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Three Steps from Conventional Teaching to Distance Learning in Teacher Education

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Conceptual issues to be discussed

- A Framework suitable to accommodate ICT in teacher education
- Four factors as simplified school education
  - Educational philosophy, Ideals, Aims
  - Teachers' competency,
  - Educational reality, Families, Community
  - Constraints
- Five principles for On-line learning
  - ACCRR model (Autonomy, Collaboration, Contribution, Responsibility and Respect)
- Six components for learning plans and material development
  - MACETO module (Meaning, Activities, Contents, Environment, Tools and Outcome)

Technical topics to be discussed

- New style of Lesson Plan suitable to ICT
  - MACETO module for structural description of the learning
  - Platforms for sequential development of the learning
- Images and models for graphic representation of lesson plan
- Propositions translatable into international language (Japanese vs. English)

From theory and its application To studies on reality and theory

- Simplified models of school education
  - Students have their experiences in elementary and secondary schools as learners already
  - They feel hard to start from reflection on teaching
  - They have their images on school life, teachings and teachers
- Starting from images to models to describe their ideas on teaching

Three Steps from Conventional lesson to Distance learning

Lecture: 'Introduction to Instructional Technology

(1) Conventional lesson

Friday 4:10-5:40

Number of students: 228

Capacity of lecture room : 300

(2) Computer laboratory lesson

Friday 10:40-12:10

Number of students: 78

Capacity of laboratory: 93

(3) On-line learning at distance

At planning stage for next year

Instructional Technology

Learning Organization

Class Disruption

Internet

Ubiquitous Network

Computer

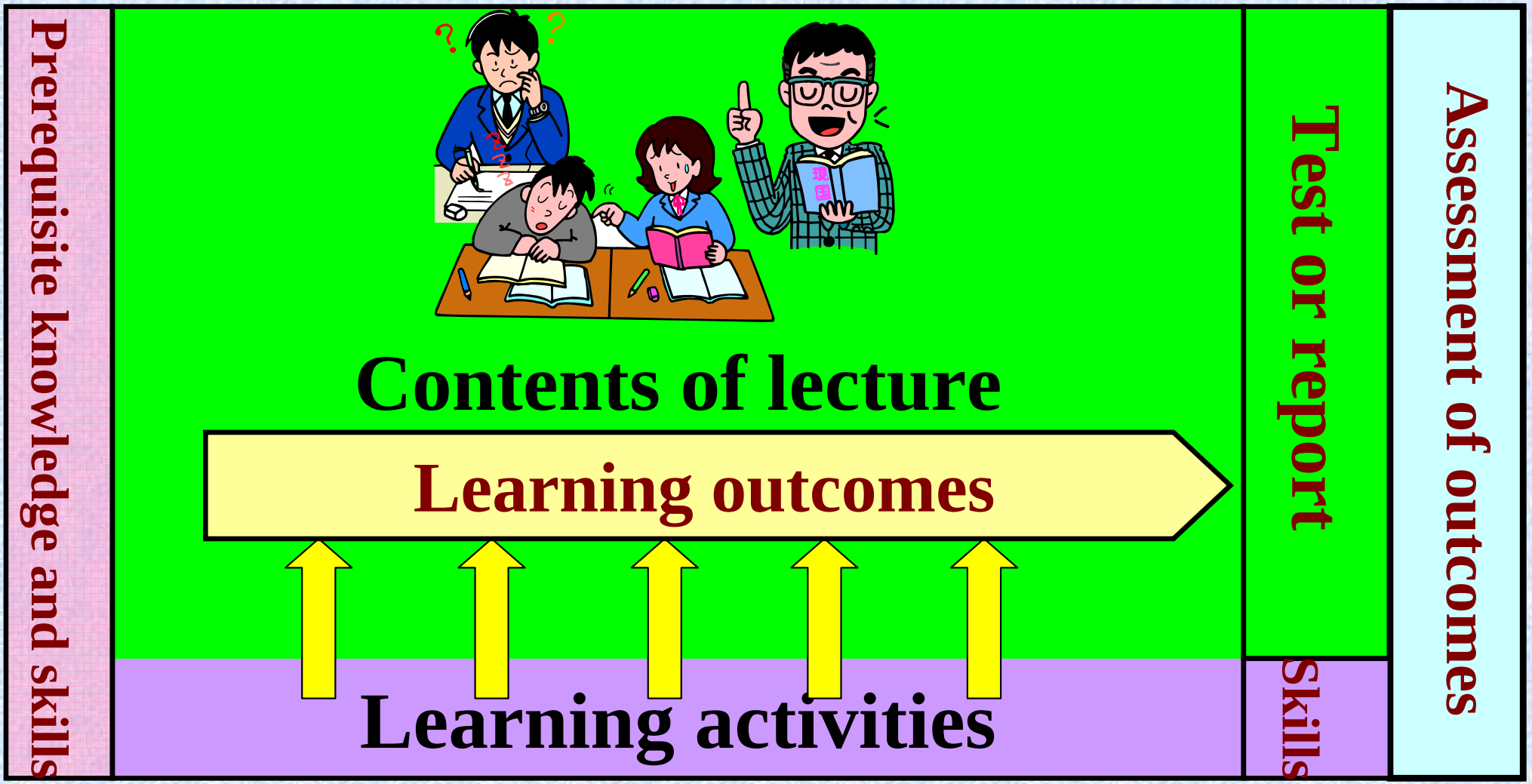
Right of Learning

Autonomous Learning

Community

Information Technology

Lecture(large group)



Practicum(small group)

Prerequisite knowledge and skills

Contents of practice

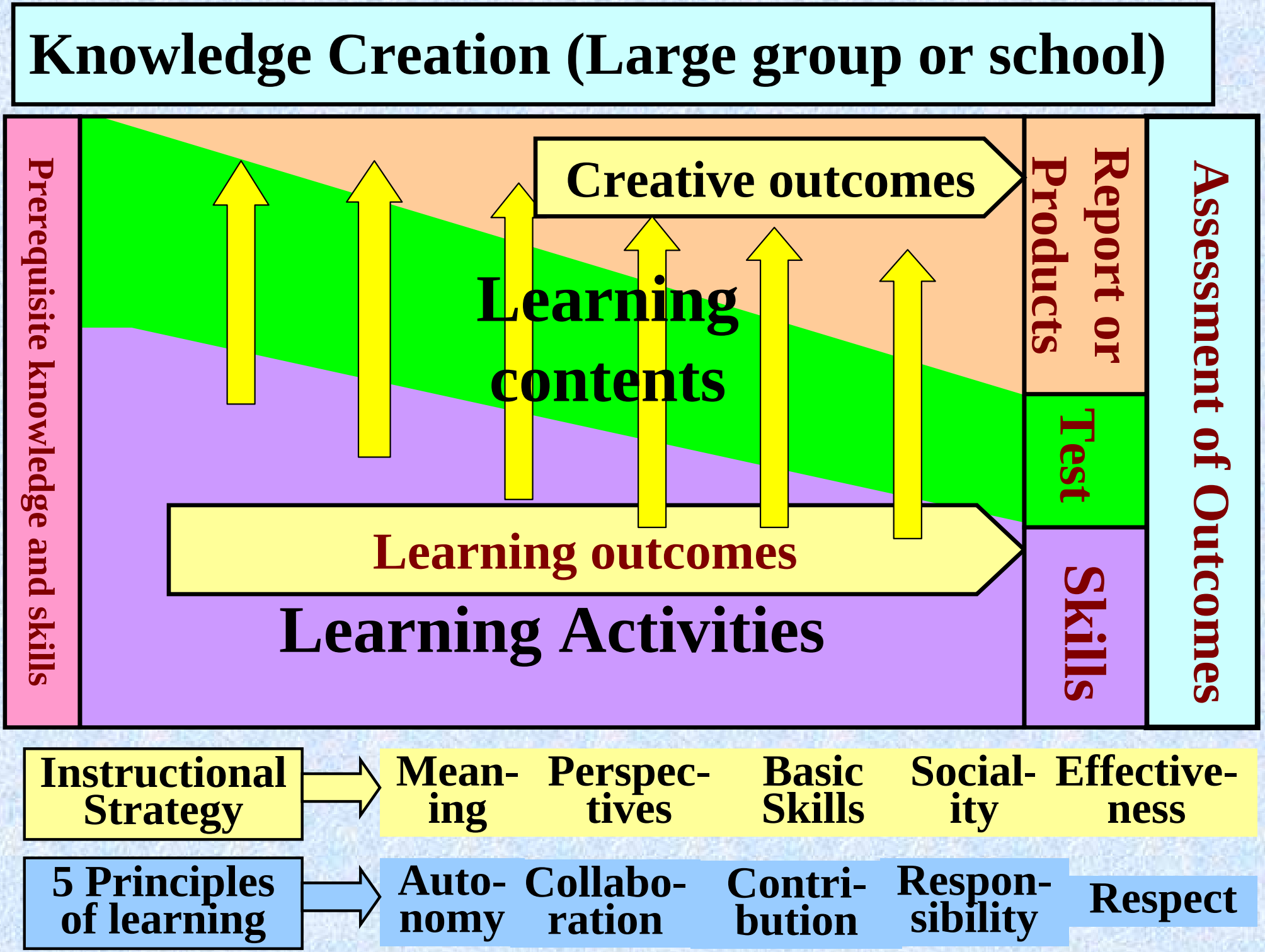
Learning outcomes

Learning activities

Report

Skills

Assessment of Outcomes


Knowledge Creation (Large group or school)
Prerequisite knowledge and skills
Creative outcomes
Learning contents
Learning outcomes
Learning Activities
Report or Products
Test
Skills
Assessment of Outcomes
Instructional Strategy
Mean-ing
Perspec-tives
Basic Skills
Social-ity
Effective-ness
5 Principles of learning
Auto-nomy
Collabo-ration
Contri-bution
Respon-sibility
Respect

Theme: To design a virtual school and develop a lesson plan for this school

Survey by students

Information

Group discussion

Information

Gathering of information

Students' awareness of problems

Group presen-tation

Clarification

???

