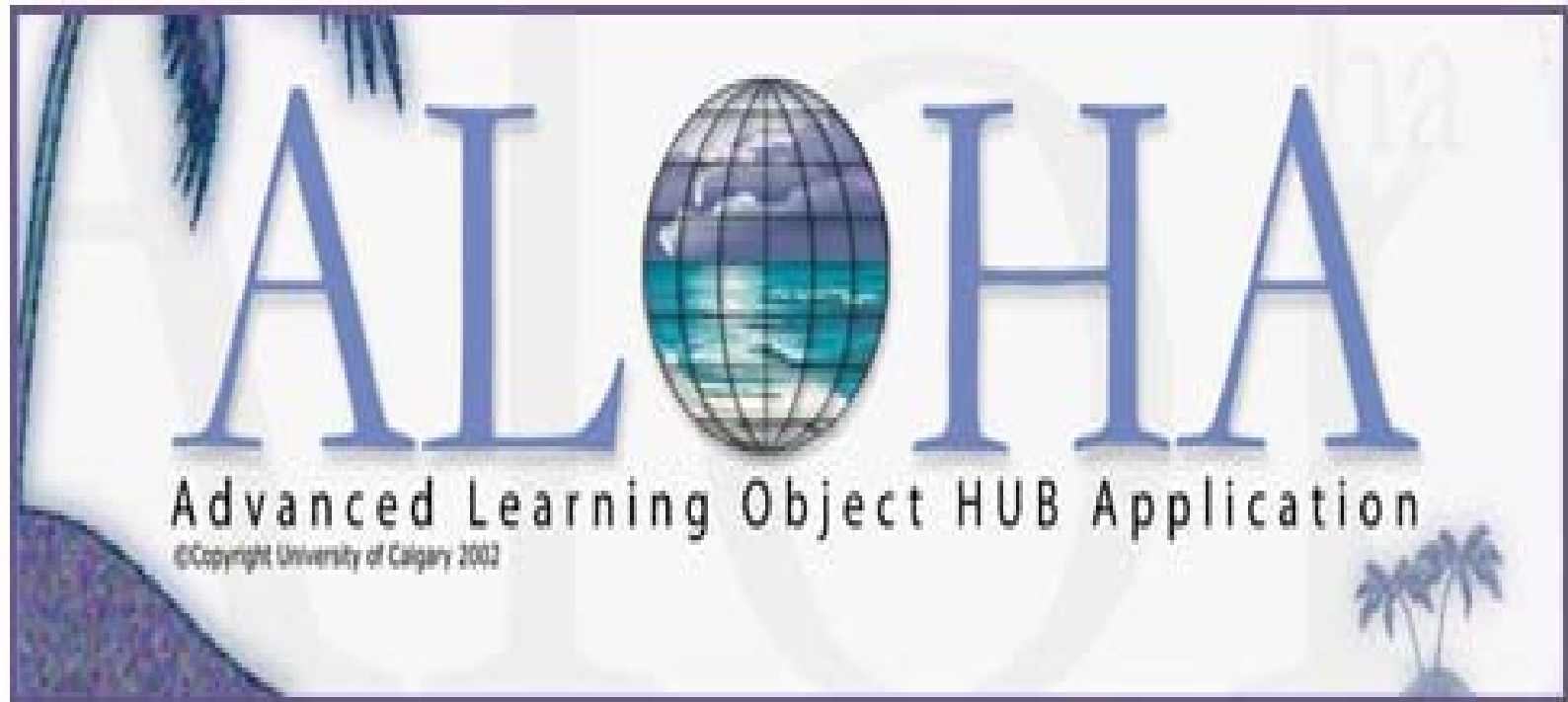
1.3.1 **Catalog:** URL Note: Unable to determine difference between URI and URL

1.3.2 **Entry:**

1.4 **Language:** en

1.5 **Description:** This diagram of a problem solving model includes three phases: consulting, gathering, and responding. In between each of these phases is shared reflection. Potential users of the model include practitioners such as nurses, social workers, engineers and teachers. The model could also be used for problem solving in organizations. See also: SPICE: Problem Solving Model-Description; SPICE: Problem Solving Model - Consult Phase: SPICE: Consult phase - Benefiting from mistakes; SPICE: Consult phase - Teacher as Actor; SPICE: Consult phase - Nature of the Adolescent. SPICE is an acronym for Solving Problems in Collaborative Environments which is a learning module. The module as a whole is not presently available as an object.

