COLLABORATIVE LEARNING

TED, Ankara, Turkey
October, 22, 2015 – Second Day of Workshop for Academics
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Today's programme

9.30-11.00 Socio-constructivist learning theory and collaborative learning/ cooperative learning

11.00-12.00 Group dynamics and challenges / problems of learning in group -

12.00-13.00 LUNCH

13.00-14.00 Enhancing creativity

14.00-15.00 Centre for Research and Development of Higher Education and Programme of University Pedagogy (60 ECTS)

15.00-15.30 Break, coffee, teac

15.30-17.30 Tripartite debate and other means for a group work of contradictory, sensitive issues.

Further reading: Johnson & Johnson

Principles of active learning

- Student is responsible of his/her learning process
- Student's role as an active learner
- A teacher is a facilitator of students' learning process
- Vygotsky: Zone of Proximal Development
  - Teacher supports a student to achieve the learning goals
- Collaborative learning
  - Distributed cognition, shared expertise
- Co-operative learning
  - Working in groups,

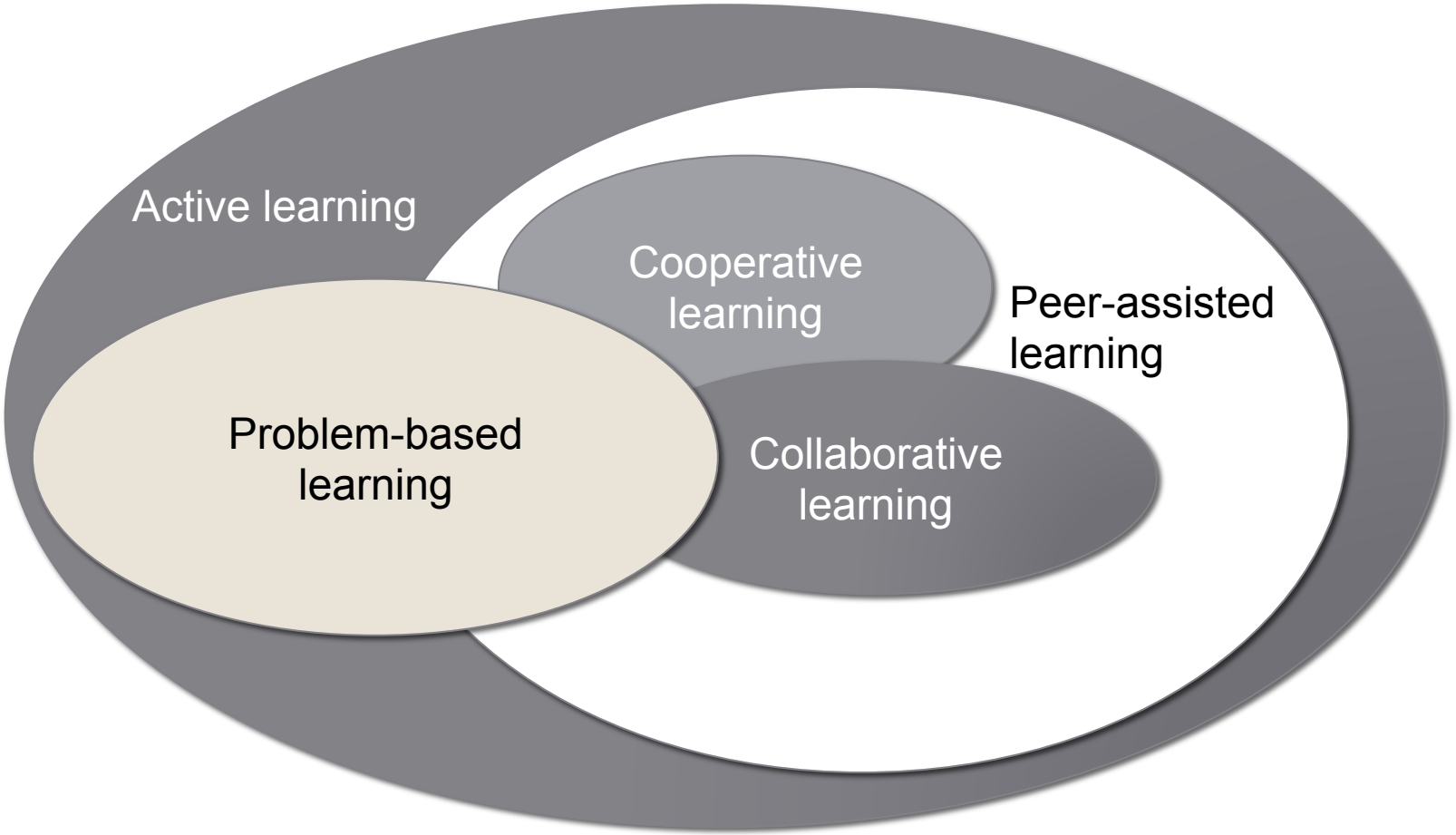
Collaborative or cooperative learning

Collaborative

- Social constructionist philosophy – knowledge is social construct
- Piaget
- Teacher is facilitator
- Dialogue
- Open tasks / problems
- No specific roles

Cooperative

- The methodology of choice for foundational knowledge
- Vygotsky
- Teacher has authority
- More structured
- Specific, defined tasks
- Specific roles for group members


Active learning
Cooperative learning
Peer-assisted learning
Problem-based learning
Collaborative learning

Learning theories and creativity

- Constructivism
  - Learning is not passive reception – it is active (re)construction of knowledge
- Sociocultural approach
  - Creativity and innovation are basically group processes
  - Group flow processes
    - Innovation emerges from bottom up, not top down
    - Innovation needs time to emerge (Sawyer, 2012)

How to answer?