Pres tatio

Final presentation

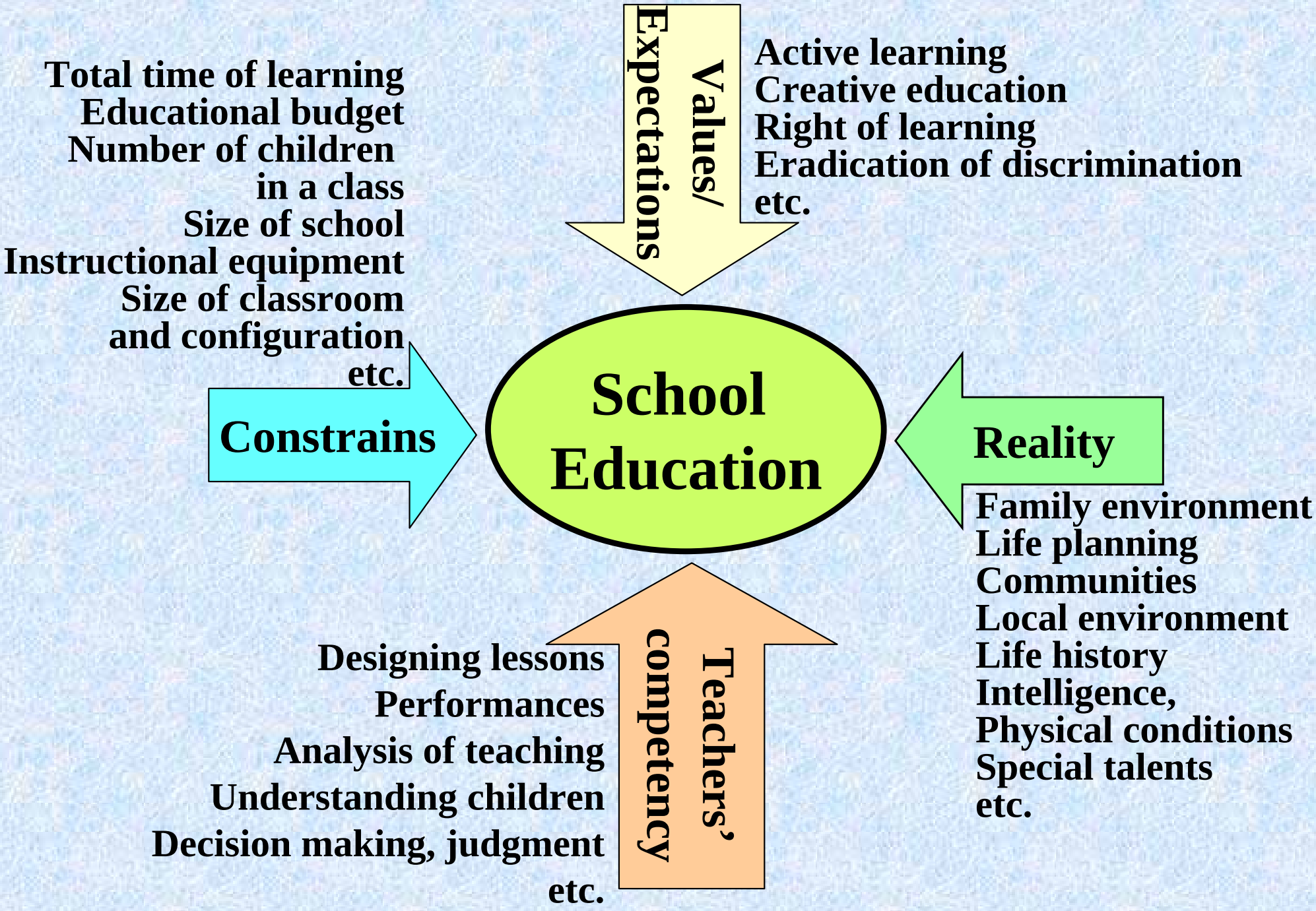
Submission

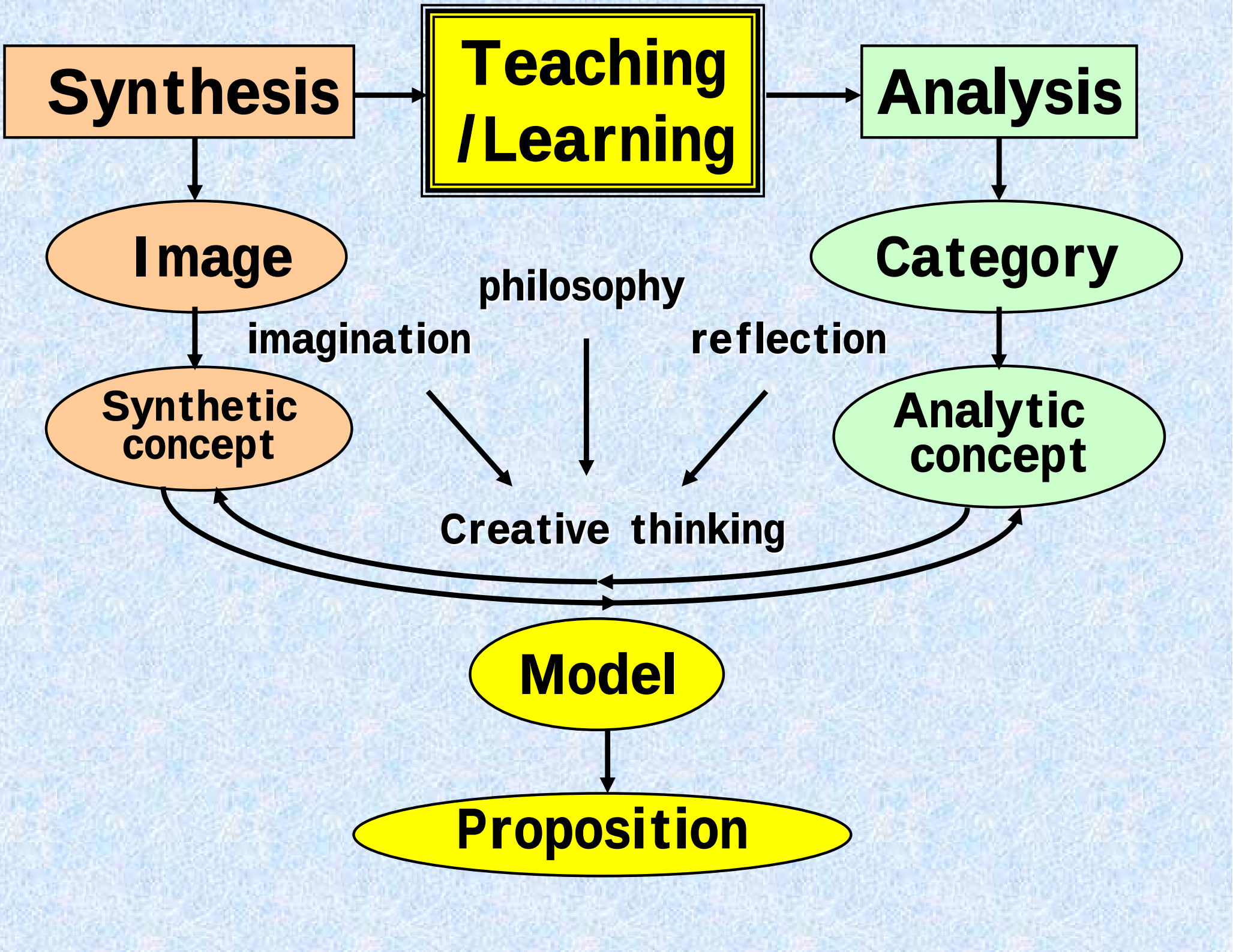
Report

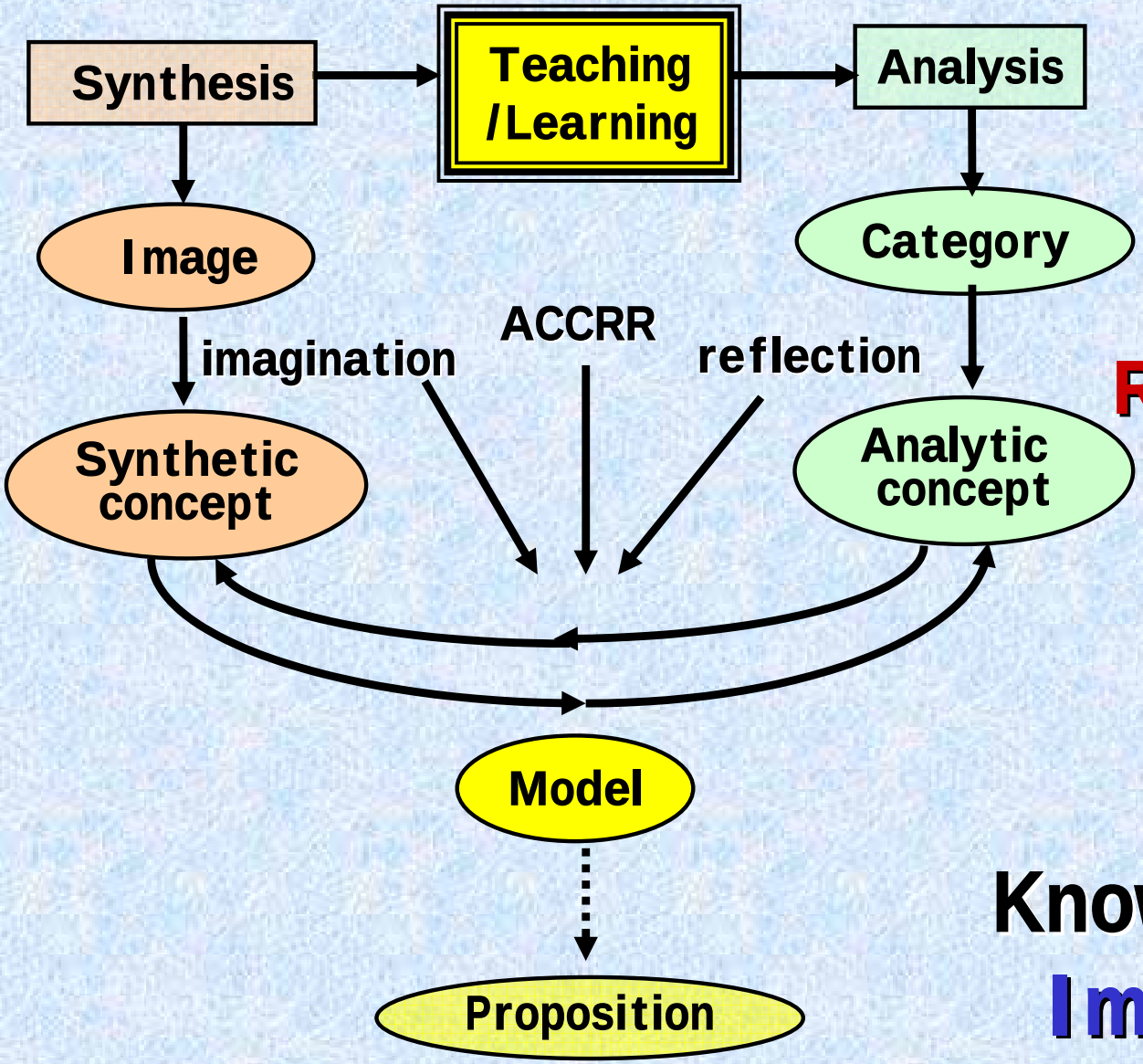
Cre-dits

Creative contribution

Four factors influencing school education




Synthesis
Teaching /Learning
Analysis
Image
Category
philosophy
imagination
reflection
Synthetic concept
Analytic concept
Creative thinking
Model
Proposition

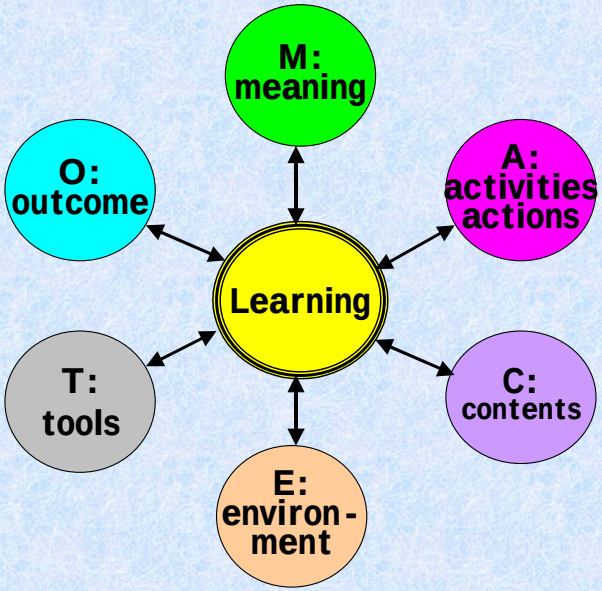


Research Procedure
on
On-line Learning

Knowledge Production
Images, Categories
Models
MACETO Modules
(Propositions)

MACETO Module

MACETO Module (Structural)



