

*Multimedia authoring tools
for computer assisted teaching & learning*



A concept of a possible project

Key factors

The concept is based on a triangle of mutually related models

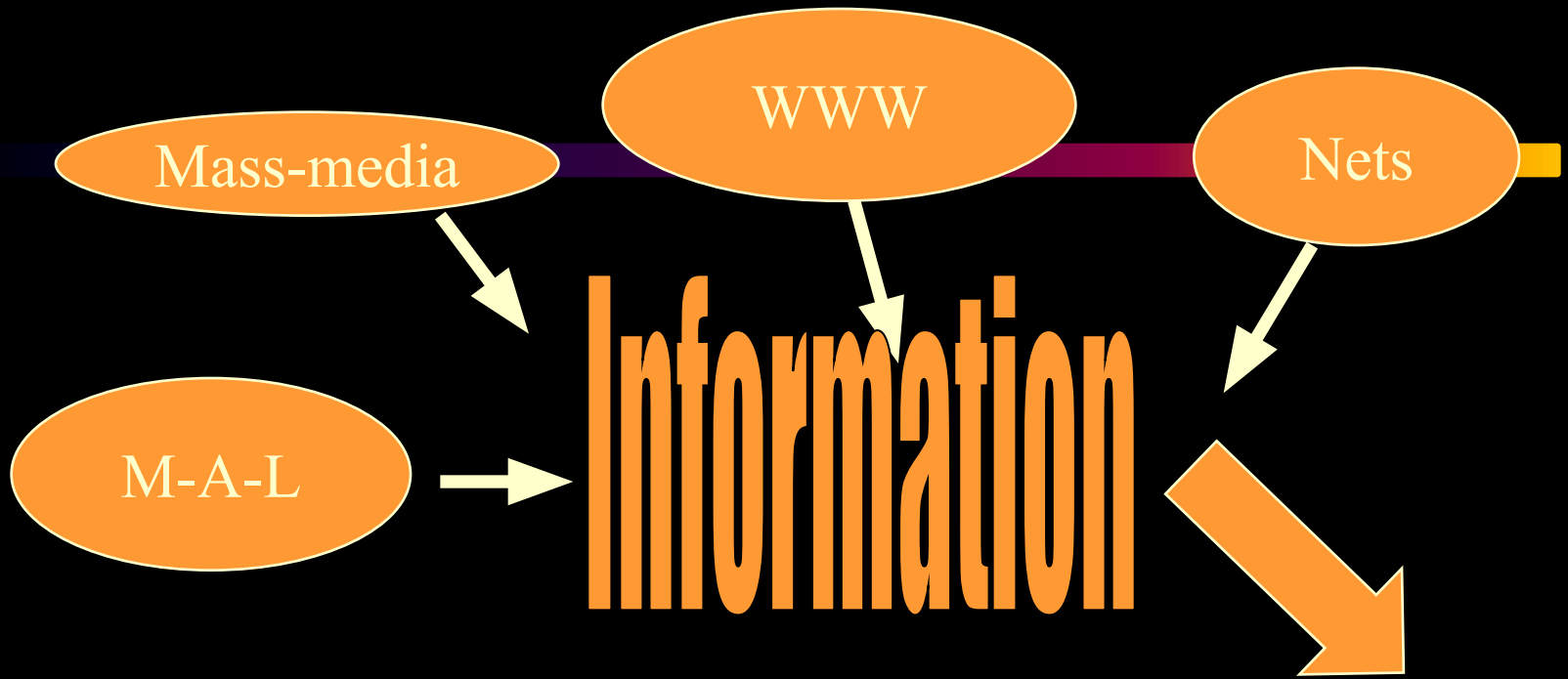
- Pedagogical model -- objectives
- Informational model – content
- Instrumental model -- technologies

Pedagogical approach

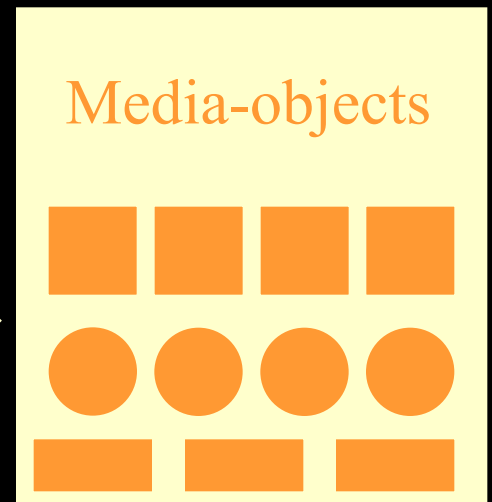


- Student's activity
 - One gets opportunities for individual and/or group activities in a framework of school studies
- Co-operation
 - Learning activities should be implemented in co-operation between a teacher and students' team
- Teacher's mission
 - A teacher has a leading role similar to orchestra conductor's one. Every student plays own role as a part of a common pedagogical symphony

Environment



Publishers



Access to information resources



- Open informational environment
- Professionally designed and published materials
- Learning media objects (E-libraries)
 - based on school curricula and filled by experts,
 - equally accessible for every participant of educational process,
 - open for adding new objects under professional supervising

Information



Environment

Professional competencies:
Subject, pedagogy, research
methods, design, technologies, etc.