- Higher education aims to produce
  - creative and new ideas
  - innovative solutions based on research and development activities in all its' fields
- Teaching and learning in higher education
  - should promote creativity and innovations
  - new insights and new solutions

Learning as reproduction of old ideas may not be the best answer to creation of new knowledge and to solve problems

Collaborative learning and group processes

- PBL (Problem-based Learning) activates and promotes collaborative learning
  - Seven jump – method to guide participants through problem solving process
  - Internal and external dynamics in tutorial groups (Hammar Chiriac, 2008)
- Group processes
  - Interpersonal and intrapersonal actions related to group productivity
  - Positive social interdependence
  - Cooperative, competitive and independent learning processes
- Group roles (Johnson & Johnson 1998; 2000)
  - The role dimensions of cooperative work (rejecting, dominating, encouraging, conforming, sharing know-how and avoiding)
- Interaction, communication
  - Shared learning
  - Knowledge creation (Nonaka & Takeuchi, 1995; Nonaka & Konno, 1998)
- Cognitive growth relies on collaboration by a community of learners (Wenger, 1998).

PROBLEM-BASED LEARNING

(Hmelo-Silver, C. E. (2004). Problem-Based Learning: What and How Do Students Learn? *Educational Psychology Review*, Vol. 16, No. 3, 234 – 266)