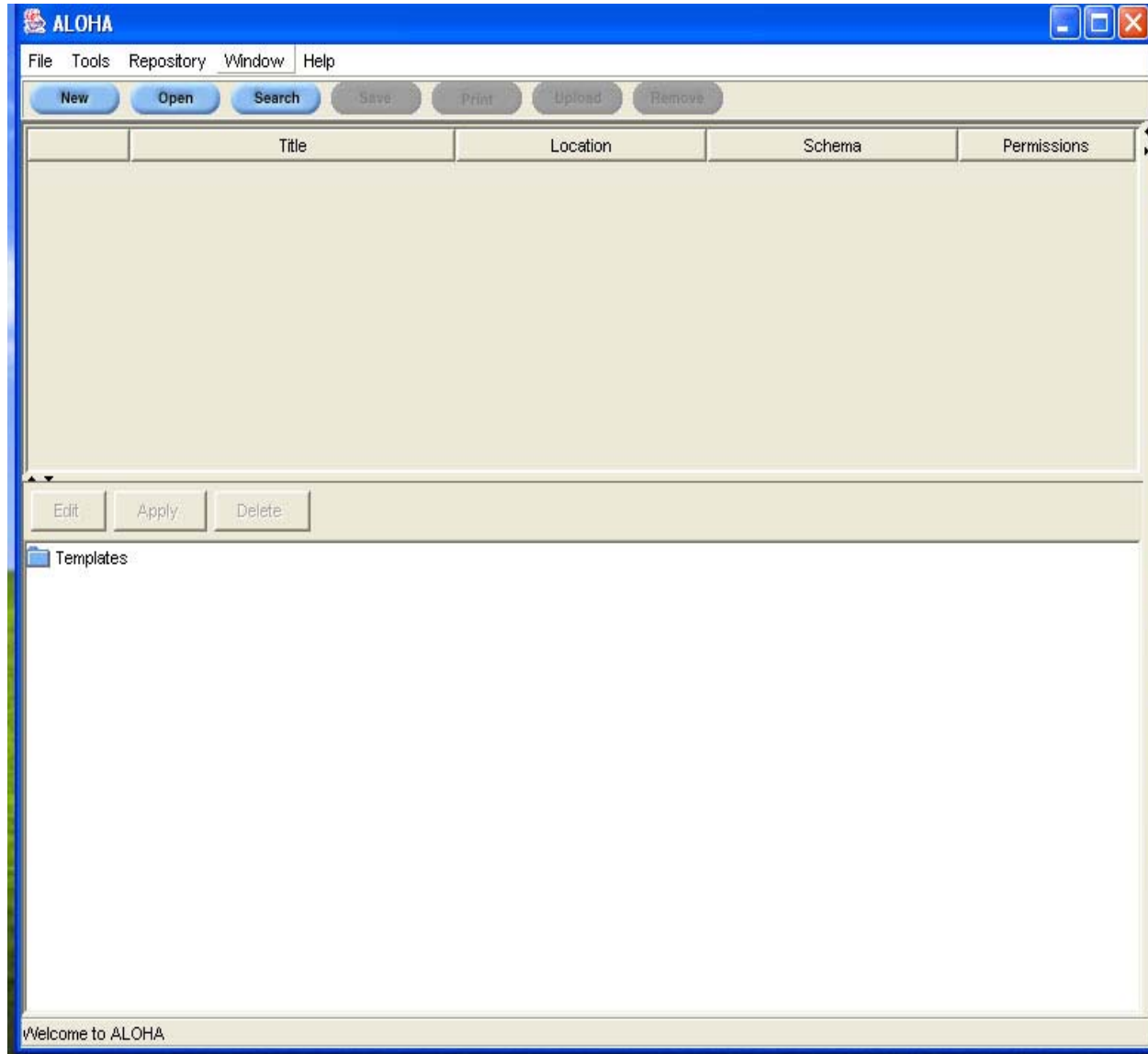
Meta-tagging tools



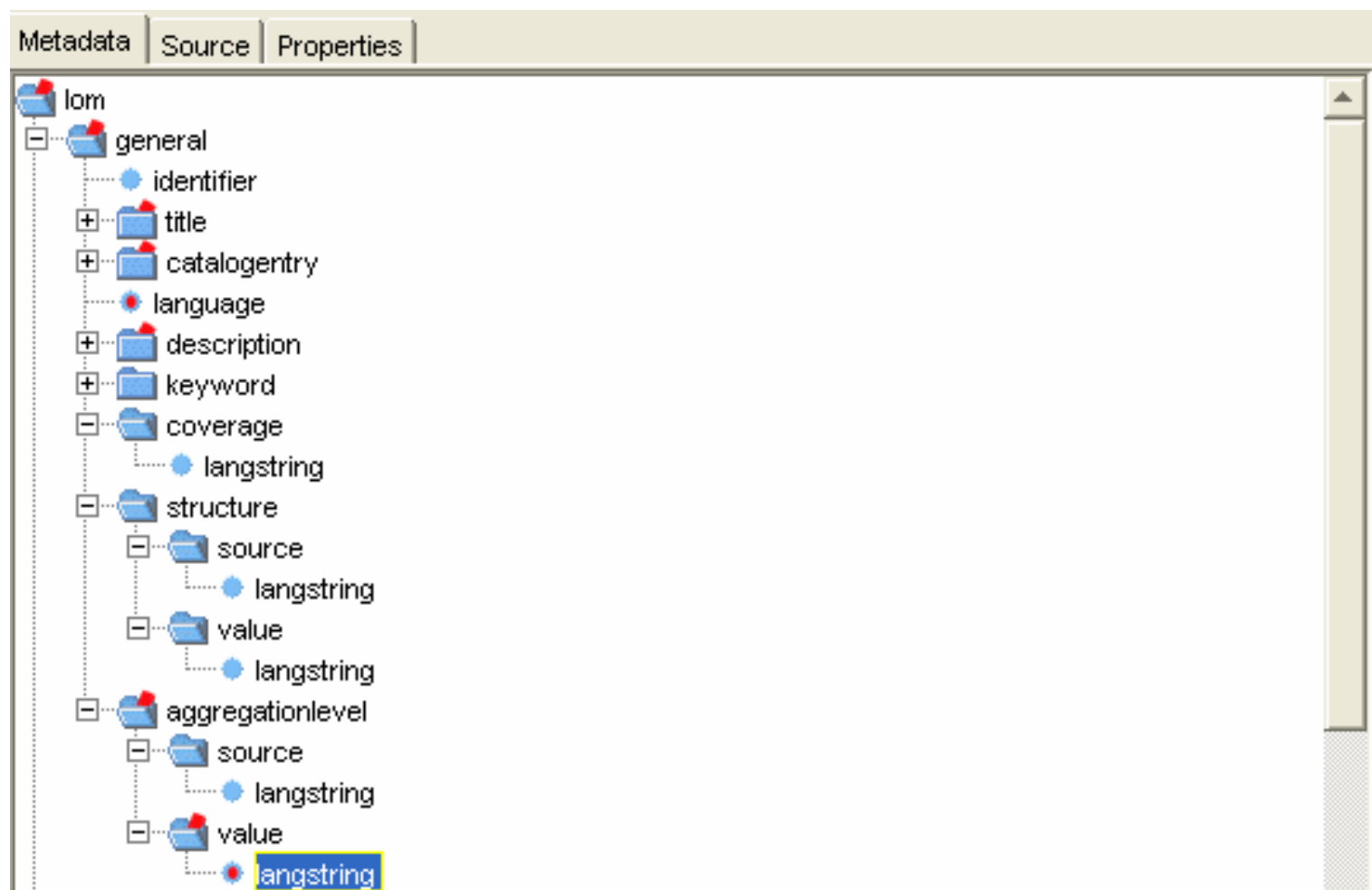
ALOHA metadata mark-up tool

- Alberta (?) Learning Object Hub Application
- A tool to support educational mark-up of objects using XML & a schema
 - Java-based
 - Linked to CAREO web portal