Expert
community

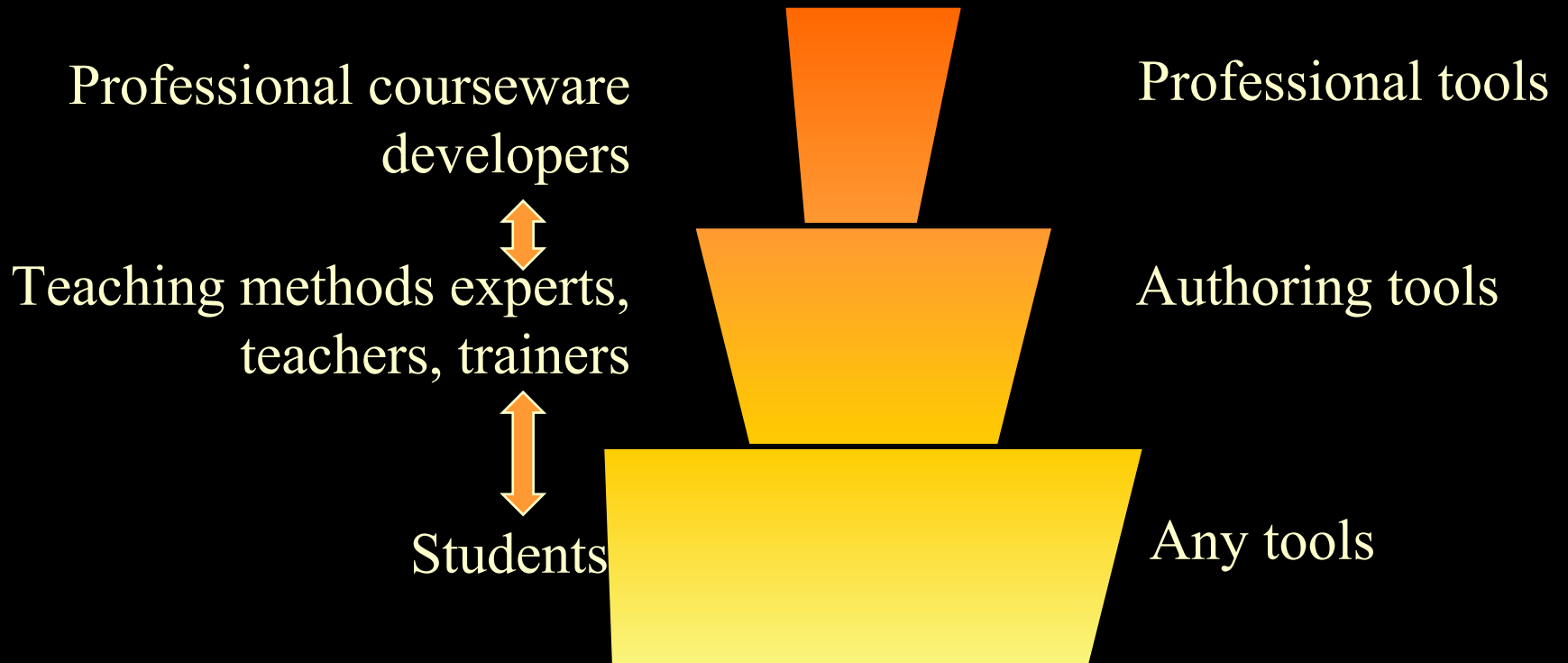
Skills Competencies Experience
Knowledge

Instrumental aspect



- *Common modus operandi*
 - A teacher and students use the same methods and common toolkit for developing e-materials.
 - *Common modus operandi* guarantees that authoring activity started by one of educational process participants might be continued or edited by another student or other member of a school community
- ICT-based tools give an opportunity to modify and enrich traditional pedagogical techniques and improve them towards innovative practices

Hierarchy of e-materials



Actions with media objects



- Texts: to colour, to hide, to insert, to authorize, to compare, to link with another objects
- Images: to zoom, to crop, to mask, to draw, to hide, to label, to compare to link with another objects
- Sounds, videos: to set markers, to play clips between preset markers, to include to a playlist for a consecutive performance, to explore in a combination with another medias

The Summer Garden

The Summer Garden is located next to the Field of Mars and St. Michael's Castle. This old park has witnessed some of the most spectacular moments in St. Petersburg's early history. The beautiful wrought iron fence, separating the park from the public walk of the Palace Embankment, is not only one of the symbols of St. Petersburg, but also a world-famous masterpiece. It was installed **between 1771 and 1784** to a design by **Yury Matveyevich Felten** <...> . The grille is suspended between 36 granite columns crowned with urns and vases.

The Summer Garden is unique to the fact that it is one of few places which remain intact up to these days from **the early 18th century**. It was founded **in 1704** by order of **Peter the Great**, who was personally involved in planning it, and is laid out according to strict geometrical principles.