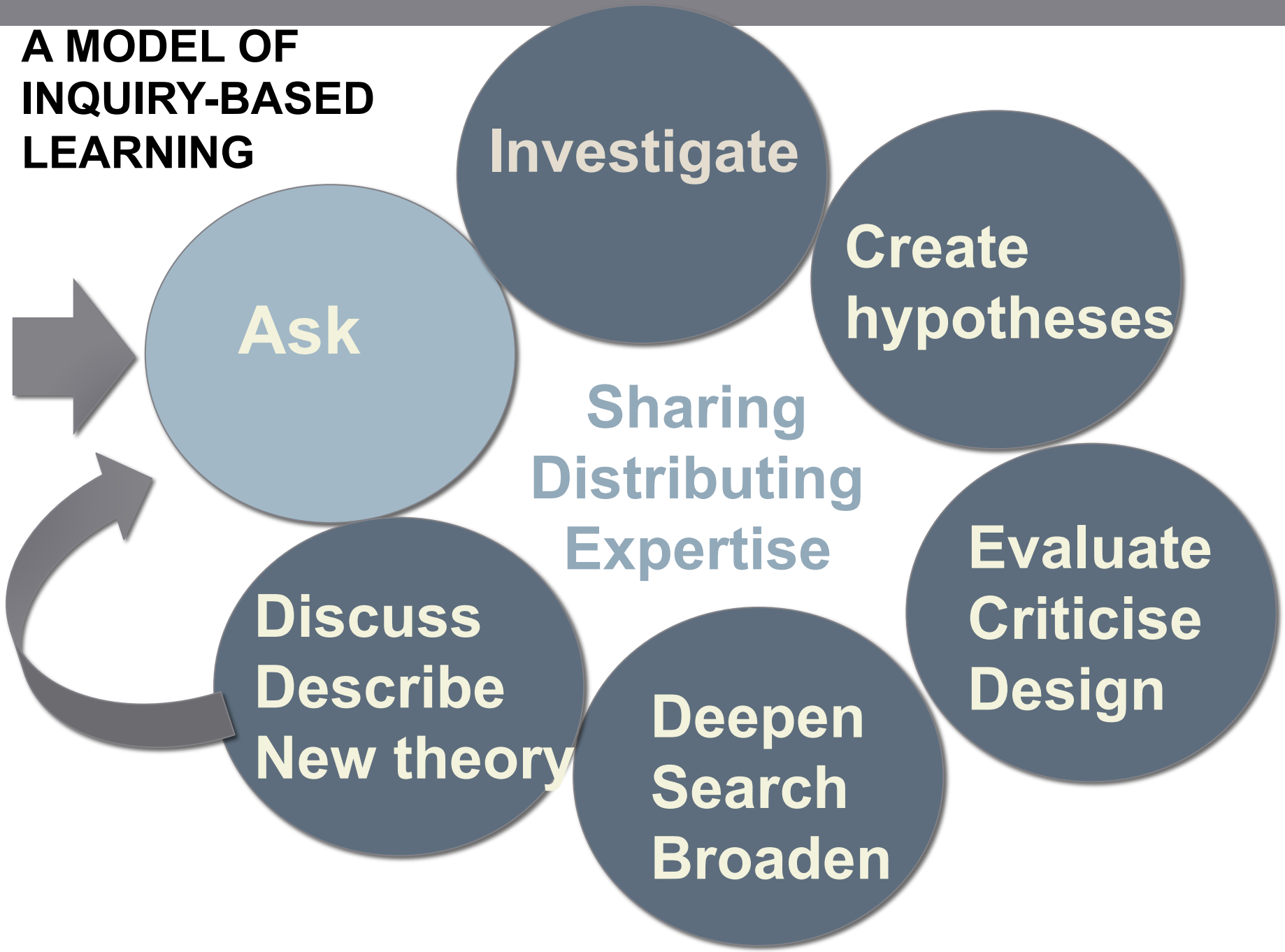
Theoretical background of PBL

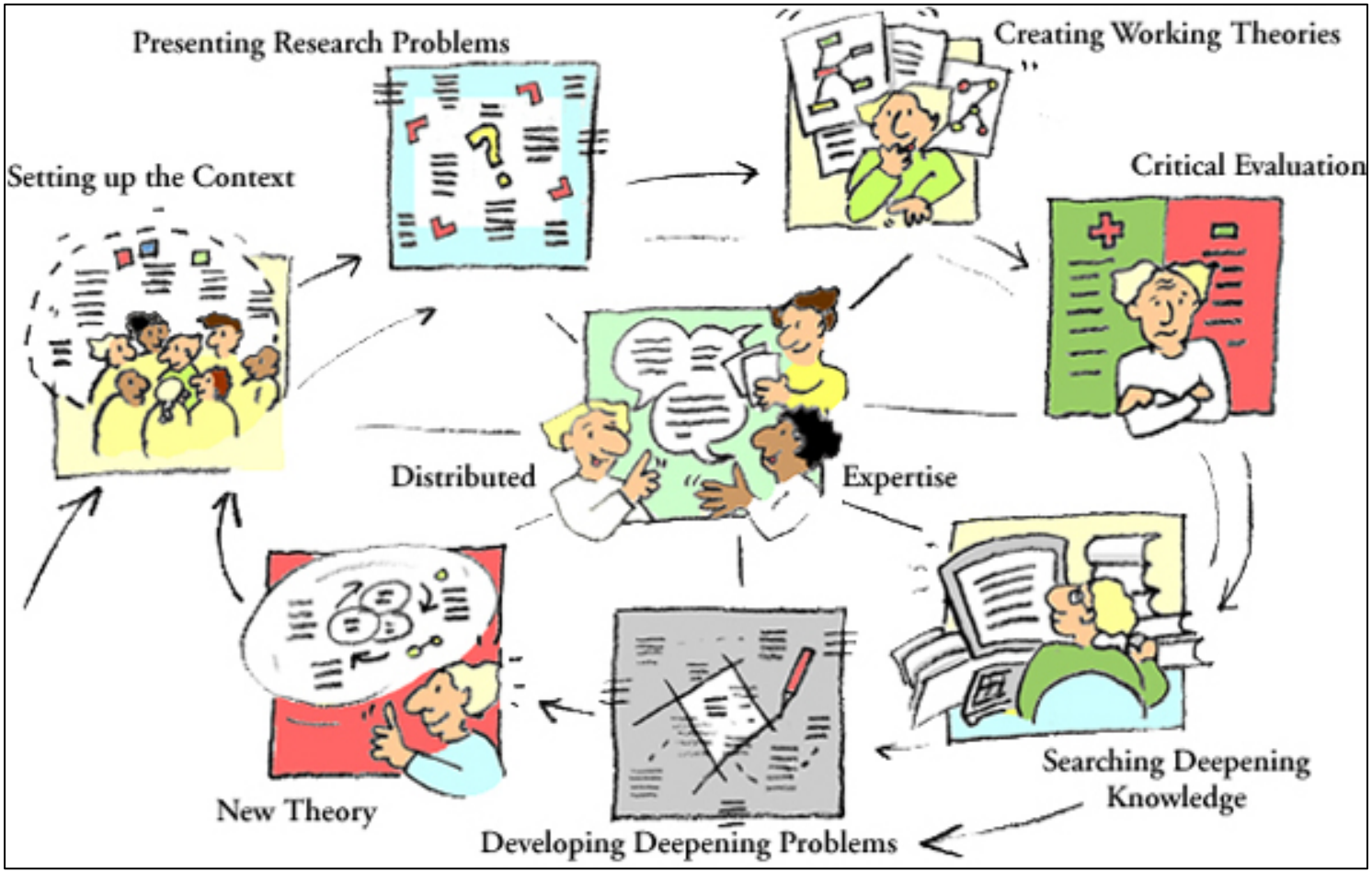
- Originally developed in the field of medical education
- Developed based on tradition of meaningful, experiential learning
- Students learn by solving problems and reflecting on their experiences (Barrows and Tamblyn, 1980).
- Emphasis on Self-regulated (SRL) and self-directed learning (SDL): Students become **responsible for their own learning**, which necessitates (1) reflective, (2) critical thinking about what is being learned (Bereiter and Scardamalia, 1989).

THREE TYPE OF LEARNING WITH SOLVING PROBLEMS (Hmelo-Silver, 2004)

- **PBL:** Realistic, ill-structured problem such as medical case of patient or teaching/assessment situation
- **Anchored Instruction:** Problem is presented as video-based story introducing and challenging students to determine how the problem may be solved, e.g. video-based story of housewife's normal day and hopes for better
- **Project-based science/Inquiry-based learning:** Problem is as a driving question "What kind of political system is in Italy?"