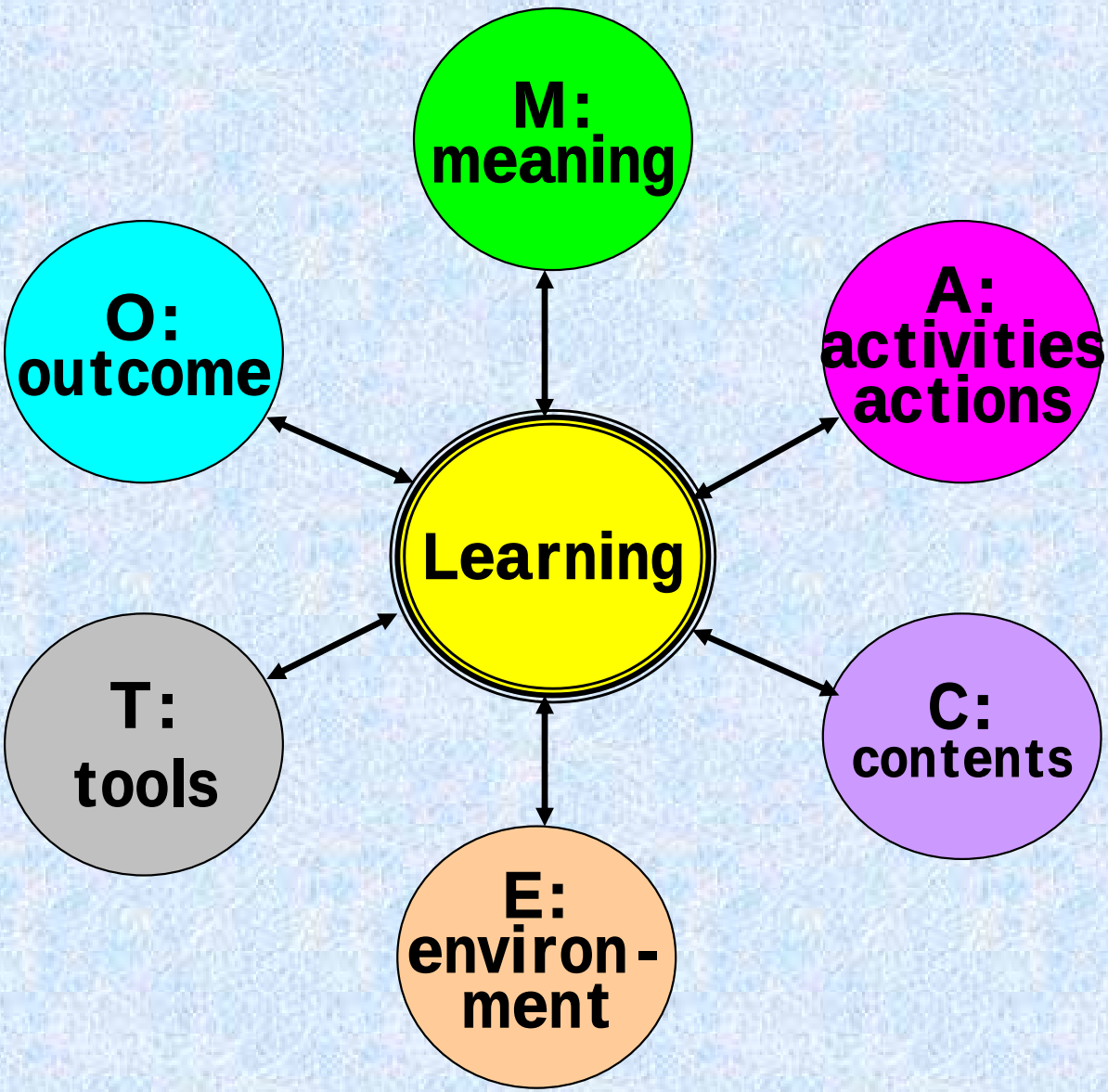
MACETO Module (Sequential)

L01	L02	L03	L04	L05	L06	L07	L08	L09	L10	L11	L12
Orientation/self-introduction/survey	Team composition/ Learning theme	Right of Learning/ Concept of new school	Expression of new school using PowerPoint	Presentation of the school to other teams	Right of Learning/ Plan of learning condition	Plan of virtual class teaching using images	From images to models	Synthesis and Analysis of components and study of teaching	Structure and sequencing of MACETO Module	Completion of MACETO Module and presentation	Writing of final report and evaluation

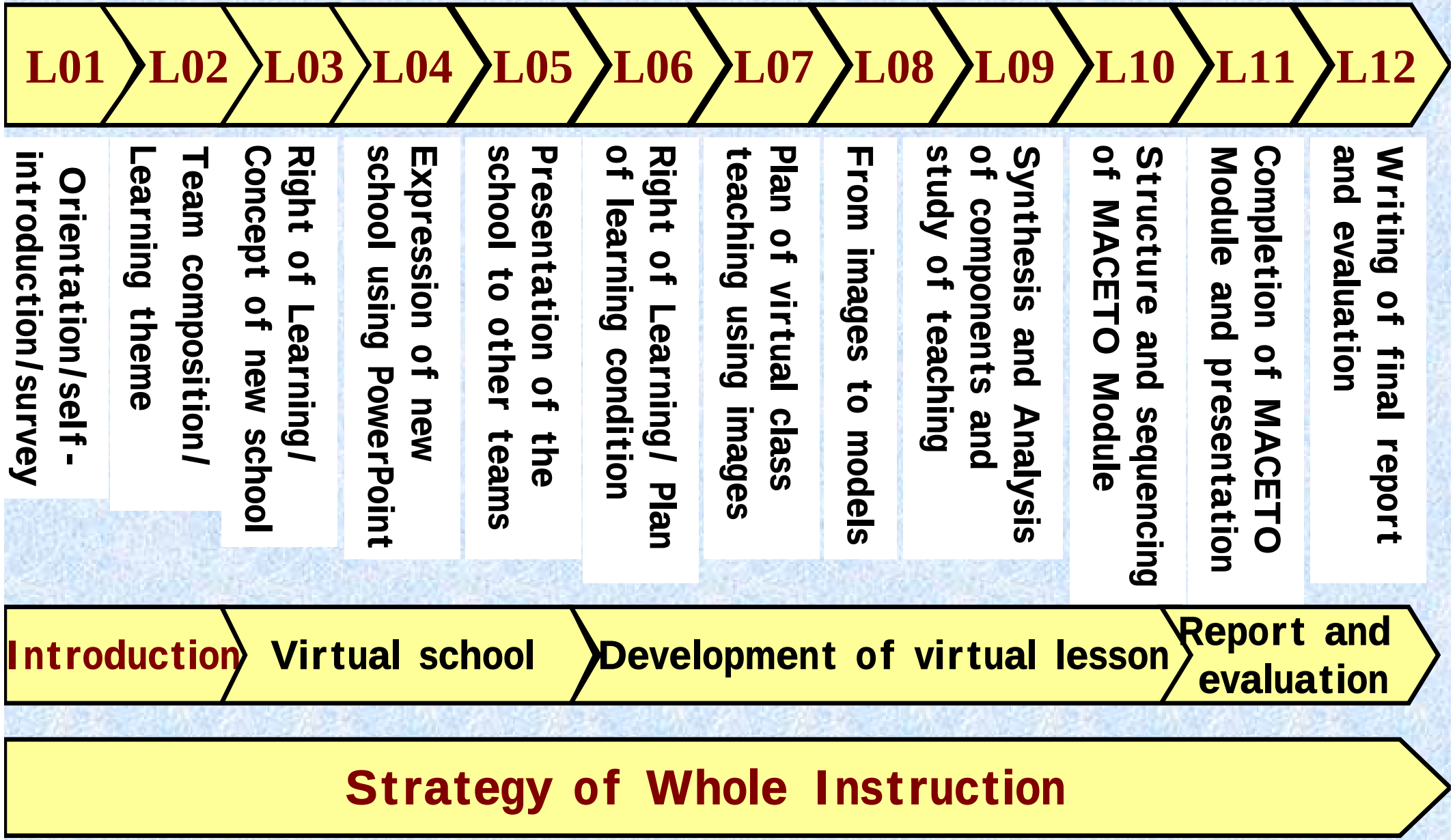
Introduction | Virtual school | Development of virtual lesson | Report and evaluation

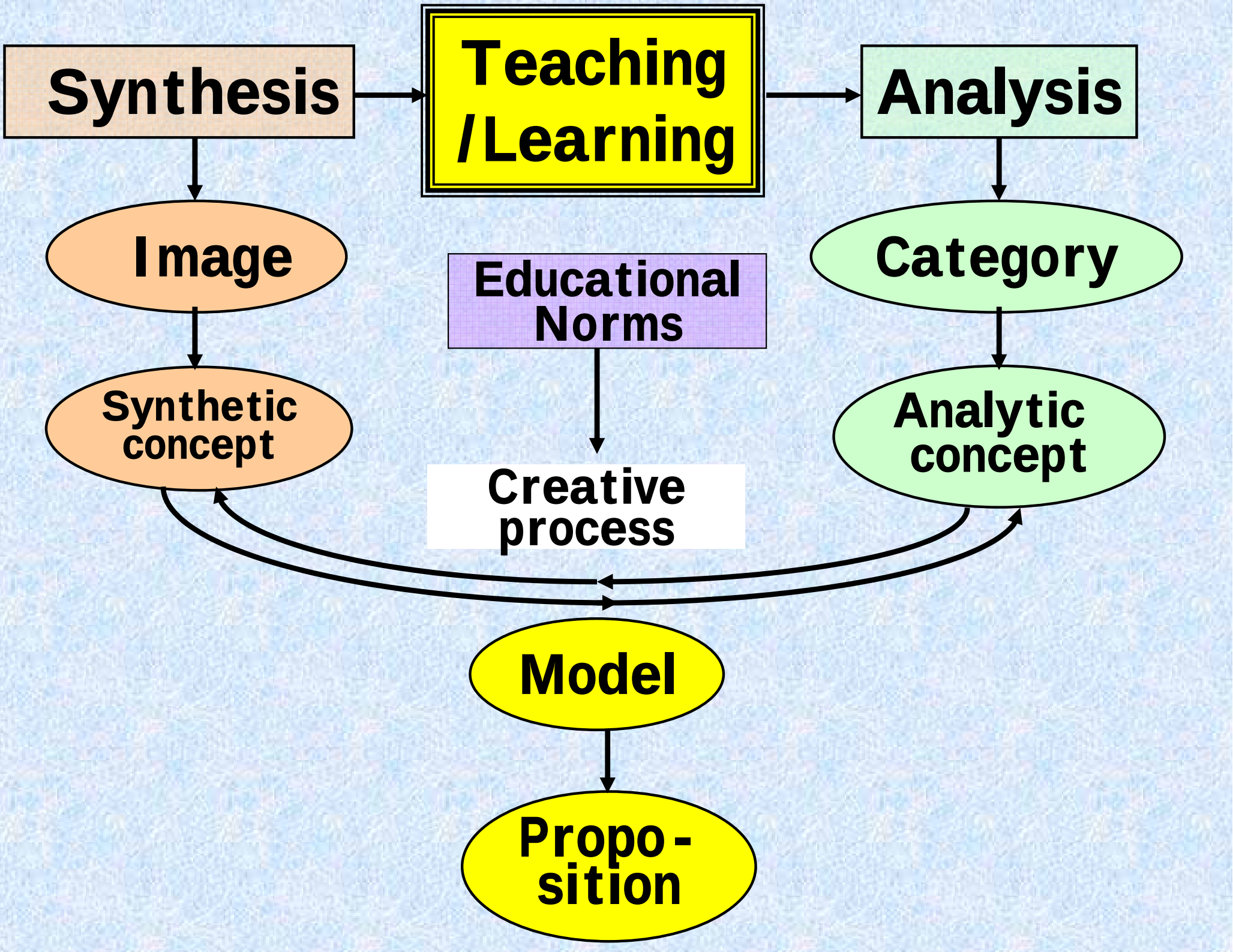
Strategy of Whole Instruction

MACETO Module (Structural)