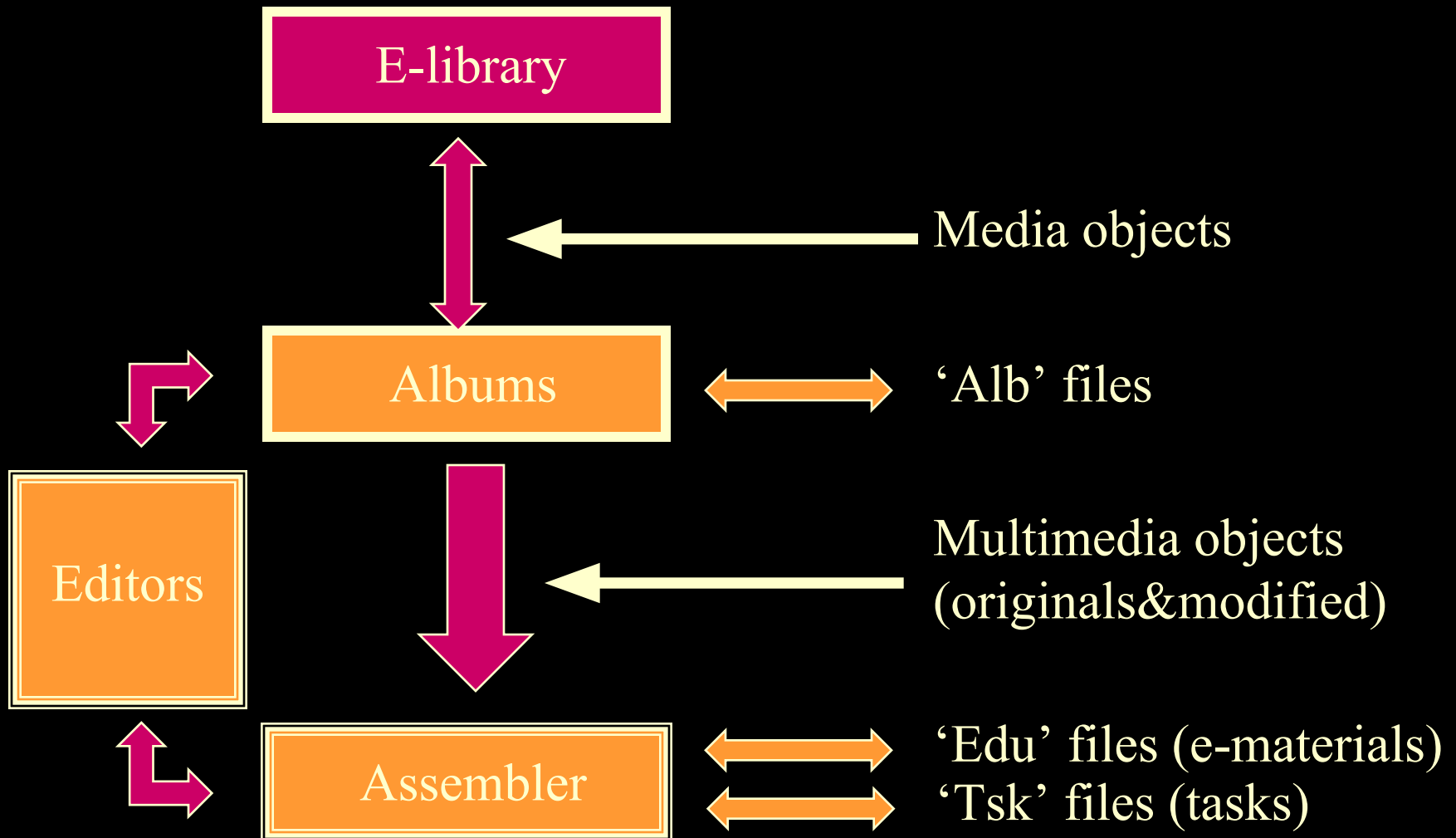
The Summer Garden is laid out on the island bounded by the **Fontanka, Moika, and Neva** Rivers and the **Swan Canal**. **By 1707** much of the work had been completed. The walks were lined with a hundred allegorical marble sculptures, executed by **Pietro Baratta, Marino Gropelli, Alvise Tagliapietra**, and other Venetian sculptors. **In the late 20th century**, 90 surviving statues were moved indoors, while modern replicas took their place in the park.

<...>

In 1710 Peter I commissioned the city's first and foremost architect, the Italian Domenico Trezzini, to build a small palace in the park, the Summer Palace. It is one of the first architectural constructions of St. Petersburg, which has preserved almost original appearance.