A MODEL OF INQUIRY-BASED LEARNING





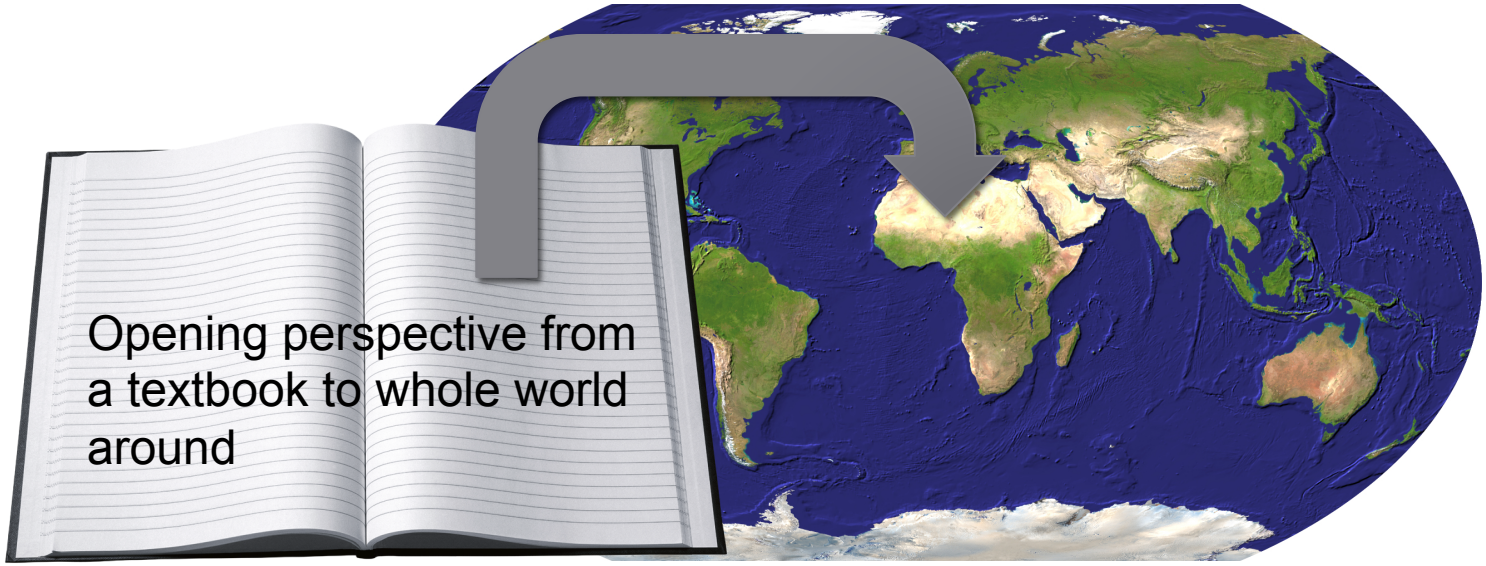
Model of Inquiry-based learning, Hakkarainen, Lonka, Lipponen, http://mlab.uiah.fi/polut/Yhteisollinen/teoria_tutkiva_oppiminen.html

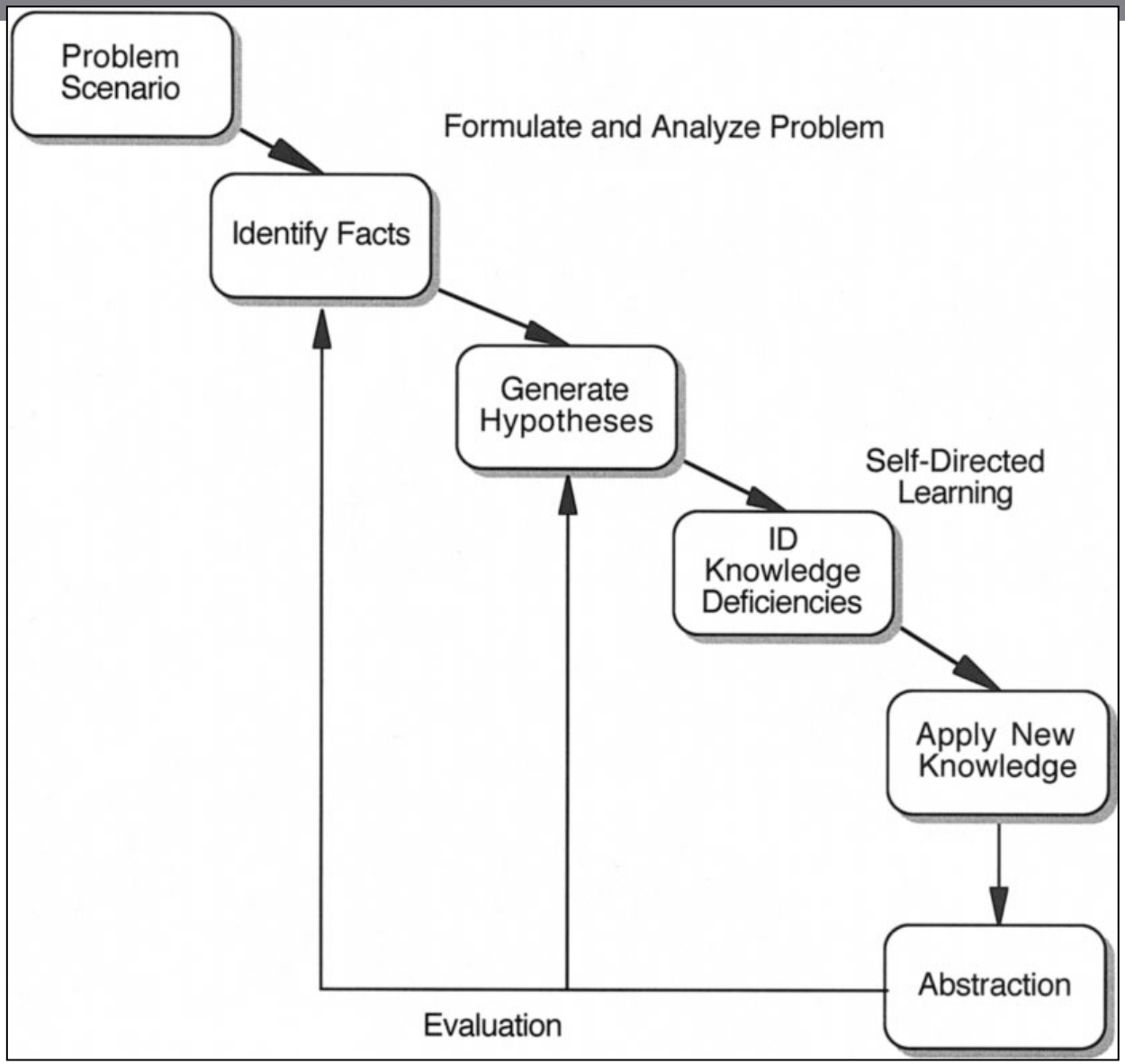
Approaches to learning situated in problem-solving experiences (Hmelo-Silver, 2004)