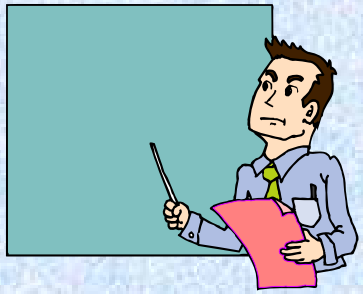
MACETO Module (Sequential)



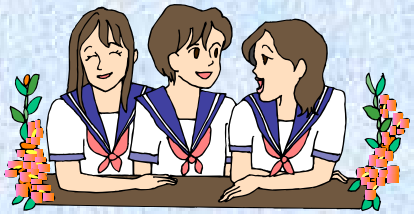

Synthesis
Teaching /Learning
Analysis
Image
Educational Norms
Category
Synthetic concept
Analytic concept
Creative process
Model
Propo-sition

Starting from Images

Teaching



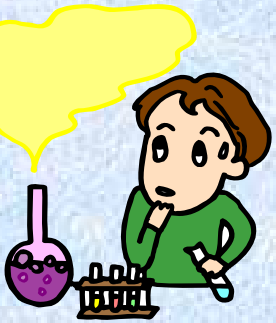
friendship



Examination

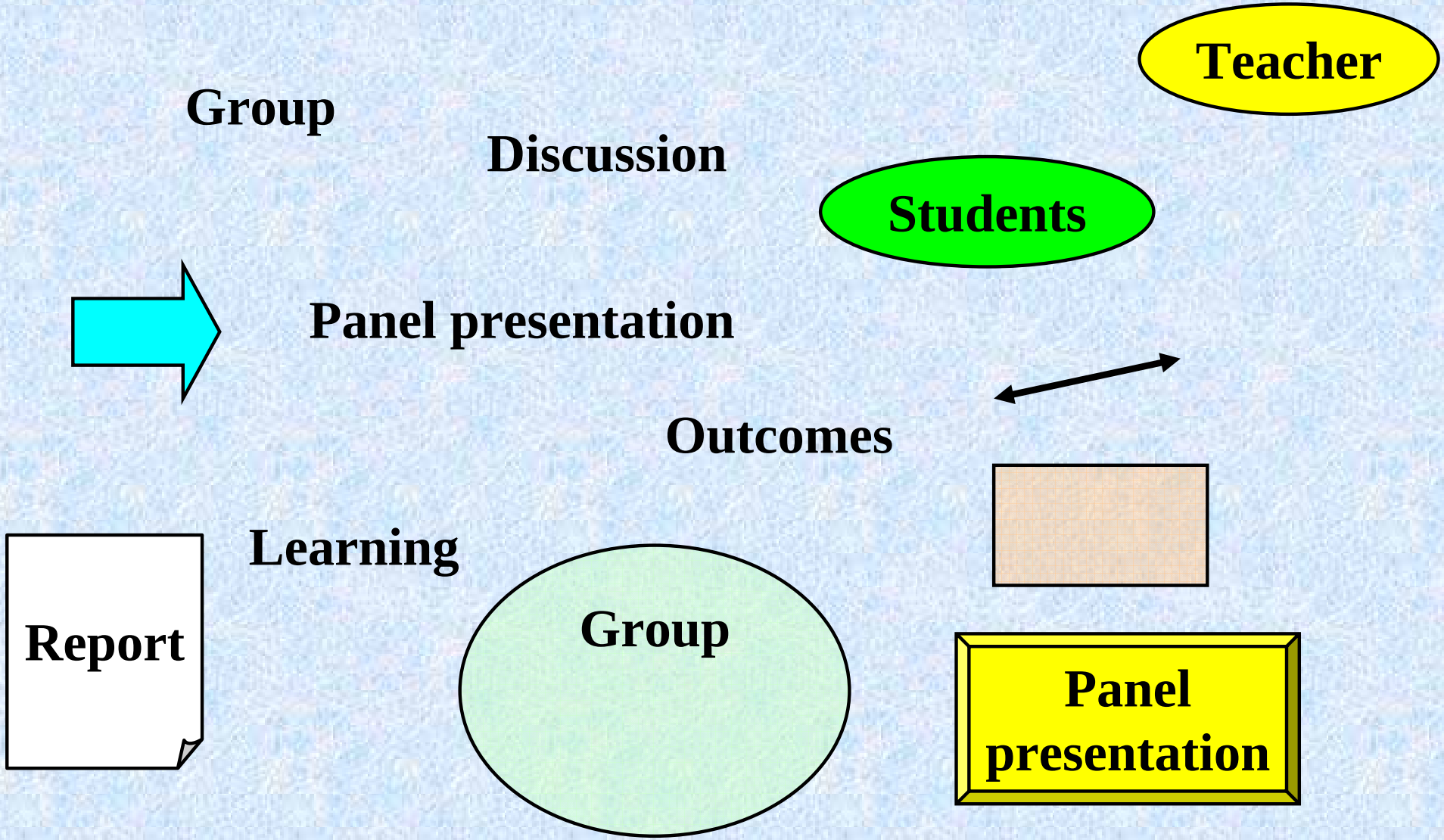
Favorite subject

hated subject

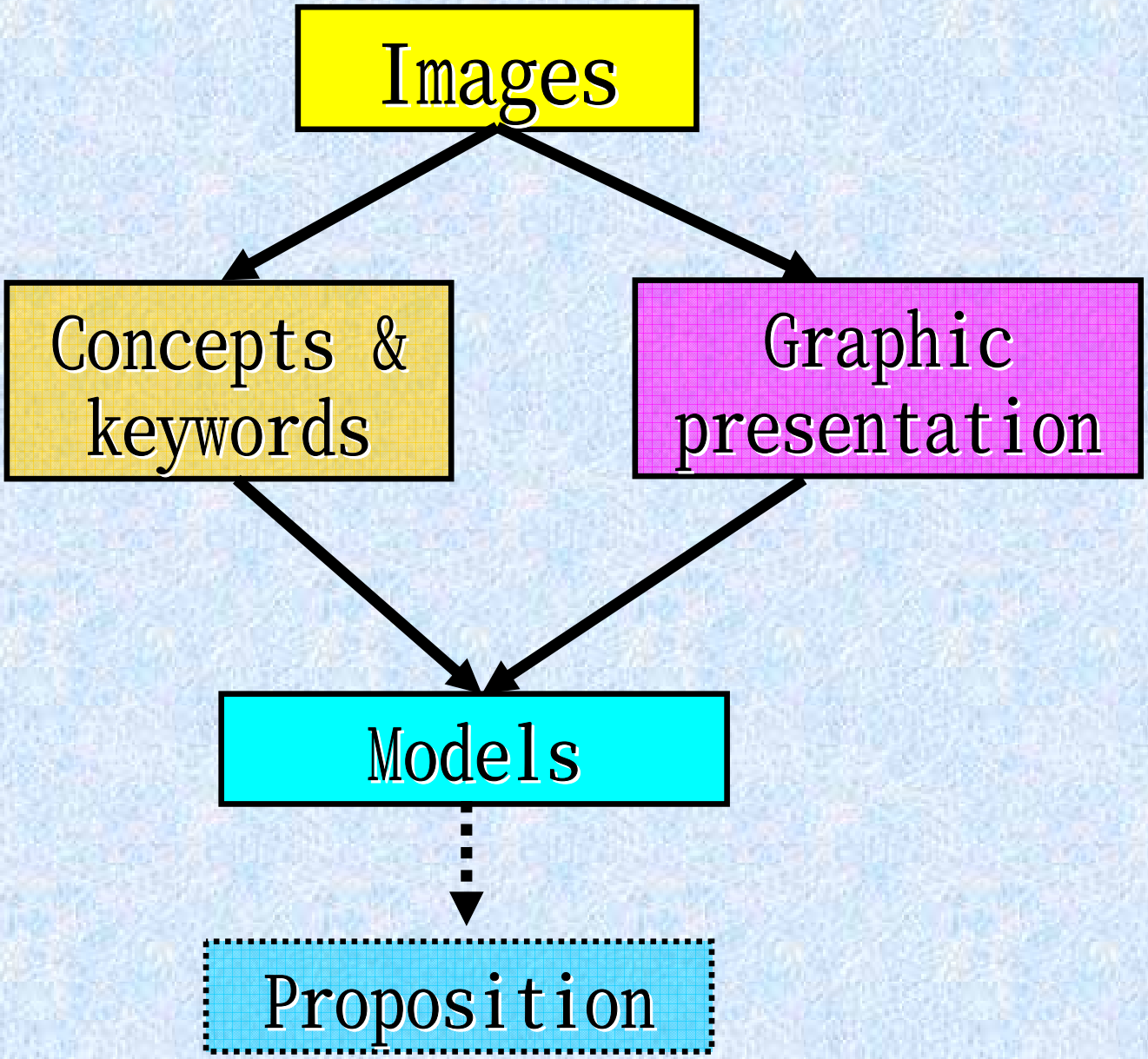


Enjoy learning

Keywords and graphic presentation for modeling



From Images to Models