ALOHA interface



ALPHA's IMS Schema



Editing Process

1. Create a new or open a LO in IMS 1.2.2
2. Select it and upload it
3. Edit some metadata (i.e. change the description)
4. Click upload - you should *always* be asked whether you want to overwrite or create a new record
5. Click overwrite and wait for success
6. Remove the object from ALOHA
7. Do a search, click my objects, and import the object you just saved (there is only 1 – you should only get multiples if you click new when prompted in step 4)
8. Verify metadata is correct in ALOHA
9. Load up CAREO.netera.ca and verify that there is only 1 object, verify metadata has changed, etc

Editing process

Search Frame [Minimize] [Maximize] [Close]

Search [My Objects]

6 items found Max results per repository: 10

On	Site	Type	Status	Activity
<input checked="" type="checkbox"/>	BELLE-CAREO	Repository	Online	Done

Title	Source	Type
SPICE: Consult phase - Nature of the Adolescent	BELLE-CAREO	IMS 1.2.2
SPICE: Consult phase - Teacher as Actor	BELLE-CAREO	IMS 1.2.2
SPICE: Problem Solving Model - Description	BELLE-CAREO	IMS 1.2.2
SPICE: Problem Solving Model - Diagram	BELLE-CAREO	IMS 1.2.2
SPICE: Problem Solving Model - Consult Phase	BELLE-CAREO	IMS 1.2.2
SPICE: Consult phase - Benefiting from mistakes	BELLE-CAREO	IMS 1.2.2

Import

Conclusions re tagging objects

- CanCore is not user-friendly
- Vocabularies are constraining
- Two-step approach to tagging works well
 - ALOHA is user-friendly
 - Editing process is onerous

Transfer of XML records

- Objects in CAREO
- Transfer and workaround for video

CAREO

- “Campus Alberta Repository of Educational Objects”
 - Serves as a prototypical portal to access objects
 - Objects are retrieved from web sites
 - Does not rely on a peer-to-peer network
 - Does not centrally store objects
 - Stores metadata only

CAREO interface

CAREO: Campus Alberta Repository of Educational Objects - Microsoft Internet Explorer

File Edit View Favorites Tools Help

Back Forward Stop Home Search Favorites Media

Address <http://careo.ucalgary.ca/cgi-bin/WebObjects/Repository.woa?theme=careo> Go

CAREO

CAMPUS ALBERTA REPOSITORY OF EDUCATIONAL OBJECTS

Home | Repository contains 3535 objects.

Simple Search: [Advanced Search](#) | [Browse Objects](#)

REPOSITORY LOGIN

User Name

Password

[Forgotten Password?](#)

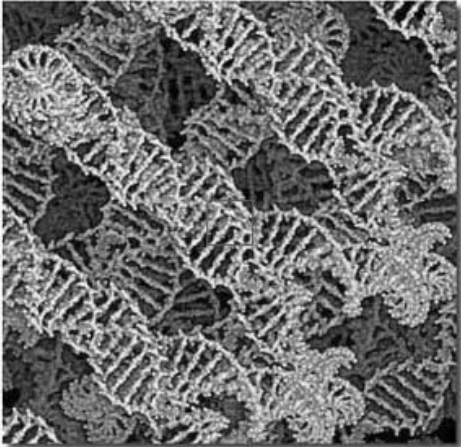
NON-MEMBERS

> [Create an account](#)

CAREO PROJECT

- HOME
- CONTACT
- PARTNERS
- MEMBERSHIP
- PLUGINS
- HELP/FAQ
- USERGUIDE

FEATURED OBJECT:



Powers of 10

February 28, 2003: View the Milky Way at 10 million light years from the Earth. Then move through space towards the Earth in successive orders of magnitude until you reach a tall oak tree just outside the buildings of the National High Magnetic Field Laboratory in Tallahassee, Florida. After that, begin to move from the actual size of a leaf into a microscopic world that reveals leaf cell walls, the cell nucleus, chromatin, DNA, and finally...