	PBL	Anchored instruction	Project-based science
Problem	Realistic-, ill-structured	Video-based narrative ending in problem	Driving question
Role of problem	Learning new information and reasoning strategies	Shared experience to solve the problem	Scientific inquiry process
Process	Identify facts, generate ideas, reflect	Guided planning and sub-goal generation	Prediction, observation explanation cycles
Role of teacher	Facilitator	Engaging students in learning, instructing if needed	Introducing relevant content
Collaboration	Negotiation of ideas, individual student bring new information	Negotiation of ideas and strategies in small groups and whole class	Negotiation of ideas with peers and local community members
Tools	Structured white-board, post-it, etc Student-identified learning materials	Video controller, problem specific (e.g. maps, compasses, textbooks,)	Computer-based tools for planning, data collection, analysis, modelling and information-gathering

PBL aims to help students to

1) construct an extensive and flexible knowledge base;
2) develop effective problem-solving skills;
3) develop self-directed, lifelong learning skills;
4) become effective collaborators; and
5) become intrinsically motivated to learn.





Kuvio 1. The problem-based learning cycle, Hmelo-Silver, C. E. (2004). Problem-Based Learning:What and How Do Students Learn? *Educational Psychology Review*, Vol. 16, No. 3, 234 – 266. Kuvio sivulla 237.

Goals for PBL

- Activation of Prior Knowledge by discussions in groups
  - Students learn better when they can related their prior knowledge to new information – i.e. they can construct new knowledge base
- Developing effective problem-solving skills, ability to apply appropriate metacognitive and reasoning strategies
  - Different problems necessitate students to use different reasoning in order to solve a problem
- Skills to design, plan and direct own learning (SRL; SDL)
  - Long-term motivation, persistency, help-seeking skills
- Becoming a good collaborator
  - How to work in various groups, teams, and how to cooperate with others
- Intrinsic motivation
  - Own interest, challenge, sense of satisfaction when learning

Group – for better for worse?

- List in your peer group problems your have met when your students have studied in groups (5 min)

SHARE:

Each peer group is allowed to mention one method during their turn.

All peer groups add to their list the problem if it is not in their own list.

Group work - for better not worse

- In each group, select one problem of group work. Problem that you may find most difficult or challenging.
- Select one person as a host of your peer group.
- Describe the problem and find reasons why this problem occurs in group work.
- Create one practical solution how to enhance group work so that the problem is avoided.
- **Visiting other tables:** other group members leave the table and go another table. Host describes the problem and solution. The visiting group comments, questions, recommends how to improve the solution.
- Return to own group: Discussion and sharing

ENHANCING CREATIVITY AND CRITICAL THINKING BY GROUP WORK

Major challenges of todays world

- Climate change
- Information overload –”infobesity” (Alvin Toffler 1970, *Future Shock*)
- Technological development and digitalisation, internet, social media
- Urbanization and population overgrowth
- Ageing of population and increasing unemployment of young
- Ethical problems – human rights, equality, gender issues, religion, poverty, refugees, war etc..

Critical thinking

- willingness to engage in and persist at a complex task
- habitual use of plans and the suppression of impulsive activity
- flexibility or open mindedness
- willingness to abandon nonproductive strategies in an attempt to self-correct
- an awareness of the social realities that need to be overcome (such as the need to seek consensus or compromise) so that thoughts can become actions (Halpern, 1998)

Critical thinking - mindfulness

- Mindfulness is an affective state

- ‘‘…is an open, creative, probabilistic state of mind in which the individual might be led to finding differences among things thought to be similar and similarities among things thought different’’ (Langer, 1993, p. 44).
- “When individuals view information as conditional rather than absolute, and meaning as open for interpretation rather than being static, they are more likely to form new and creative associations and to identify novel uses for information.” (Mathews & Lowe, 2011, 61)

How learning in higher education may produce an innovative mind?

- Learning as
  - asking questions instead of finding answers
  - creative – finding new answers to old questions and vice versa
  - transformative -> application of learned in a new context
  - innovative – creating a new way of thinking, new solutions and new products
  - social and networked – rather than individual
  - ethical and value-conscious – rather than “value-free”

(Tynjälä, 2012)

How teaching in higher education may support creative and innovative learning?

