



**Modern teaching methodologies
by PP8 MU
(University of Miskolc, Hungary)**



Co-funded by the
Erasmus+ Programme
of the European Union

11th November 2021



Mood barometer with Jamboard



Co-funded by the
Erasmus+ Programme
of the European Union



How was your week?

https://jamboard.google.com/d/1JJZ9z1_VEk6jTLGuXwjXnAllmck3LNhYxJ2KJTWflg/edit?usp=sharing

YES!


How was your week? Mark the most appropriate impression with an X.



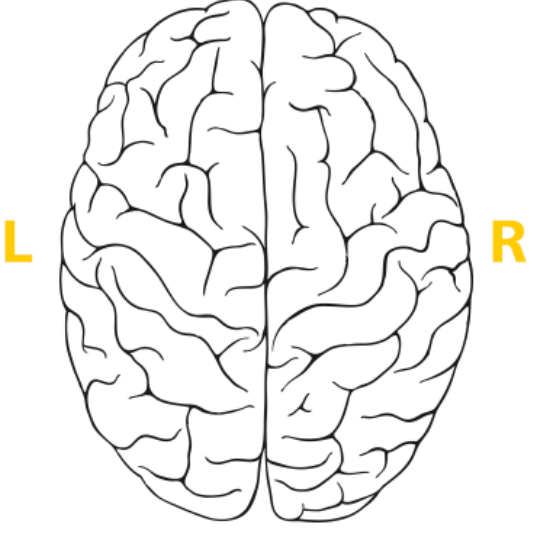


Playing: Left or right brain test

<http://braintest.sommer-sommer.com/en/>

SOMMER  SOMMER

Which side of your brain is more dominant?
The 30-Second Brain Test



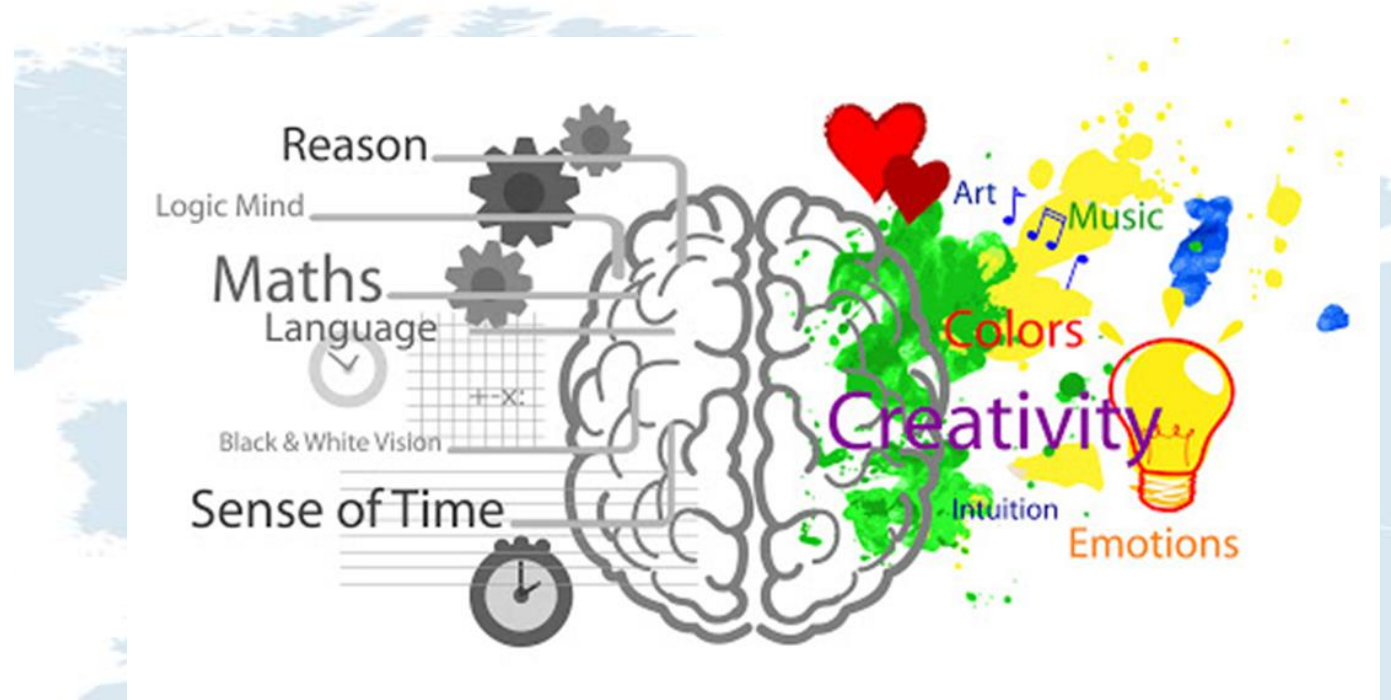
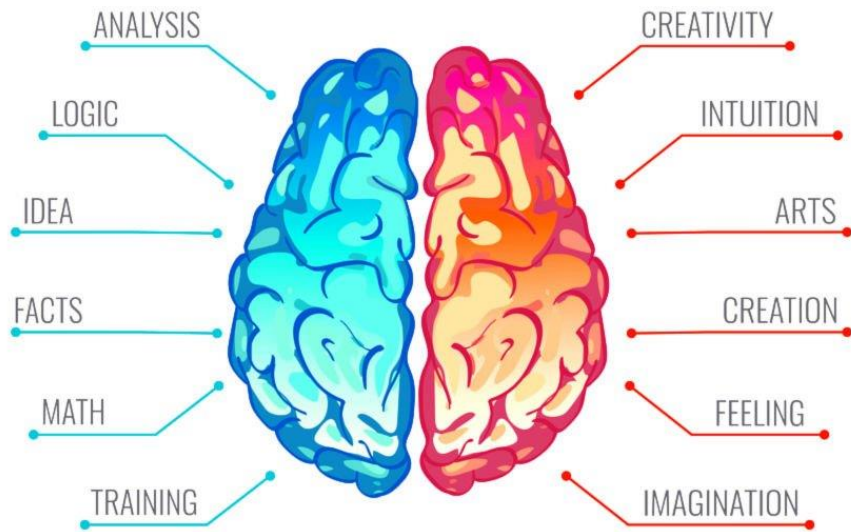
START