Text fragment analysis

Structure of components



Tasks

- Expert
- Tutor

All tools & actions →

Authoring tools

Tasks

.tsk files

- Student

Tasks

.tsk files

Task player

Permitted
& actions

tools

Reports

● Tutor

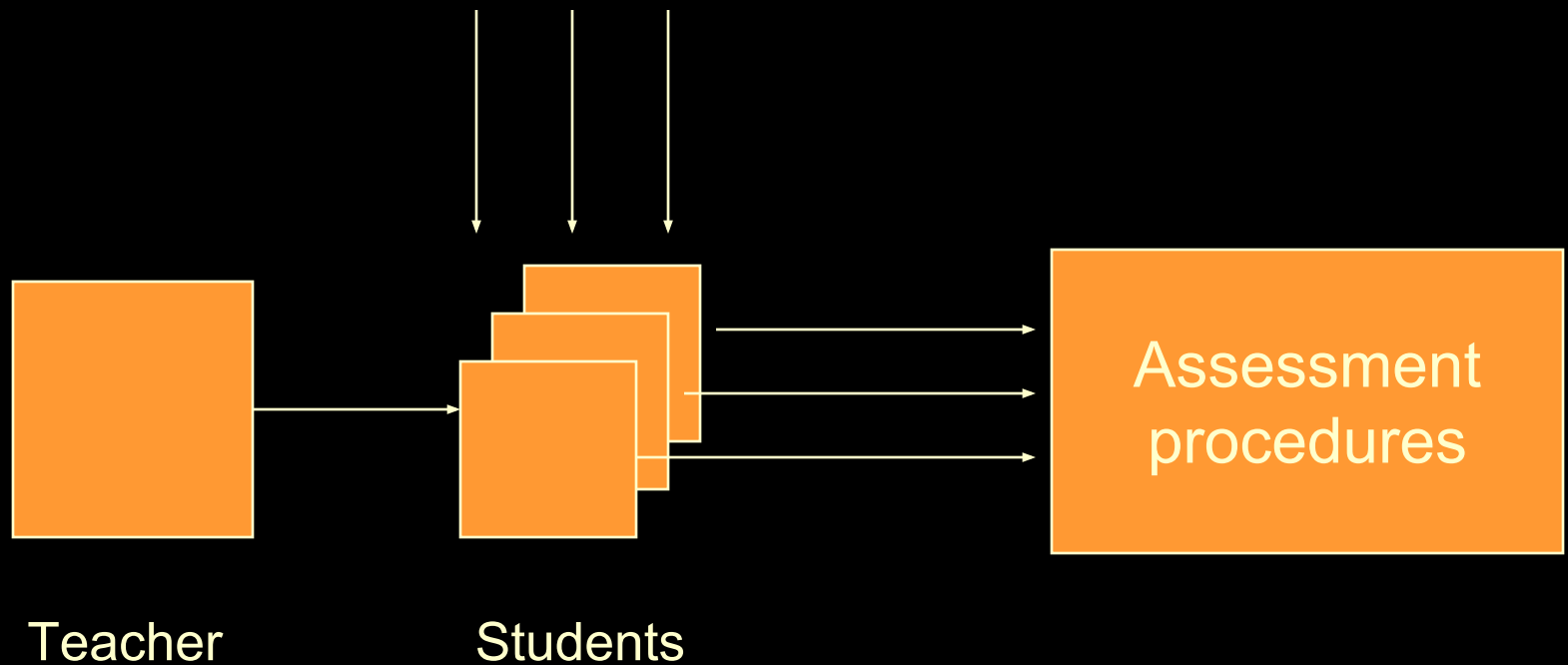


● Student



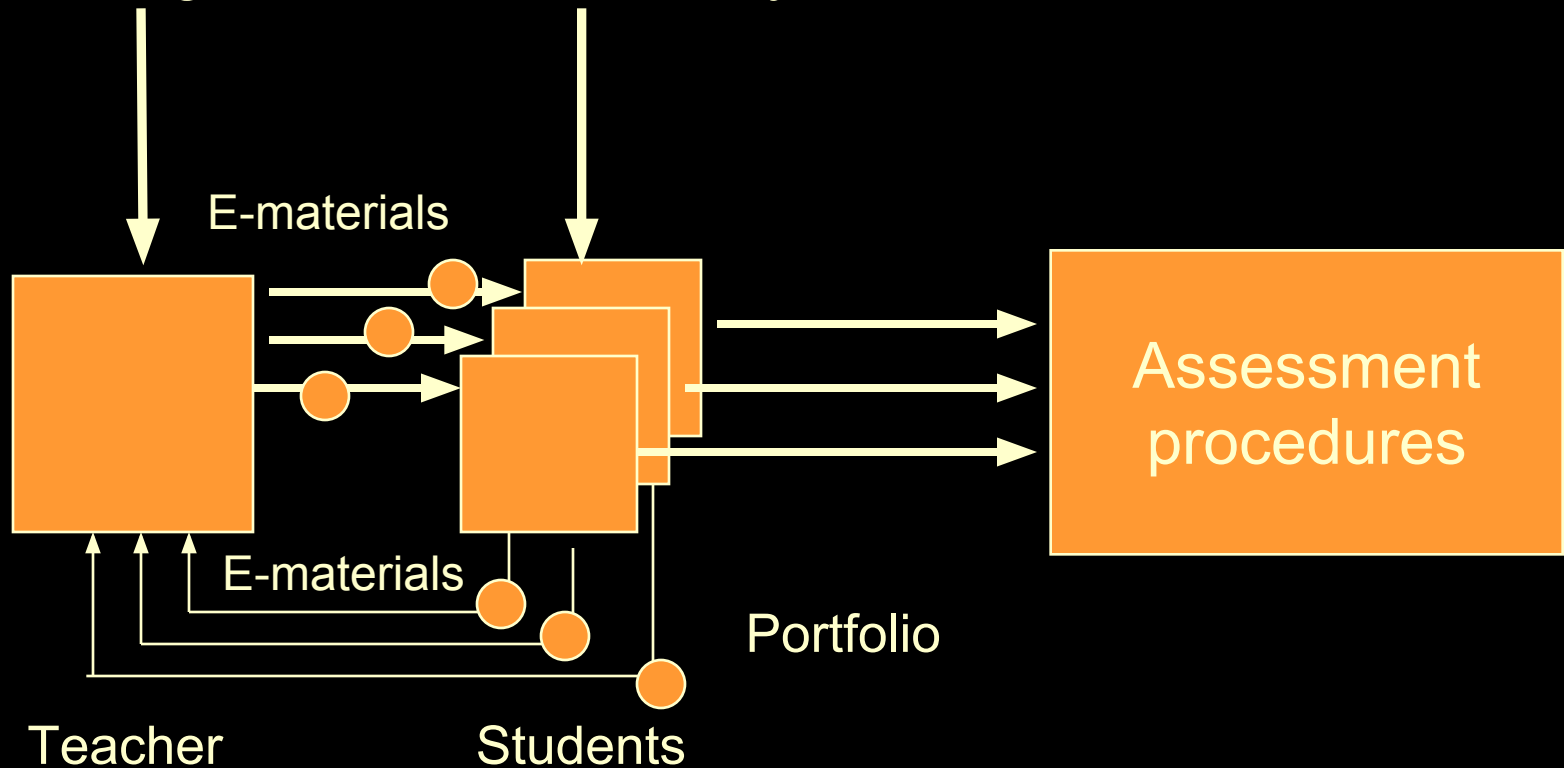
Traditional model

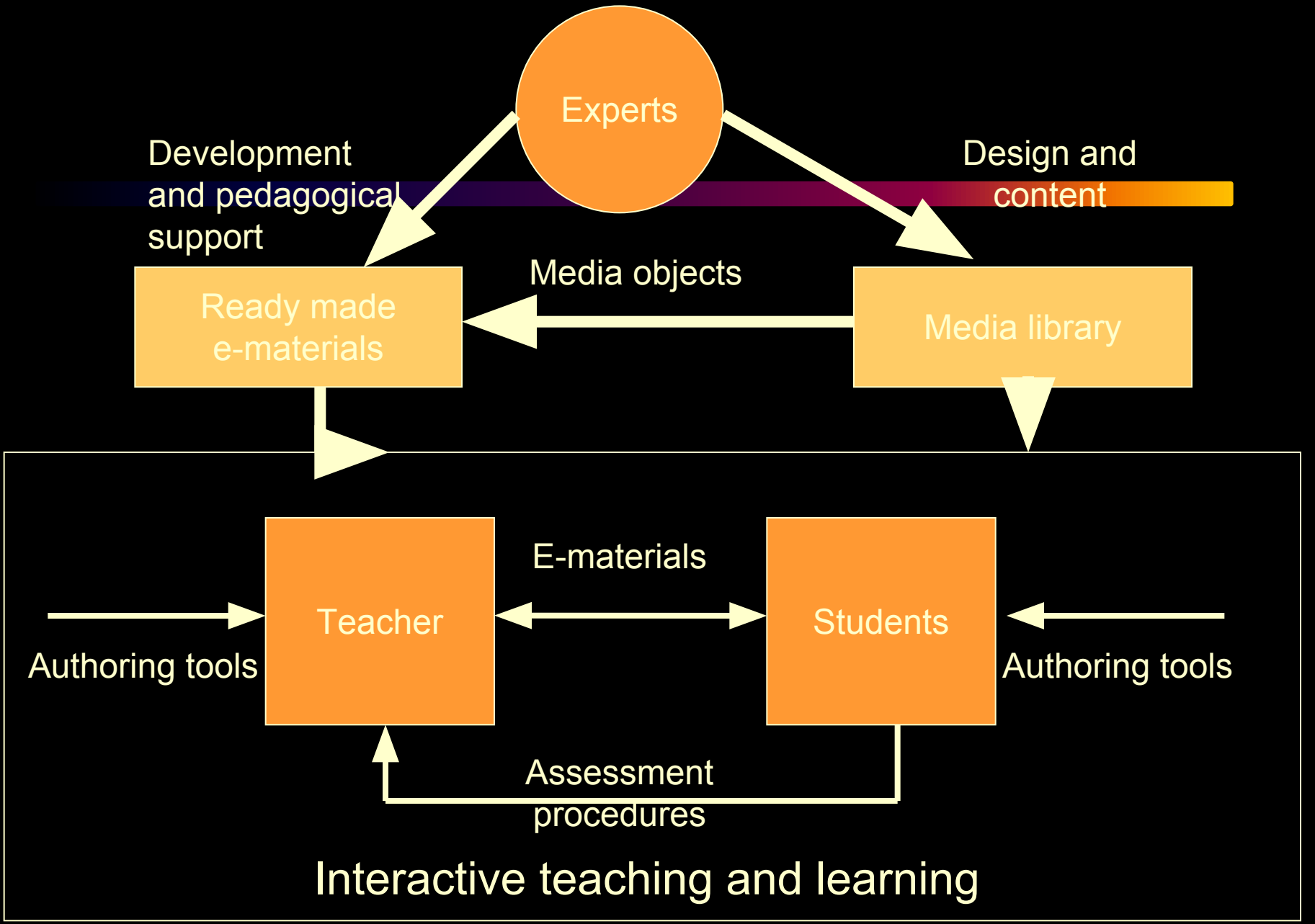
Educational editions



New look

Ready made courseware +
authoring tools + media library