The First Step

Conventional lesson

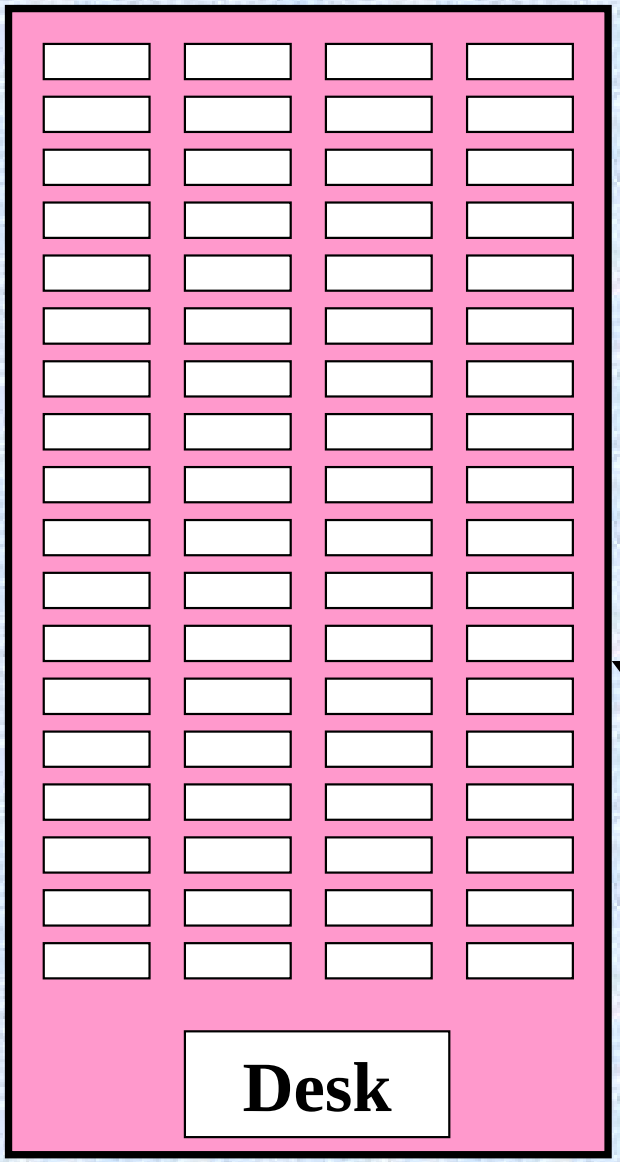
Friday 4:10-5:40

Number of students: 228

Capacity of lecture room : 300

Design of learning space

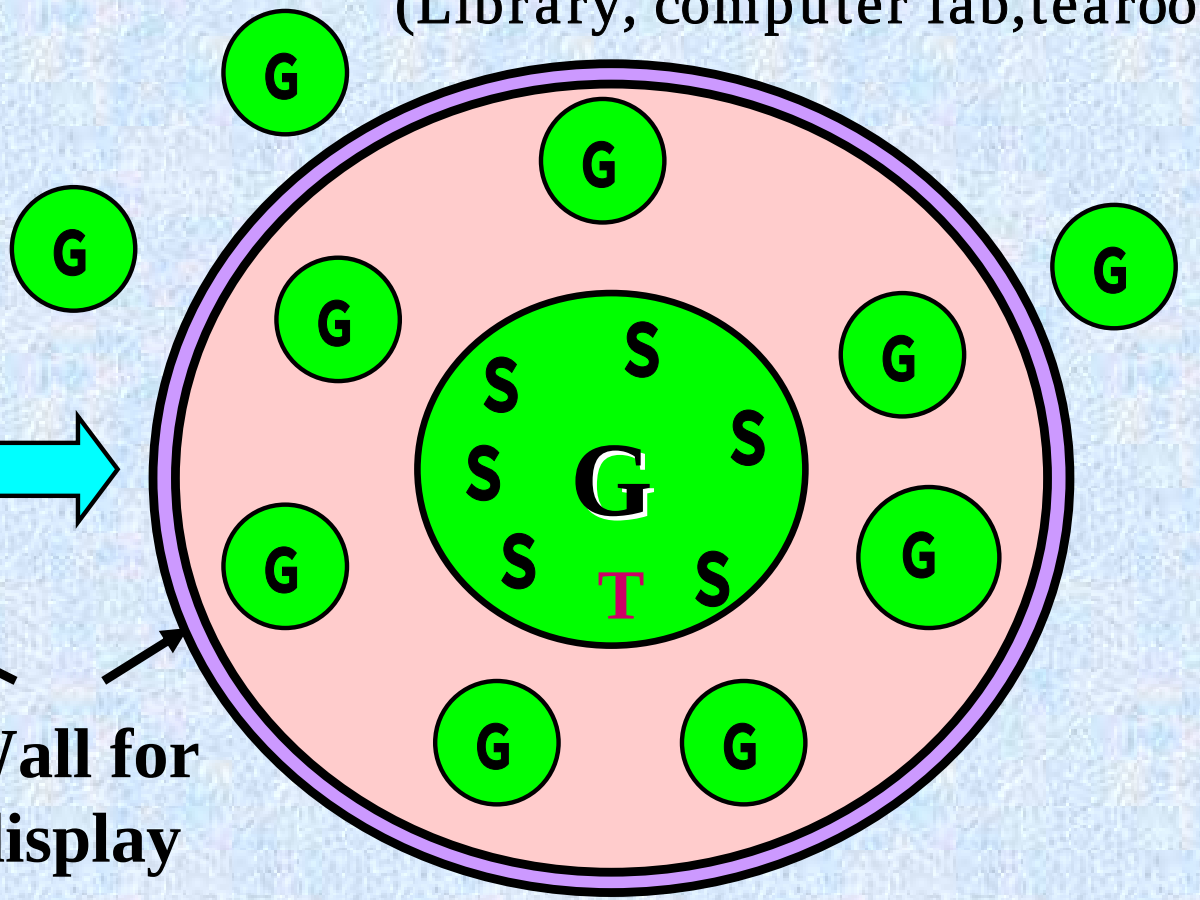
(4persons×4desks)
×30 rows



Physical configuration of classroom

Wall for display

Out of classroom
(Library, computer lab,tearoom)



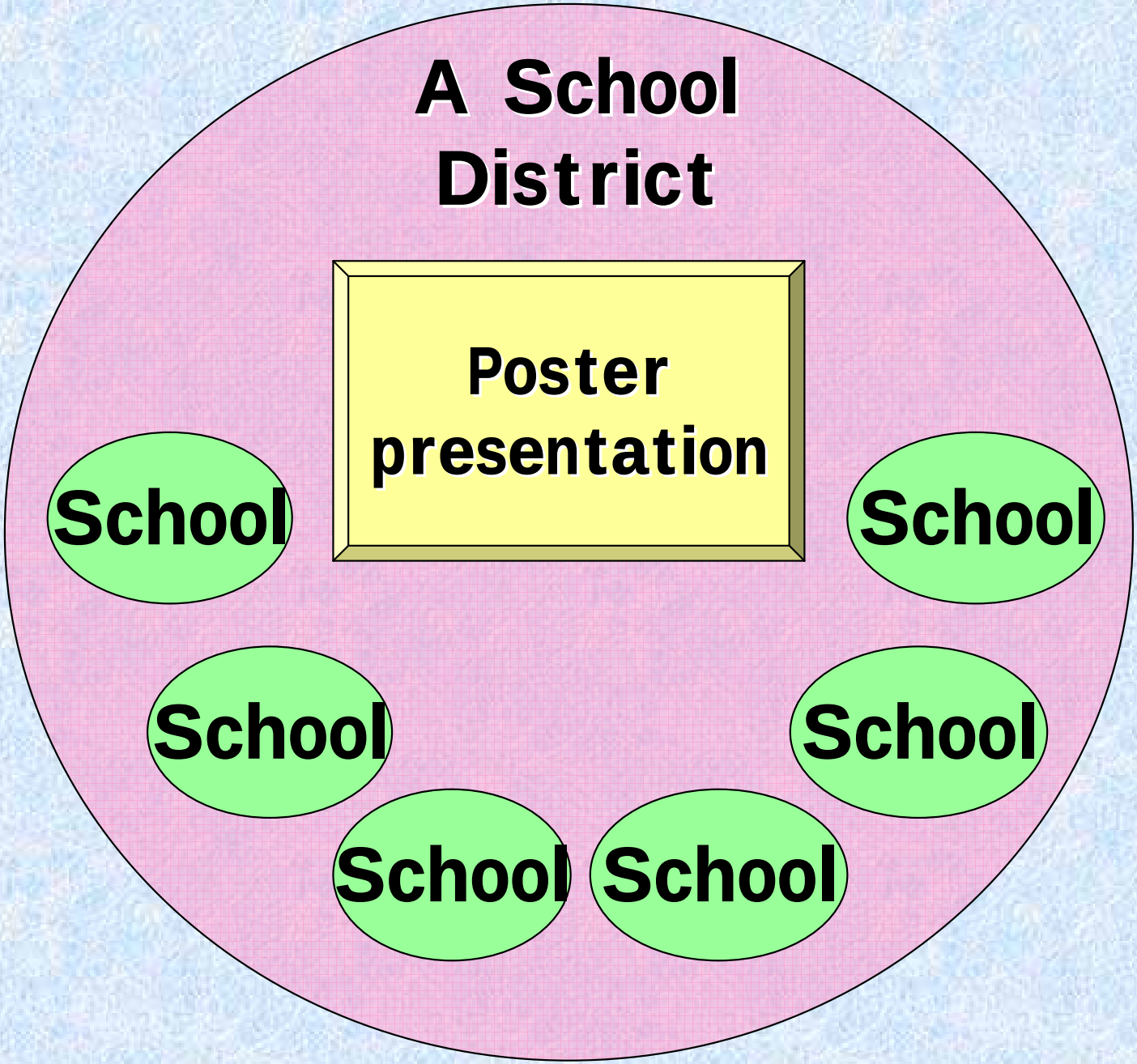
Conceptual model of classroom

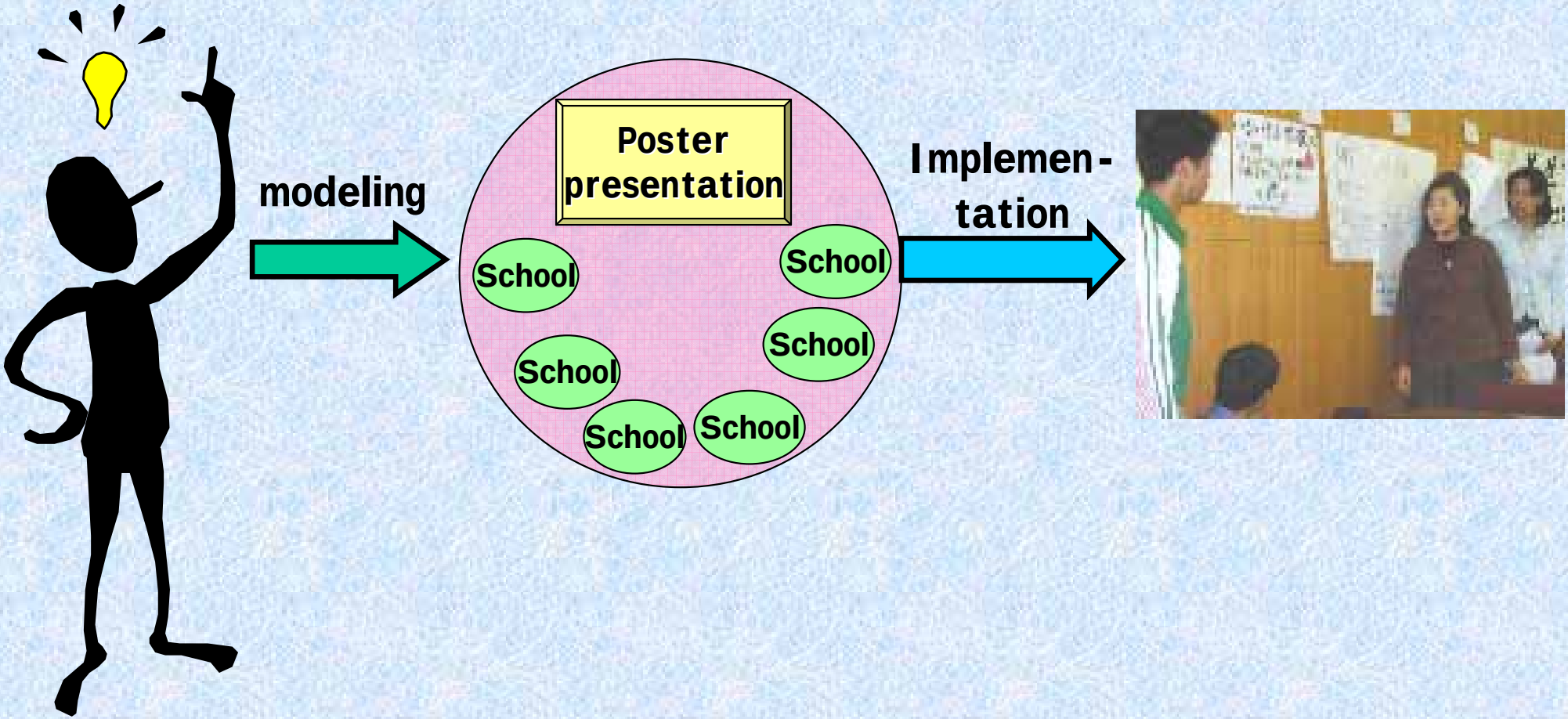
G Group

S：Student

T：Teacher

How can schools collaborate each other ?