Functions

LEFT vs RIGHT BRAIN



<https://www.lucidmindcenter.com/right-brain-left-brain-test/>

<http://experimentexchange.com/living-systems/test-your-brain-for-its-dominant-side/>





Balanced left and right brain with music



left and right brain balanced music

SZŰRŐK

Keresési szűrők megnyitása and right brain balance music

★Left Brain/Right Brain Hemispheric Synchronization Formula★ (Binaural Beats Healing Frequency Music)
1,4 M megtekintés • 5 évvel ezelőtt
Quadible Integrity - Healing Frequency Music
Left Brain Right Brain Hemispheric Synchronization Formula • Website: <https://spirilution.com> DOWNLOAD ATTUNED ...

Left Brain / Right Brain | Hemispheric Synchronization Formula | Ambidexterity | 360Hz | Pink Noise
29 E megtekintés • 3 évvel ezelőtt
Relaxing Music & Binaural Beats
Left Brain / Right Brain | Hemispheric Synchronization Formula | Ambidexterity | 360Hz | Pink Noise #ambidexterity #pinknoise ...

Brain Balance Music - Right Brain Weak
14 E megtekintés • 8 hónappal ezelőtt
Brian Dangerous
Right Brain Weak Musical Compositions Sound in the form of music has a very powerful effect on brain activity. The musical ...

GET LEFT BRAIN RIGHT BRAIN SYNCHRONIZATION FAST - FREQUENCY WIZARD
46 E megtekintés • 1 évvel ezelőtt
Binaural Beats Frequency Wizard
GET LEFT BRAIN RIGHT BRAIN SYNCHRONIZATION FAST - FREQUENCY WIZARD <https://www.FREQUENCYWIZARD>.





Left vs. Right Brain Teaching Techniques

Left brain teaching techniques

- Write an outline of the lesson on the board.
- Go ahead and lecture! These participants love to listen to an expert and take notes.
- Discuss vocabulary words and create a crossword puzzle.
- Discuss the big concepts (abstract concepts).
- Assign individual assignments so participants may work alone.
- Ask the participants to write a research paper (detail and conceptual analysis).
- Keep the room relatively quiet and orderly.

Right brain teaching techniques

- Write the main points on the board or pass out a study guide outline that participants can fill.
- Use the board frequently to help the participants “see” and comprehend the points.
- Have some time for group activities.
- Let the participants create a project.
- Play music during the training.
- Use pictures, graphs, maps, etc.



The attention span



Co-funded by the
Erasmus+ Programme
of the European Union



- **Educated adult 20 minutes.**
- Significantly shorter the more information the brain has to process simultaneously and/or the more demanding the learning environment is.
- **Virtual sessions (50% lower) 10 minutes.**
- **Training/courses in foreign language (50% reduce) and ONLINE 5 minutes.**

<https://www.youtube.com/watch?v=4Gt3oM6Y30o>





1. **Purpose:** Make the purpose of the content you cover in training explicit.
2. **Appreciation:** Mindset and heart attitude. (feel safe and accepted)
3. **Recognition:** Cherish the attention, effort and personal commitment. Show appreciation, recognition and praise. (3 levels of difficulty: **Simple question** – minimum requirement, **So-So question** – medium difficulty, **Stinker question** – for excellents or who enjoy challenges)
4. **Rapport:** want, respect and appreciate → active participation
5. **Activation:** after 10-20 minutes the brain needs change!