NEWEST OBJECTS:

- Treasure Island** : This is an adventure novel written by Robert Louis Stevenson [Robert Louis Stevenson](#)
Owner: magee Group: guest Permissions: 0744 Created: May 26, 2003
Accesses: 5
- Dracula** : This is a horror story written by Bram Stoker. [Bram Stoker](#)
Owner: magee Group: guest Permissions: 0744 Created: May 26, 2003
Accesses: 0
- The Hound of the Baskervilles** : This is a Sherlock Holmes novel by Sir Arthur Conan Doyle. [Sir Arthur Conan Doyle](#)
Owner: magee Group: guest Permissions: 0744 Created: May 26, 2003
Accesses: 0
- THE CANTERBURY TALES** : This is an epic poem written by Geoffrey Chaucer about a group of pilgrims travelling together to Canterbury in the 14th century. [Geoffrey Chaucer](#)
Owner: magee Group: guest Permissions: 0744 Created: May 26, 2003
Accesses: 1
- A Study in Scarlet** : This is a Sherlock Holmes novel written by Sir Arthur Conan Doyle [Sir Arthur Conan Doyle](#)
Owner: magee Group: sait test Permissions: 0740 Created: May 26, 2003
Accesses: 2

TOP OBJECTS:

- Earth at Night** : A composite image created by NASA to show the earth at night

Objects in CAREO

CAREO

CAMPUS ALBERTA REPOSITORY OF EDUCATIONAL OBJECTS

[Home](#) | Repository contains 3255 objects.

Simple Search: [Advanced Search](#) | [Browse Objects](#)

USER INFO:
March 07, 2003
ElizabethMurphy
Memorial University
Logged in at 08:33:27 AM
[My Objects](#)
[Subscriptions](#)
[My Account](#)
[Help/FAQs](#)
[Logout](#)
3 users logged in.


CAREO PROJECT
[HOME](#)
[CONTACT](#)
[PARTNERS](#)
[MEMBERSHIP](#)
[PLUGINS](#)

Repository found 6 objects matching spice .
6 Records Show items/page

Search completed in 1541 ms (1540 ms in rpc, 1 ms processing)

- SPICE: Problem Solving Model - Consultation Phase** : This web page outlines the first of three phases in the SPICE Problem Solving Model. Consulting involves seeking out the knowledge or experience of others in order to be exposed to a multiplicity of interpretations. This phase might be accomplished through diverse means and media. Those participating in consulting might rely on face-to-face interviews. The SPICE model relies on pre-recorded video-taped interview with teachers. See also: [SPICE: Problem Solving Model-Description](#); [SPICE: Problem Solving Model - Consultation Phase](#); [SPICE: Teacher Testimonial: Benefiting from mistakes](#); [SPICE: Teacher Testimonial: Teacher as Actor](#); [SPICE: Teacher Testimonial - Nature of the Adolescent](#). SPICE is an acronym for Solving Problems in Collaborative Environments which is a learning module. The module as a whole is not presently available as an object.
[Elizabeth Murphy](#)
Score: 43 Owner: elizabeth Group: guest Permissions: 0774 Created: March 07, 2003
- SPICE: Problem Solving Model - Diagram** : This diagram of a problem solving model includes three phases: consulting, gathering, and responding. In between each of these phases is shared reflection. Potential users of the model include practitioners such as nurses, social workers, engineers and teachers. The model could also be used for problem solving in organizations. See also: [SPICE: Problem Solving Model-Description](#); [SPICE: Problem Solving Model - Consultation Phase](#); [SPICE Teacher Testimonial: Benefiting from mistakes](#); [SPICE: Teacher Testimonial: Teacher as Actor](#); [SPICE: Teacher Testimonial - Nature of the Adolescent](#). SPICE is an acronym for Solving Problems in Collaborative Environments which is a learning module. The module as a whole is not presently available as an object.
[Elizabeth Murphy](#)
Score: 42 Owner: elizabeth Group: guest Permissions: 0744 Created: March 07, 2003
- SPICE: Problem Solving Model - Description** : This web page describes a problem-solving model with three phases: consulting, gathering and responding. In between each of these phases is shared reflection. Potential users of