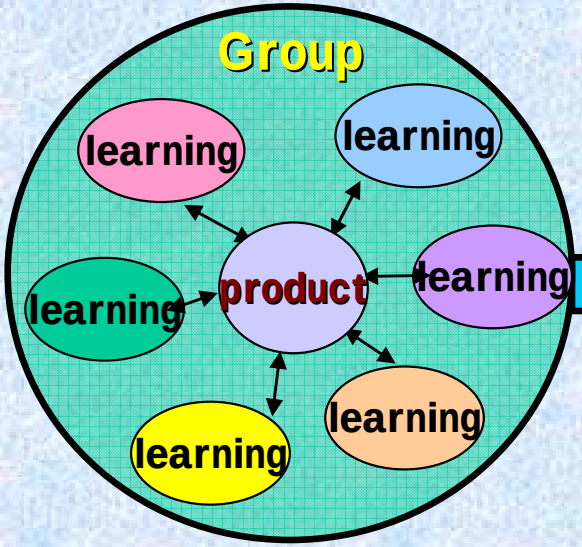



modeling
Poster presentation
School
School
School
School
School
School
Implemen-tation


いきいき小学校
教育目標
・自主自立・福祉理解
・情報・国際性・学ぼうとする力
4本の柱
◎1～6年の学年制
イメージ図
自然
地域
学校

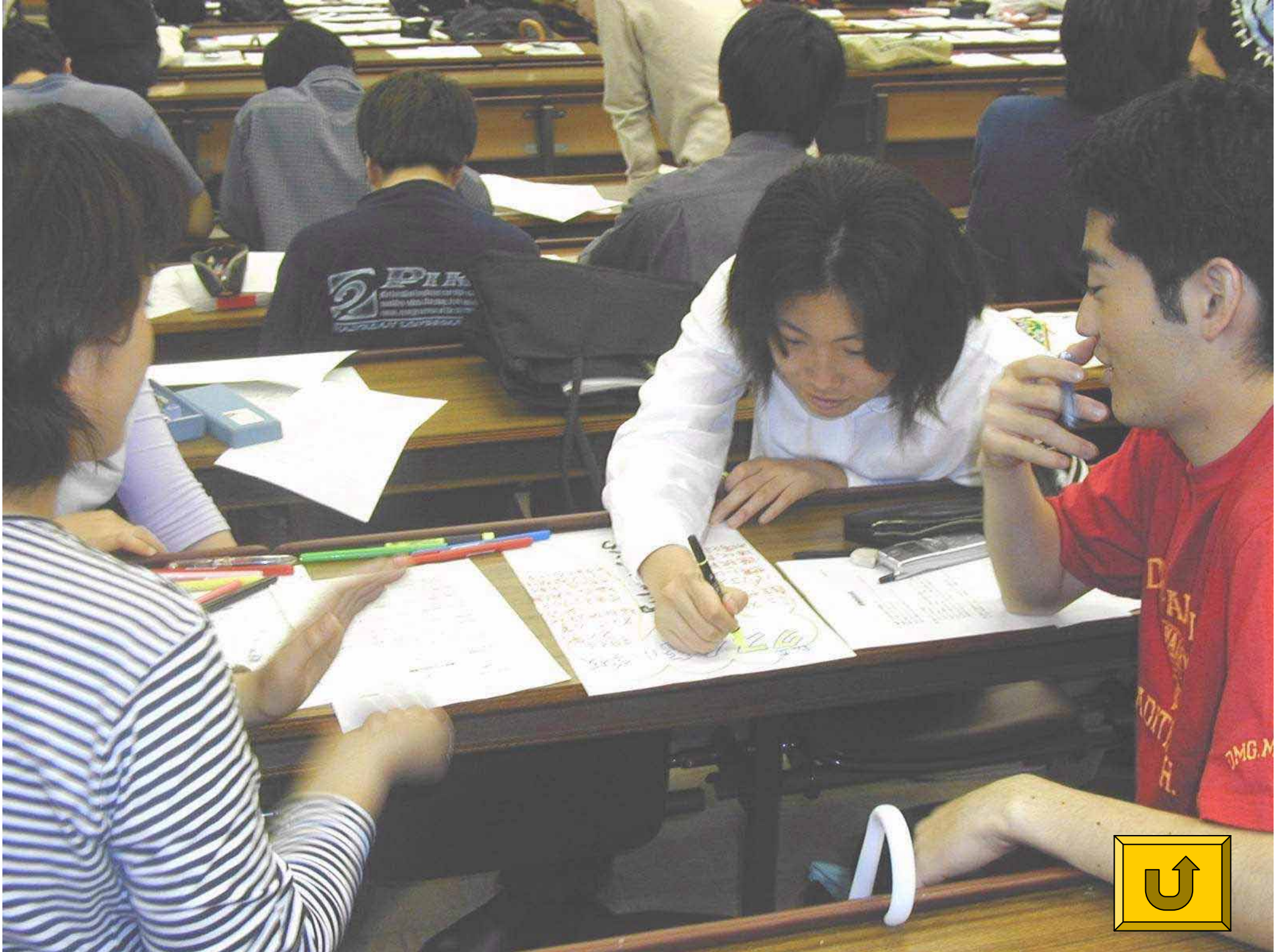
Model for creating a lesson plan

modeling

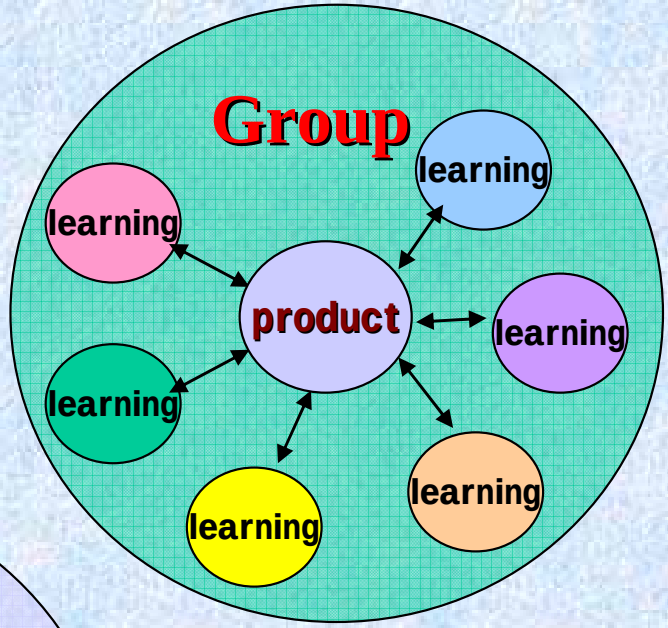


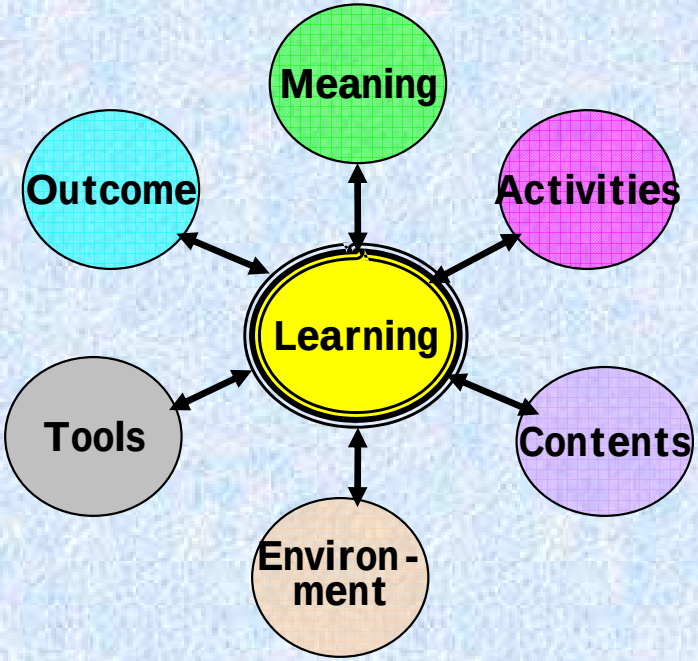
Implemen-
tation

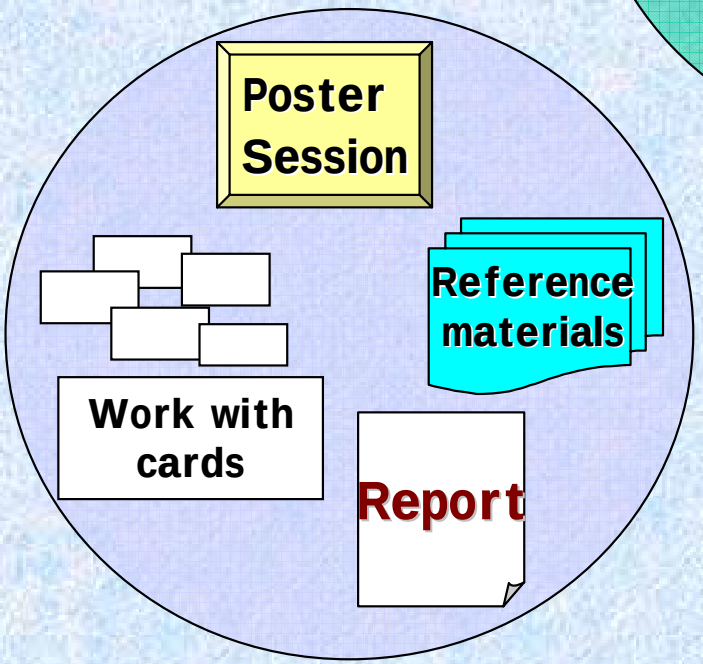
Model for product oriented group work

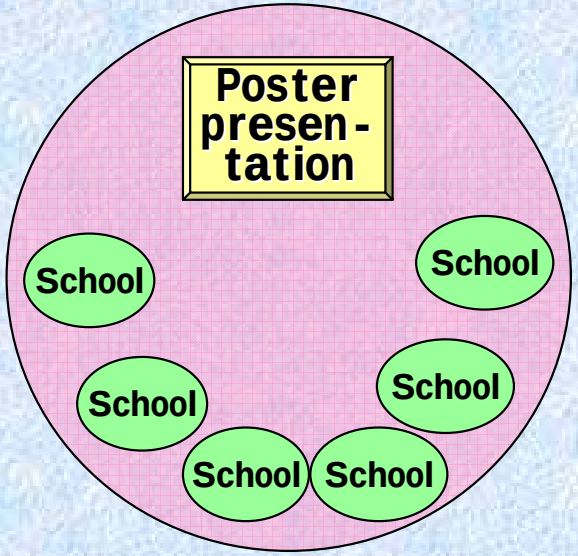


Examples of Modeling









The Second Step

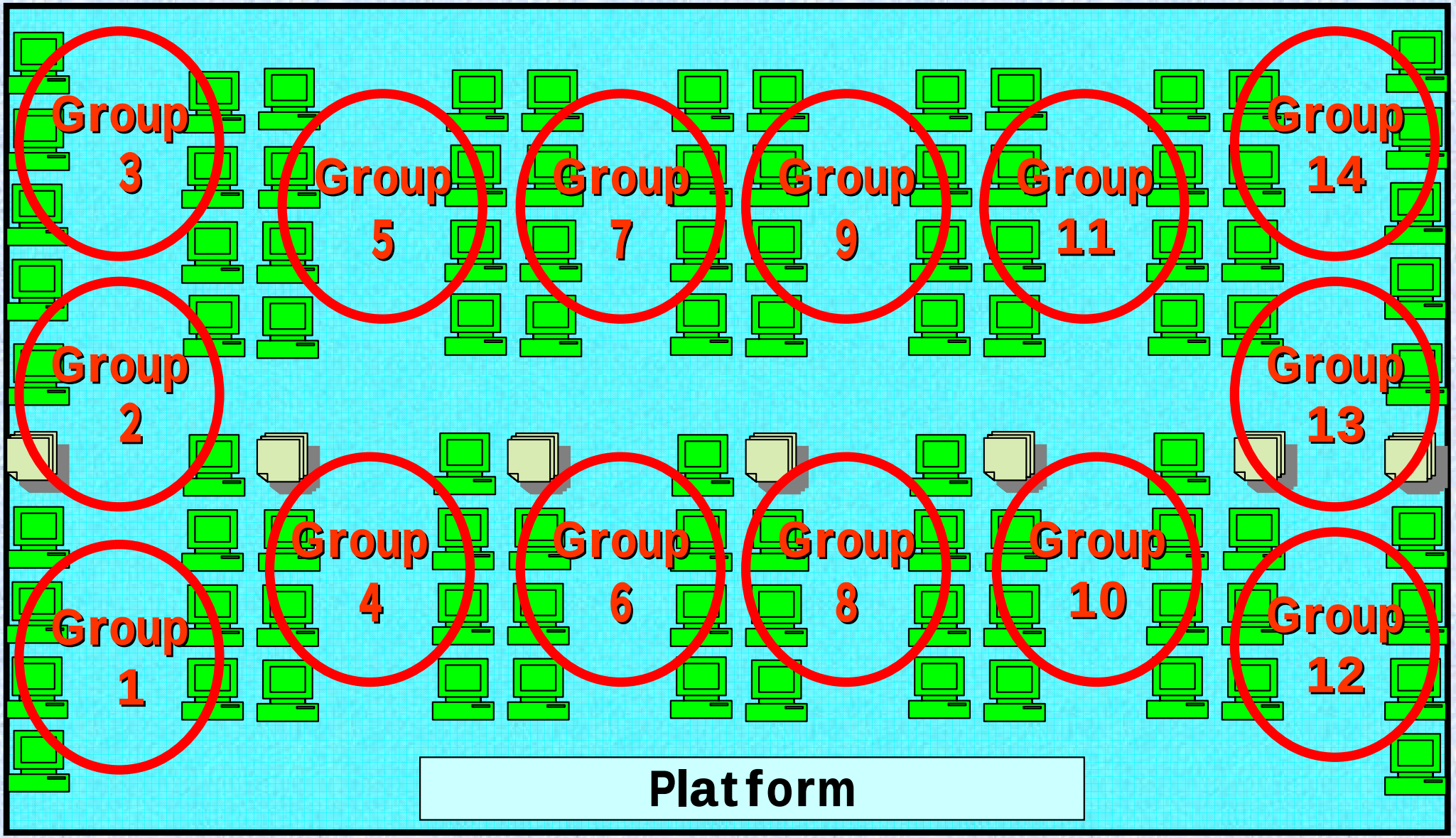
Computer laboratory lesson

Friday 10:40-12:10

Number of students: 78

Capacity of laboratory: 93