- Inquiry-based and collaborative learning (learning community)
  - Problem-based learning
  - Team-based learning
  - Project-based learning
  - Etc…
- New concept for learning environment as
  - flexible and engaging to learning
  - from “classrooms” to dynamic learning spaces
  - combining classrooms with working life and society

How assessment may promote innovative and creative learning?

- Formative assessment
  - Where am I going? (goals?) – Feed up
  - How am I going? – Feed back
  - Where to next – Feed forward
- Feedback works on four level
  - Task level (How well tasks are performed?)
  - Process level (learning process needed to understand)
  - Self-regulation level (self-monitoring, directing)
  - Self level (personal evaluations

(Hattie & Timperley, 2007)

Group activity/discussion

Select one of the following themes:

- Teaching methods/techniques
- Learning activities (e.g. activating tasks, discussions…)
- Students' role
- Teacher's role
- Interaction
- Atmosphere

GROUP DISCUSSION:

- What you should consider/take account if you want to support critical thinking?

References

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JIGSAW TEACHING TECHNIQUE

Originally developed by Ellen Aronson with her colleagues (1978)

Why?

- Group work technique that makes students dependent of each other to succeed
- Minimises competition and enhances trust
  - Students succeed when they work together to achieve a common learning goal
- Sharing ideas and learning with peers enhances critical reflection, a student learns how peers may have diverse view points and approach the issue from a different perspective
- Learning to reflect – learning to self-regulate own learning
- Co-regulation – learning to adjust own behaviour to others

How?

- **Phase I Familiarising to the topic/issue**
  - A teacher divides students in heterogeneous groups
    - Home group A: Lisa, Marie, Peter, Jonas
    - Home group B: Jan, Marcus, Tina, Carla

  A teacher presents the topic, issue, material etc. to her class and clarifies why the topic is important, how it relates to other topics students have learned. A Teacher explains why students study in groups.

  Obs! In this phase it is important that students become motivated and interested in.

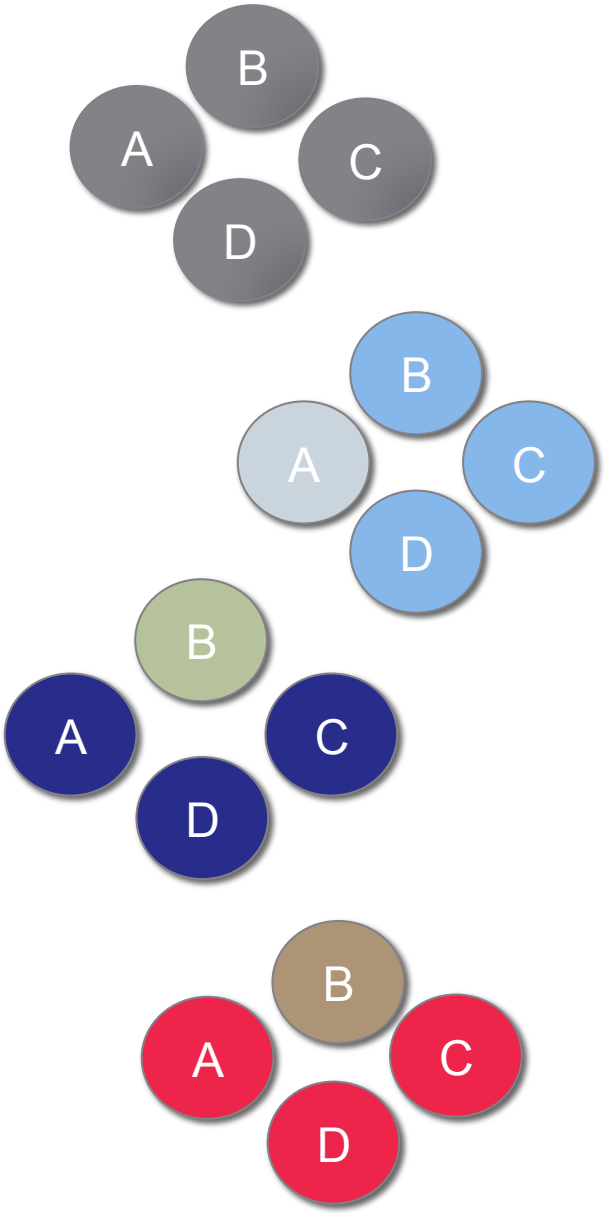
How?

- **Phase II Deepening knowledge**
  - Deepening knowledge, learning diverse aspects of the subject, topic or issue
  - Students share tasks in home groups and then move to work in the expert groups in order to learn and deepen knowledge of a certain topic
  - Expert groups work together to create a common understanding of the topic
    - They write notes, investigate materials, create graphs etc..

How?