Object description in CAREO

 **SPICE: Consult phase - Teacher as Actor** : In this video segment a senior-high teacher presents her perspective on the teaching strategy of the teacher as actor. To view this video you will need Real Media player installed on your machine. See also: SPICE: Problem Solving Model-Description; SPICE: Problem Solving Model-Diagram; SPICE: Problem Solving Model - Consult Phase; SPICE Consult phase: Benefiting from mistakes; SPICE: .Consult phase - Nature of the Adolescent. SPICE is an acronym for Solving Problems in Collaborative Environments which is a learning module. The module as a whole is not presently available as an object. [Elizabeth Murphy](#)

Score: 42 Owner: elizabeth Group: guest Permissions: 0744 Created: March 07, 2003 Accesses: 13



view

subscribe

metadata

Object summary

Summary

Details

Source

History

Record ID: 598255
Schema: IMS 1.2.2
Owner: elizabeth
Group: guest
Date Created: 2003-03-07 14:52:47 Etc/GMT
Date Modified: 2003-03-07 14:52:47 Etc/GMT
Permissions: 0744

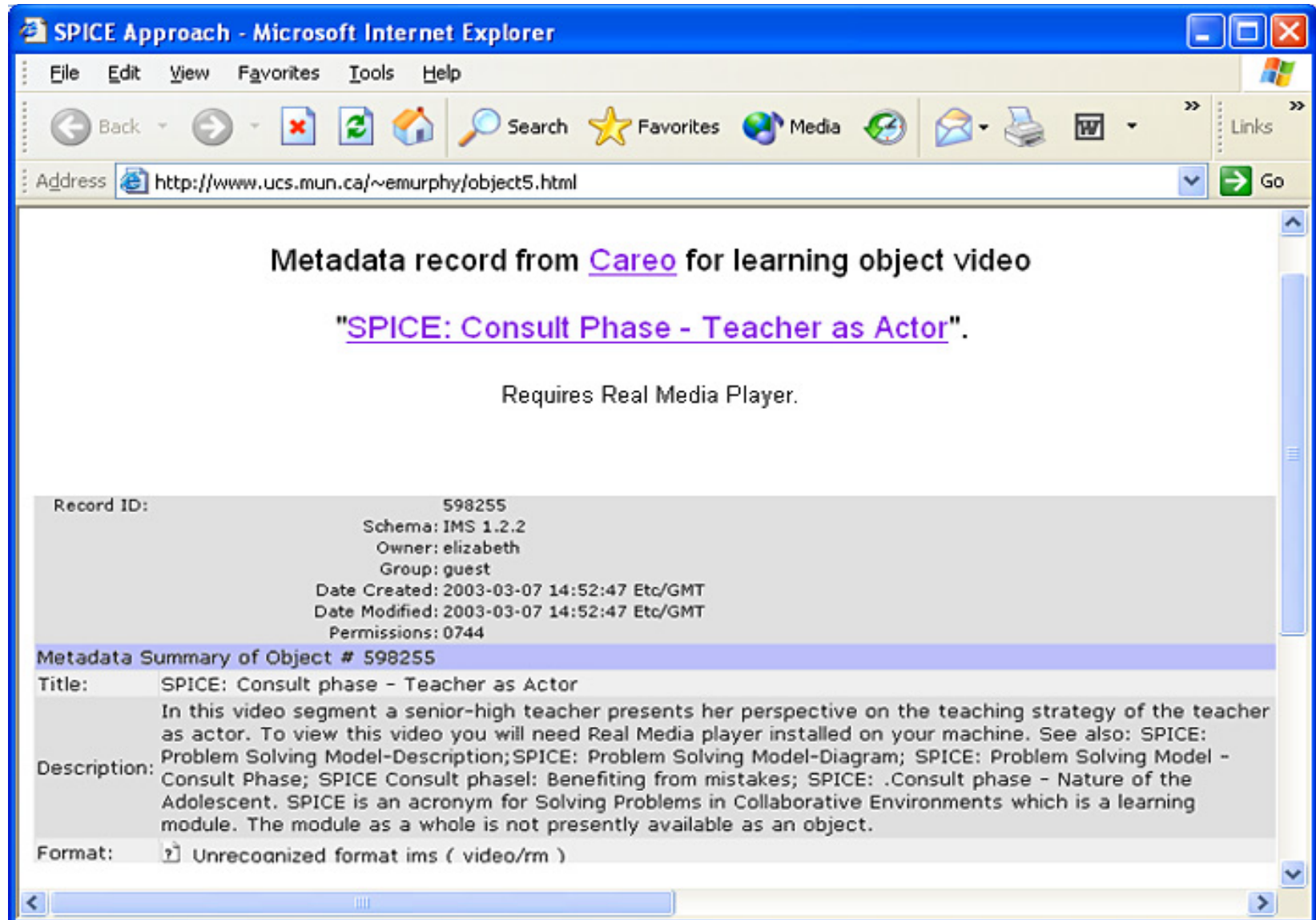
Metadata Summary of Object # 598255

Title: SPICE: Consult phase - Teacher as Actor

Description: In this video segment a senior-high teacher presents her perspective on the teaching strategy of the teacher as actor. To view this video you will need Real Media player installed on your machine. See also: SPICE: Problem Solving Model-Description; SPICE: Problem Solving Model-Diagram; SPICE: Problem Solving Model - Consult Phase; SPICE Consult phase: Benefiting from mistakes; SPICE: .Consult phase - Nature of the Adolescent. SPICE is an acronym for Solving Problems in Collaborative Environments which is a learning module. The module as a whole is not presently available as an object.

Format:  Unrecognized format ims (video/rm)

Workaround for streamed video