The diagram illustrates a workflow where a central Portal interacts with files-oriented tools through objects. At the top, a yellow oval labeled 'Portal' is connected to a horizontal bar with a blue-to-orange gradient. Two double-headed arrows labeled 'Files including objects' connect the Portal to two orange boxes below, each labeled 'Files oriented tools (MS Office)'. A central orange box labeled 'Objects' has arrows pointing to both of these tool boxes, indicating that objects are shared between the tools.

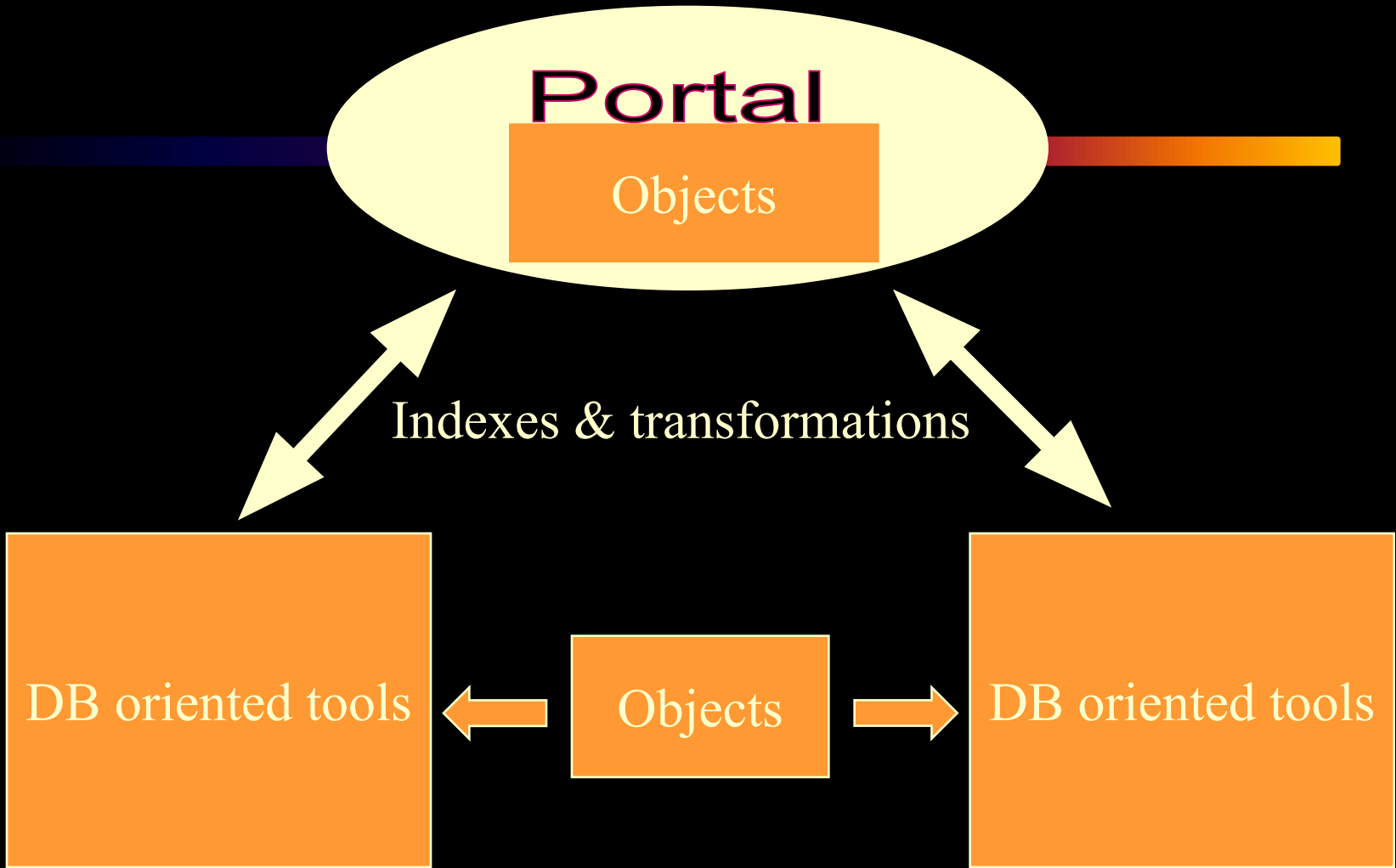
Portal

Files including objects

Files oriented
tools
(MS Office)