- **Phase III Teaching others and reporting learned**
  - Students return back to their home groups, and each of them share and report what they have learned in expert group.
  - Students are encouraged to ask questions, discuss and aim to create a common understanding of a whole issue
- **Phase IV Evaluation and combining the learned**
  - Students can present what they have learned to a whole class, they can write a report, a paper, make a poster presentation, power point presentation prezi, or demonstrate in some other way what they have learned

HOME GROUPS



“EXPERT” GROUPS

TOPIC A

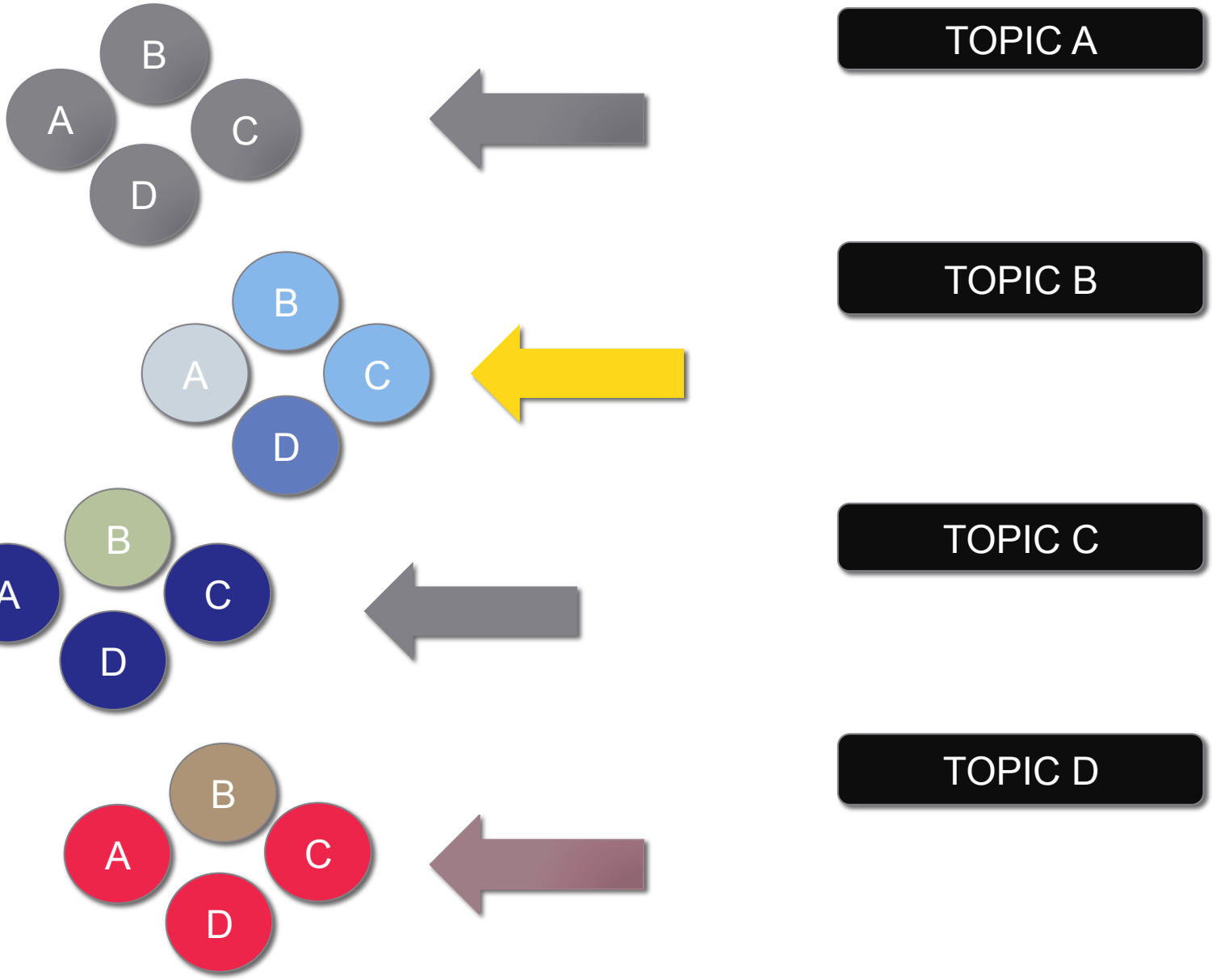
TOPIC B

TOPIC C

TOPIC D

HOME GROUPS

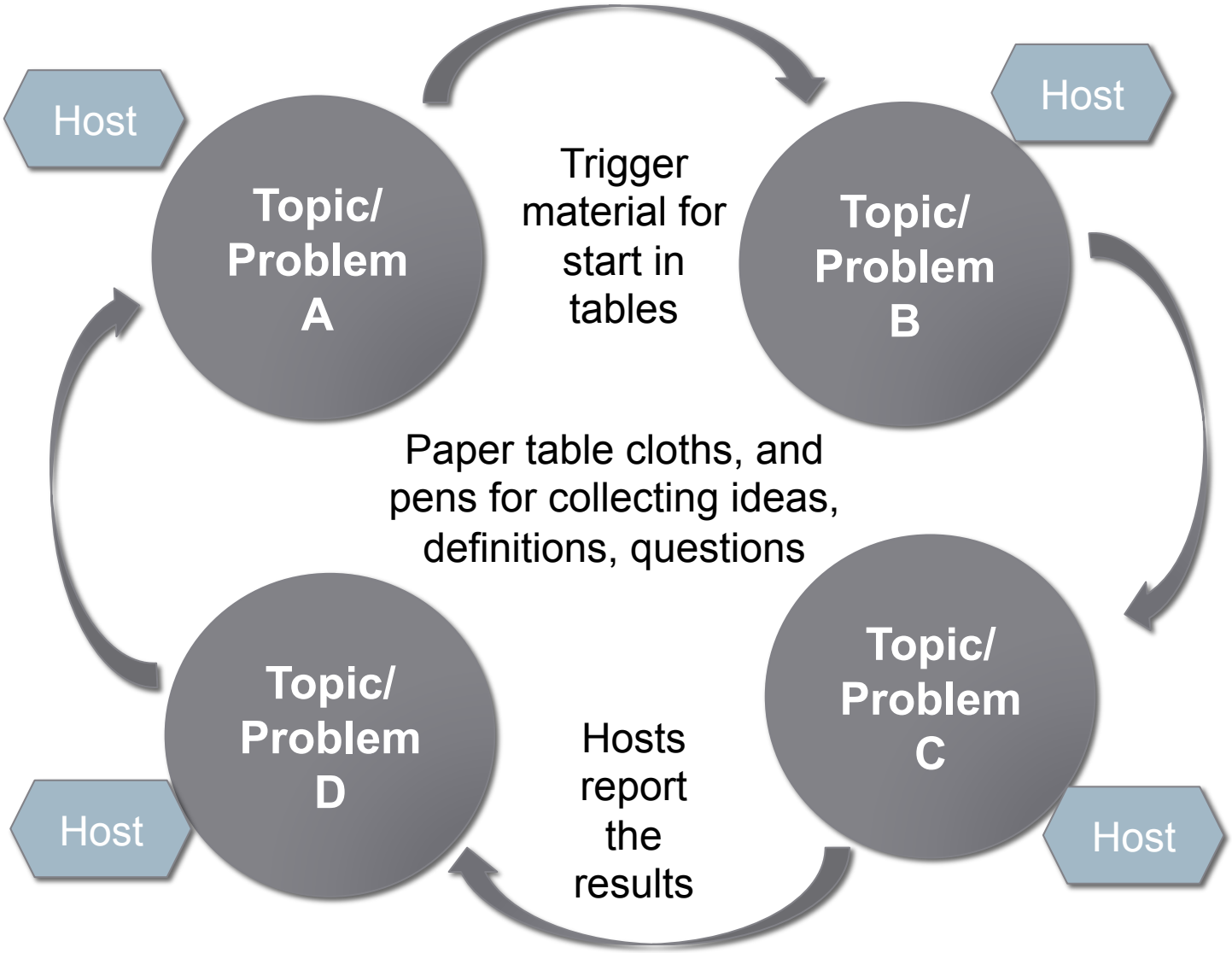
“EXPERT” GROUPS



Learning café

- One student hosts each table and the other students move as a group from one table to another
- Typically groups visit three tables and then return to own table
- **Start:** a host describes the problem, gives material and a group discusses, makes notes on the table cloth (paper) (15-20 minutes)
- Change of the tables, new group arrives, and a host presents the results of first groups discussion, new group discusses, makes additional notes on the table cloth (15 minutes)
- Repeat of change of tables
- Return to own table and conclusions, reports
- Table cloths are presented, hosts present with their comments to all, general discussion

Learning Café arrangement



Tripartite debate

- The aim of tripartite debate is to expose students to other perspectives and to learn and understand that the issue is complex and multidimensional.
- **First step:** students study material investigating and finding answers to their own selected perspective (e.g. management, teaching, research)
- **Tripartite debate:** Three groups representing three different perspective to the same issue/problem discuss freely about the problem bringing into discussion their viewpoints and challenging other groups by asking and commenting. Other students follow debate.
- **Feedback:** Other students give feedback, comment etc. Teacher may also give feedback. Teacher discusses and summarise the main points of the issue
- Briefing and relaxing aroused feelings: Students in debate groups comment what they felt and learned during the process.