Group Configuration in Computer Laboratory



The Third Step

(1) School-Based Curriculum Development at Distance

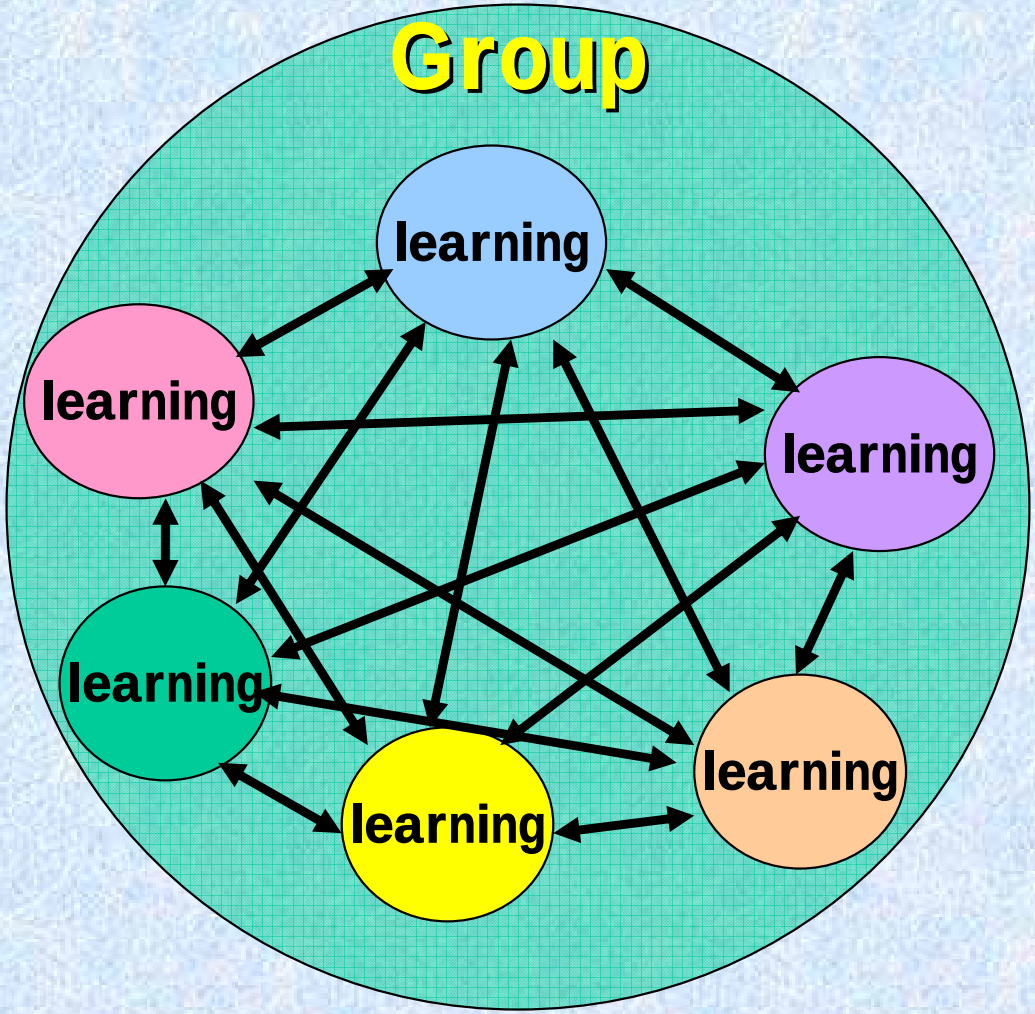
- **To implement the organizational curriculum development at school**
- **To keep the distance learning at Master Degree level**

(2) Ubiquitous Network at Remote Area

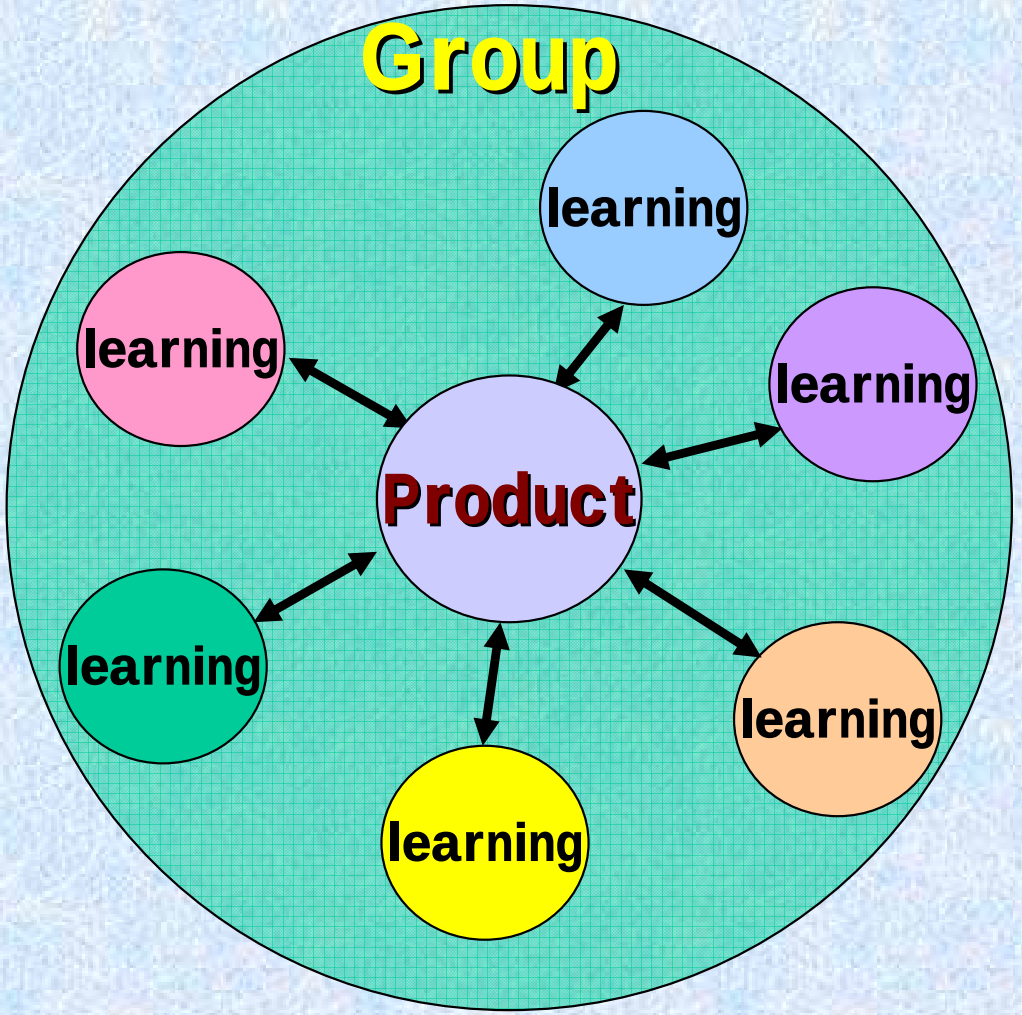
Ubiquitous Network

- **Ubiquitous Network is a new concept developed by a group of Nomura Research Institute**
- **Cellular phone, PDA(Personal Data Assistant) and other personal equipment are connected by broadband wireless**
- **People are free from any wire to communicate each other at distance**
- **'Bluetooth' technology is one of new broadband technologies**