Objects

Files oriented
tools
(MS Office)



Portal

Objects & commands

Indexes & parameters

Clients

Clients

Internet

Portal

Subject Oriented Database

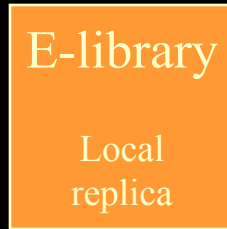
Objects & metadata

Courseware

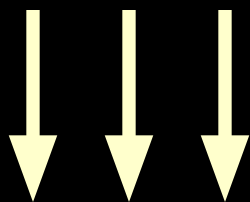
Communications, support



Authoring toolkit
(for tutors,
teachers, etc.)



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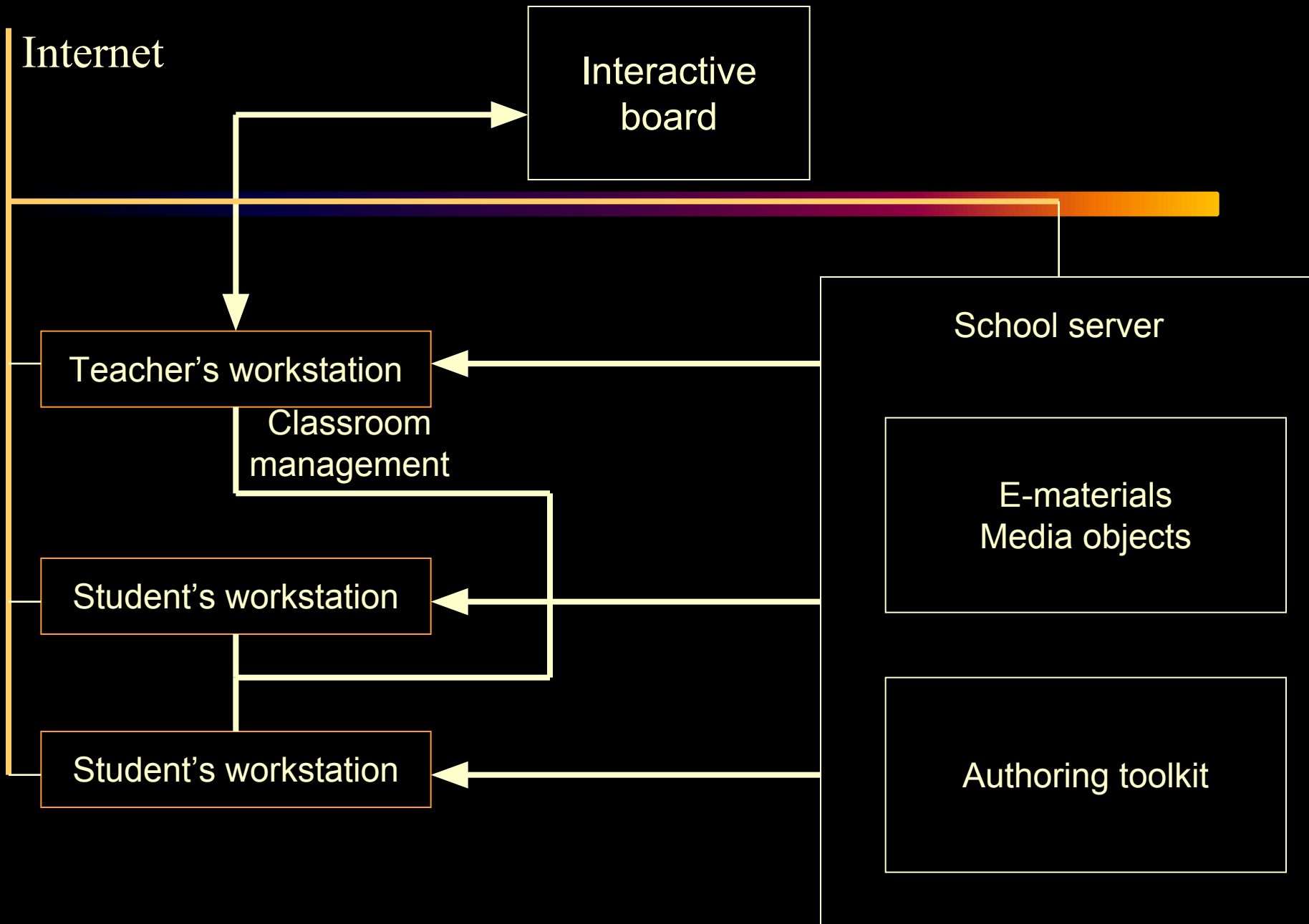