The screenshot shows a Microsoft Internet Explorer browser window. The title bar reads "SPICE Approach - Microsoft Internet Explorer". The address bar contains the URL "http://www.ucs.mun.ca/~emurphy/object5.html". The main content area displays the following text:

Metadata record from [Careo](#) for learning object video

["SPICE: Consult Phase - Teacher as Actor"](#).

Requires Real Media Player.

Record ID: 598255
Schema: IMS 1.2.2
Owner: elizabeth
Group: guest
Date Created: 2003-03-07 14:52:47 Etc/GMT
Date Modified: 2003-03-07 14:52:47 Etc/GMT
Permissions: 0744

Metadata Summary of Object # 598255

Title: SPICE: Consult phase - Teacher as Actor

Description: In this video segment a senior-high teacher presents her perspective on the teaching strategy of the teacher as actor. To view this video you will need Real Media player installed on your machine. See also: SPICE: Problem Solving Model-Description; SPICE: Problem Solving Model-Diagram; SPICE: Problem Solving Model - Consult Phase; SPICE Consult phase: Benefiting from mistakes; SPICE: .Consult phase - Nature of the Adolescent. SPICE is an acronym for Solving Problems in Collaborative Environments which is a learning module. The module as a whole is not presently available as an object.

Format: ? Unrecognized format ims (video/rm)

Conclusions: Transfer of XML records

- Simple process
- Objects are discoverable
- Need accommodation for streamed video
 - Difficult to promote interoperability & accessibility
- Video objects not in streamed format would benefit from P2P technologies

Questions arising from pilot

- How can we design objects so that the context gives meaning to the object?
- How can we produce & select video to maximise scalability, reusability, interoperability?
- How might CanCore schema be tailored to individual contexts/communities & still promote standards?
 - What would be needed to make P2P architectures effective for object sharing?

C'EST TOUT...

MERCI!