Learning in group

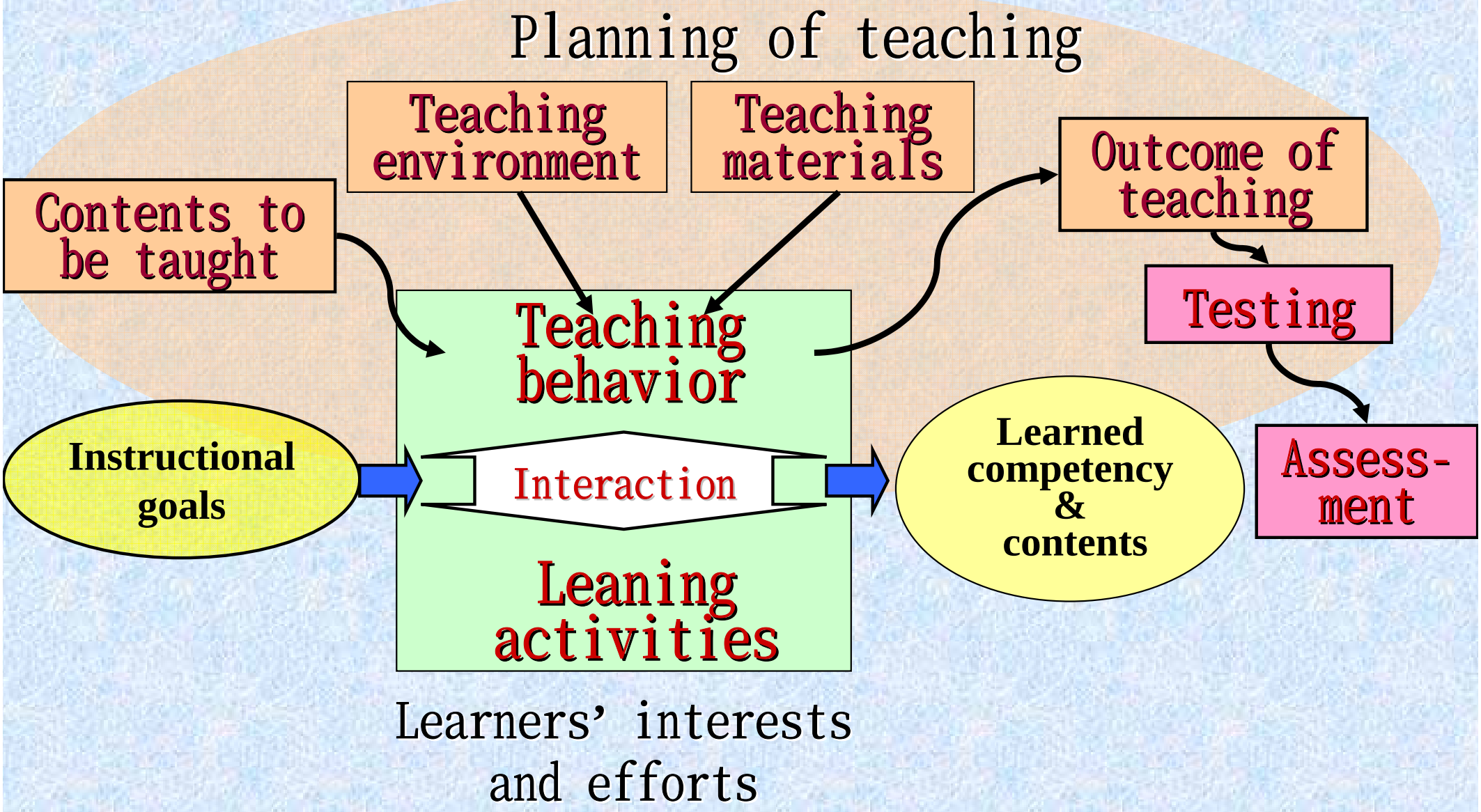


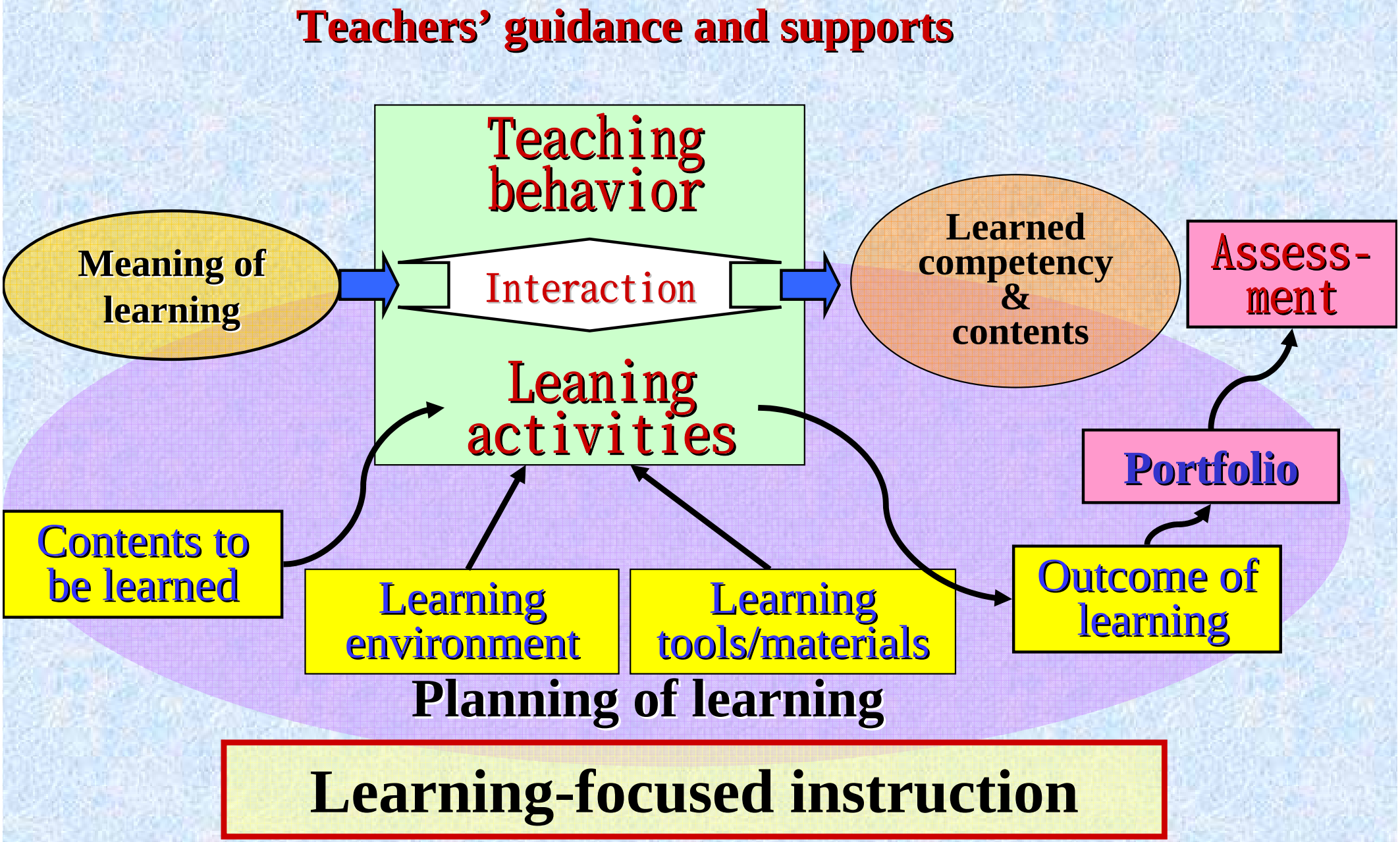
Communication oriented

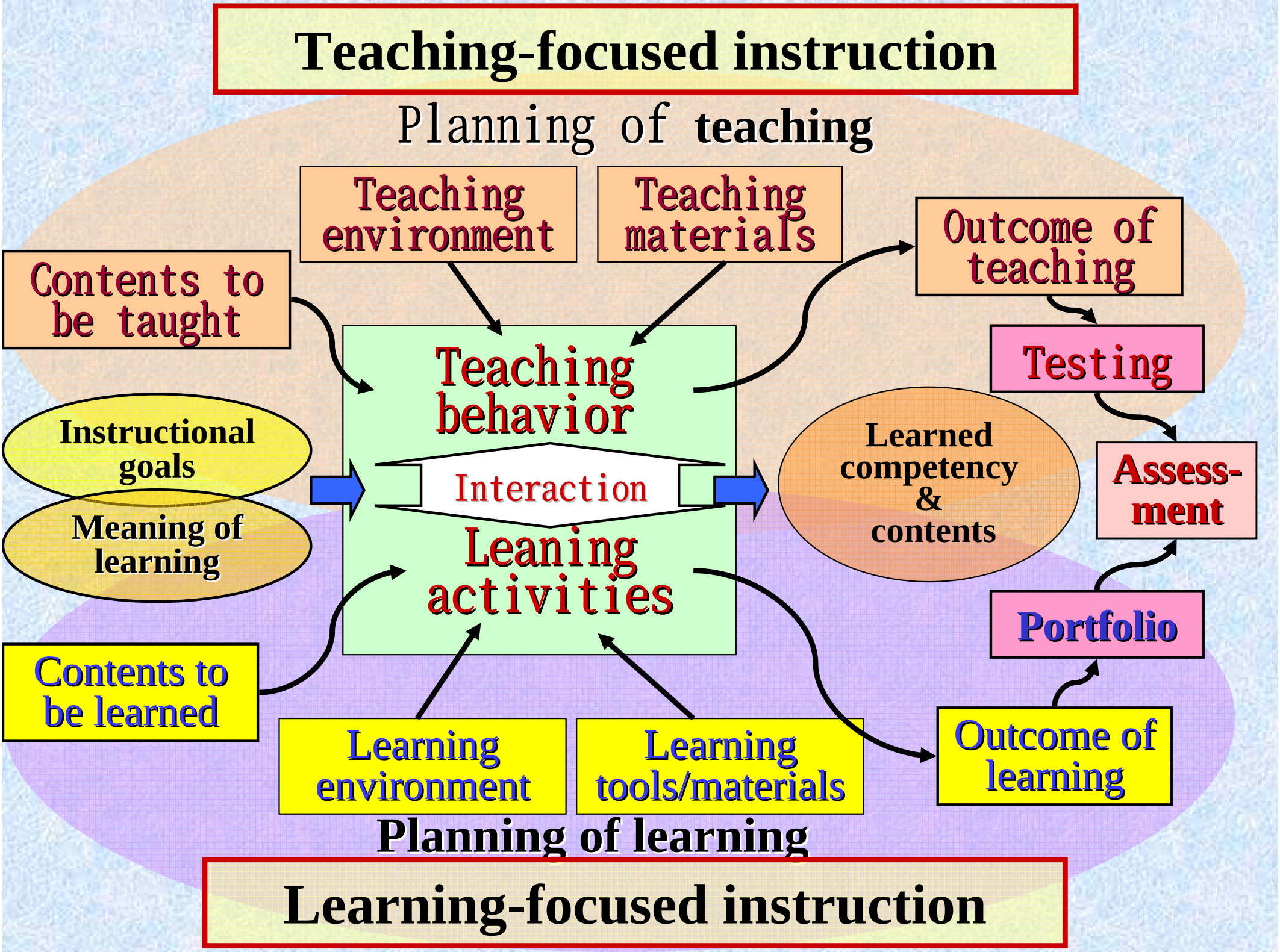


Product oriented

Teaching-focused instruction




Teachers' guidance and supports
Teaching behavior
Interaction
Leaning activities
Meaning of learning
Learned competency & contents
Assess-ment
Portfolio
Contents to be learned
Learning environment
Learning tools/materials
Outcome of learning
Planning of learning
Learning-focused instruction


Teaching-focused instruction
Planning of teaching
Teaching environment
Teaching materials
Contents to be taught
Outcome of teaching
Testing
Teaching behavior
Instructional goals
Meaning of learning
Interaction
Learning activities
Learned competency & contents
Assess-ment
Portfolio
Contents to be learned
Learning environment
Learning tools/materials
Outcome of learning
Planning of learning
Learning-focused instruction

Suggestions from these lessons

Five Principles (ACCRR) for Group learning

- Autonomy
- Collaboration
- Contribution
- Responsibility
- Respect

Integration of Group and Personal learning

Four Steps for knowledge production

- Imagination → tacit knowledge
- Modeling → models
- Implementation → modules(MACETO+sequence)
- Reflection → propositions, if possible
  empirical laws on instruction