Computer assisted
studies

Courseware, e-materials
tasks for students

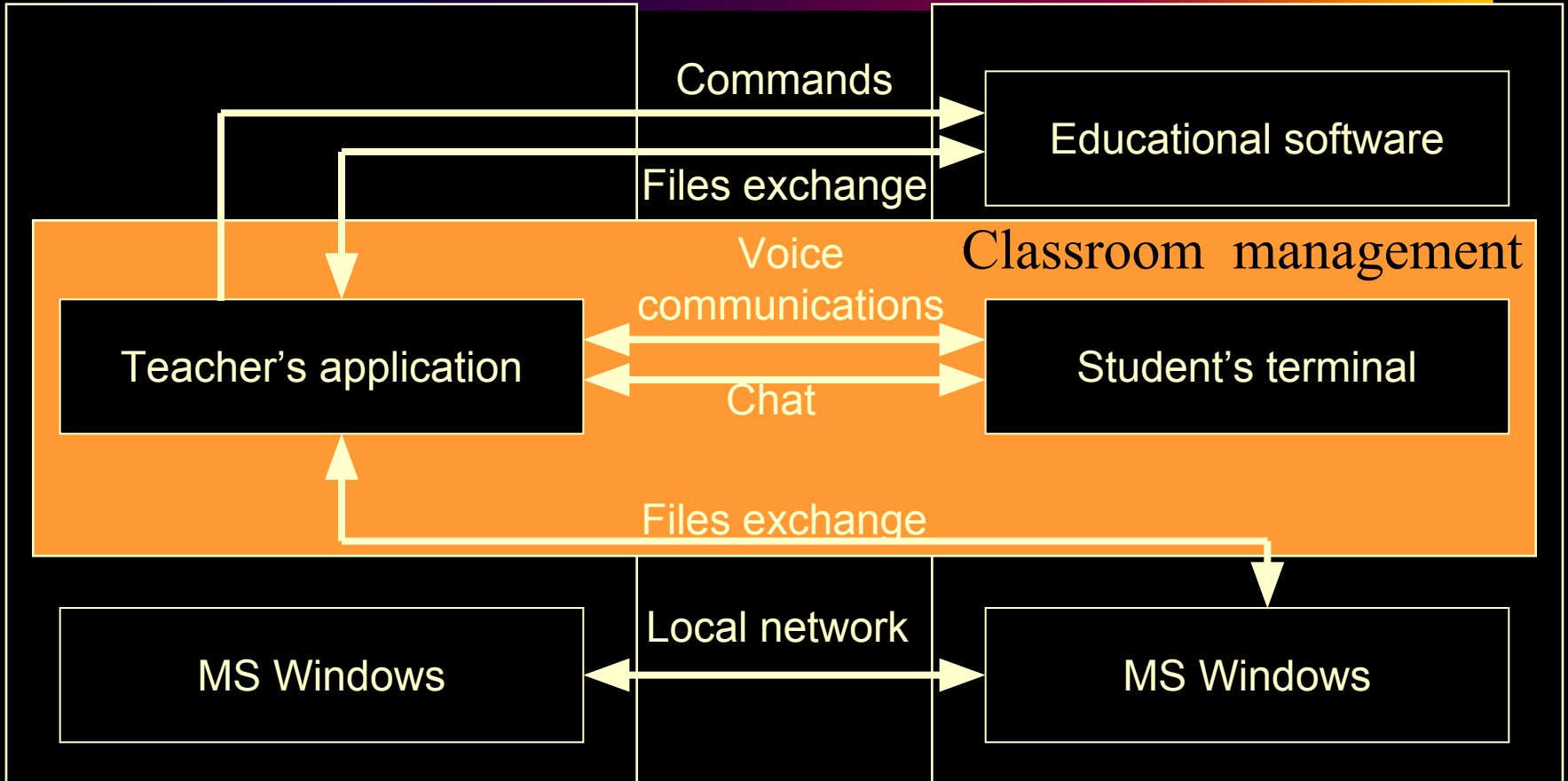


f
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Teacher's workstation

Student's workstation



Classroom environment



- Teacher's and students' work places are equipped with computers linked to a local network.
- An access to information resources and displays (interactive board, screen, etc.) is provided to every workstation.
- All teachers and students get an access to common set of authoring tools supporting various techniques of active working with multimedia learning objects.