Practicing Tripartite debate

- Teaching “your choice”
- **Select your teaching method:** (1) lecture, (2) group work, (3), independent study and essay
- Make some notes why your topic is the best choice for teaching “your choice”.
- **Tripartite debate:** Three groups/one person representing each teaching method discuss and other participants listen and make their notes.
- **Feedback and comments:** other participants add, give comments, give suggestions.
- **Briefing and relaxation:** Members of debate are free to give their comments, what they learned.

Important to remember when you plan group work activities

- Heterogenous groups – diversity of skills, knowledge, abilities, temperament enhance groups in cooperation and achieving learning goals
- 3-4 members in a group are equal, no need for chair and secretary
- 6-10 members in a group – different roles emerge, need for a chair, secretary, and other roles
- Give exact guidelines how to work
- Give a schedule in advance

References and literature

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FLIPPED CLASSROOM

Elements of flipped classroom

- Flipped classroom is a pedagogical model where the elements of lecture, teaching and homework of a course are reversed.
- Pre-recorded lectures for students to familiarize and study before a lecture/teaching event followed by in-class exercises
- **Benefits:** gives more time in class to discuss difficult topics, constructs, theories etc. and time for students to apply concepts in practice, opportunity for a teacher to detect errors and misconceptions
- **Downsides:** careful and time-consuming preparation of video-lectures, other materials, selecting videos from internet. Students complain about the loss of face-to-face lectures, they may lack the equipment etc.

- https://net.educause.edu/ir/library/pdf/eli7081.pdf

Flipped classroom

- Inverting the classroom means that events that have traditionally taken place inside the classroom now take place outside the classroom and vice versa" (Lage et al. p.32)

- The theoretical background bases on socio-constructivist and constructivist theories of learning.

- To reverse teaching and learning means to change the culture of teaching and learning