Internet

Updates

Moderator

School cluster's
E-library

Downloads



Packages

School #1

School #2

School cluster

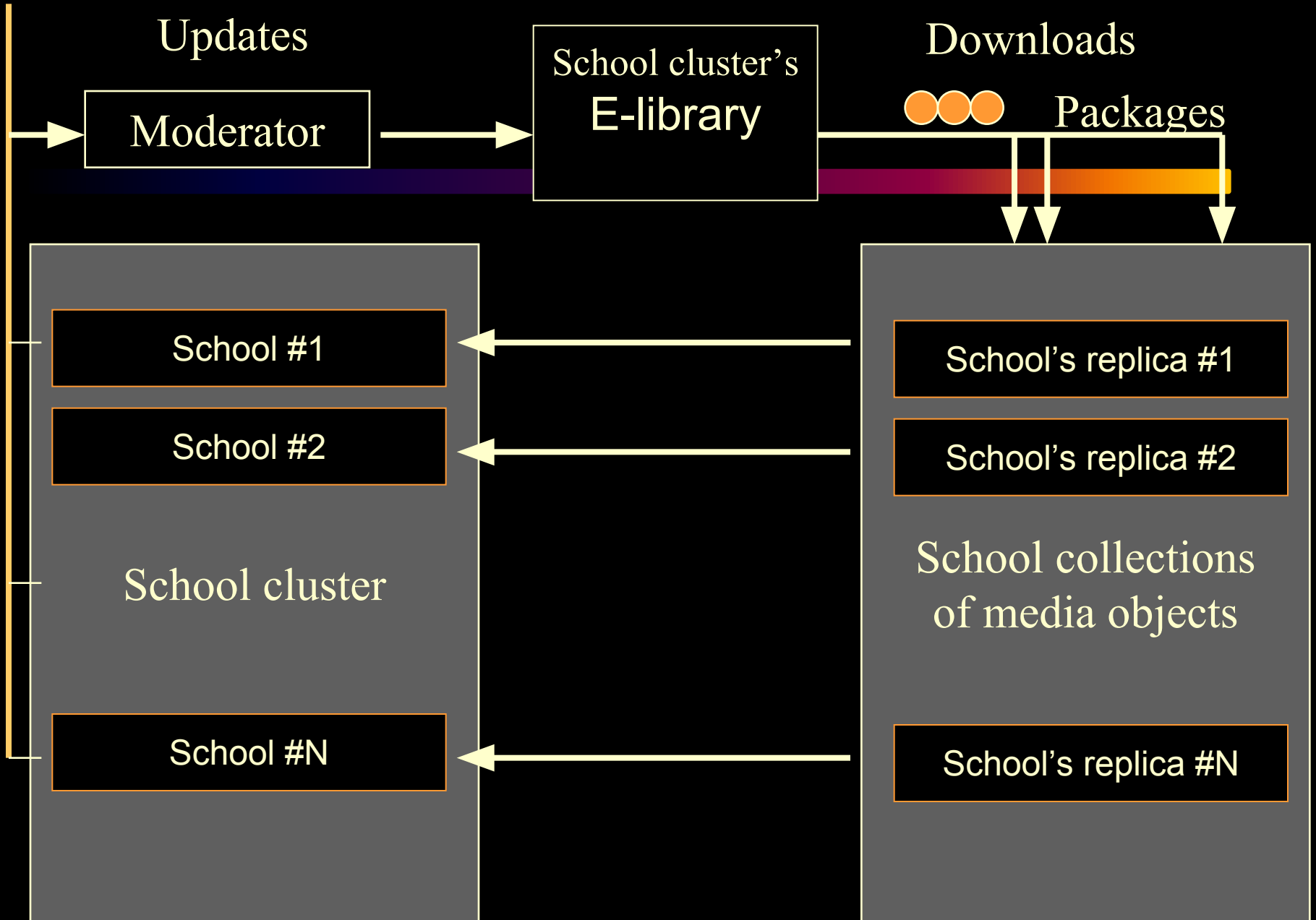
School #N

School's replica #1

School's replica #2

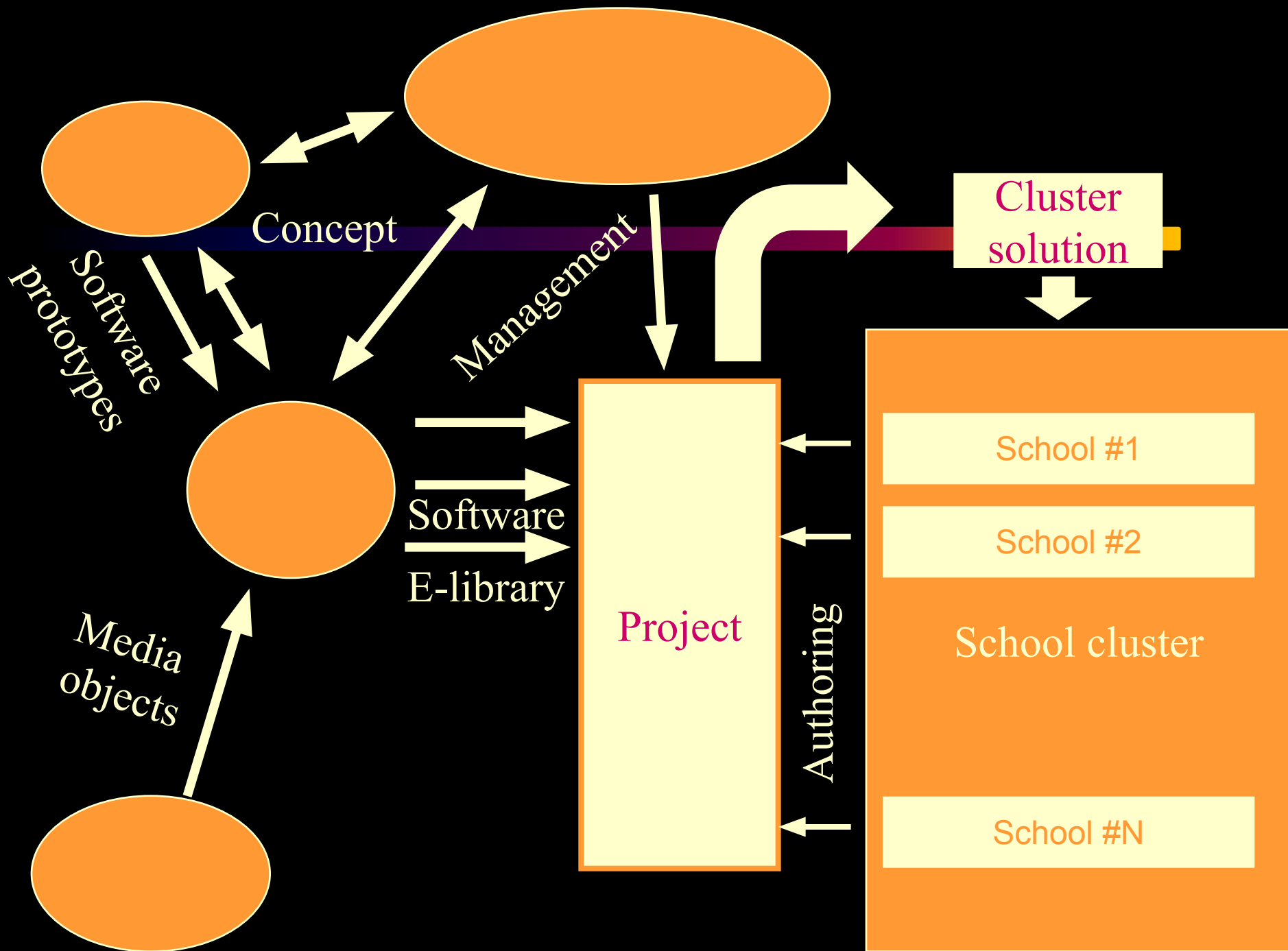
School collections
of media objects

School's replica #N



Key components of suggested software solutions

- A set of subject oriented e-libraries
 - common for the cluster
- Classroom management software
- Authoring toolkit for teachers and students



Training and retraining



Subject competencies

Subject competencies

+

ICT competencies

Subject competencies

Special ICT training programs

Training and retraining

Subject competencies

+

ICT competencies

Subject competencies

+

ICT competencies

Subject competencies

+

ICT competencies

ICT training modules in a framework of subject retraining

Training and retraining

Interactive learning
environment

+

Subject competencies +
ICT in subject teaching

Subject competencies +
ICT in subject teaching

Subject competencies +
ICT in subject teaching