<https://www.youtube.com/watch?v=gKDfrrtBdkUE>





Problem-based learning



Co-funded by the
Erasmus+ Programme
of the European Union



Content



1

Principles

2

Features

3

Aims

4

Advantages & disadvantages

5

Role of trainer & participants

6

Application

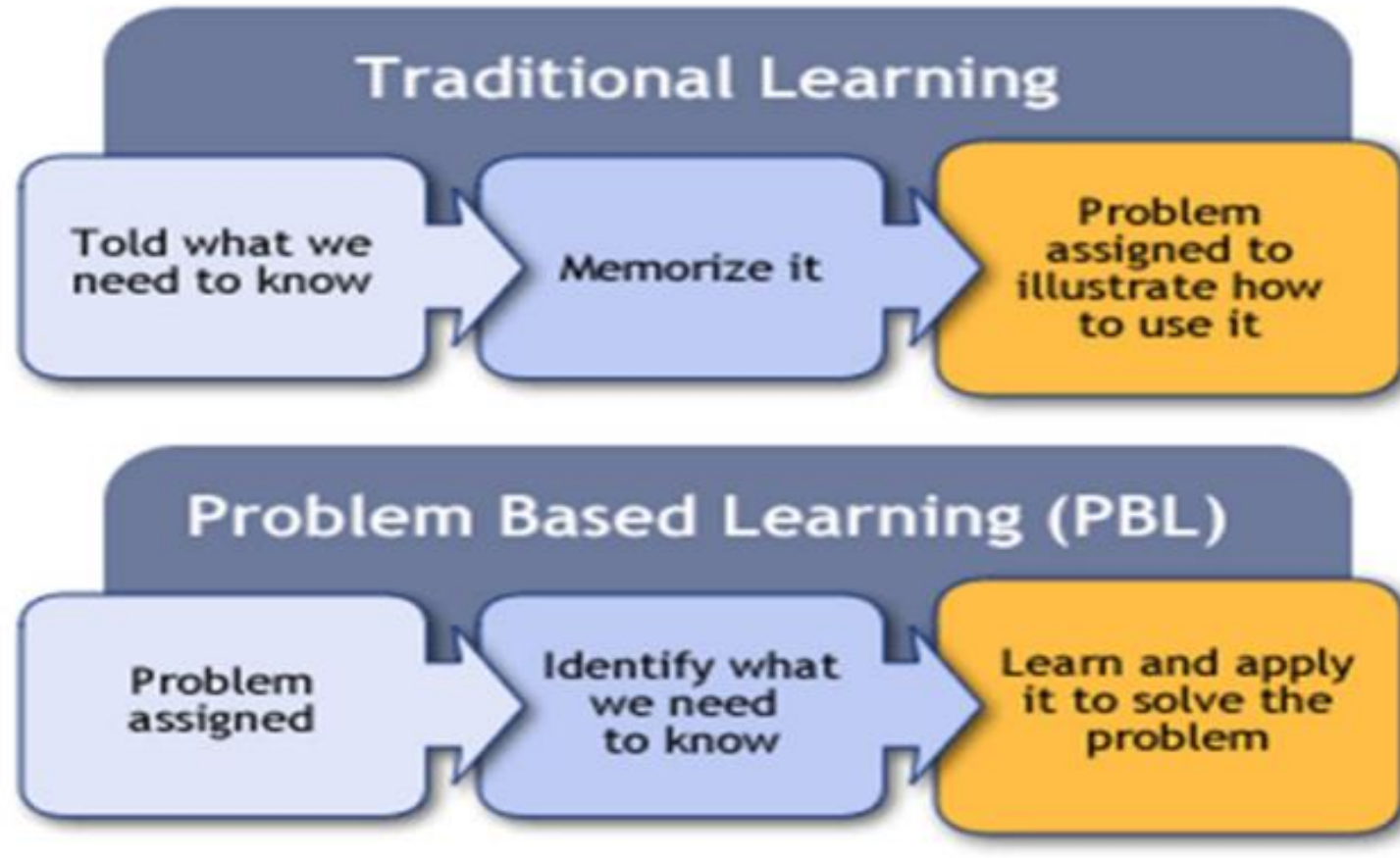
7

Evaluation





Difference between traditional learning and PBL - Sheeba Sardar Ali (2019)





Why PBL should be used? – Nilson (2010)

Nilson (2010) lists the following learning outcomes that are associated with PBL. A well-designed PBL project provides students with the opportunity to develop skills related to:

- Working in teams.
- Managing projects and holding leadership roles.
- Oral and written communication.
- Self-awareness and evaluation of group processes.
- Working independently.
- Critical thinking and analysis.
- Explaining concepts.
- Self-directed learning.
- Applying course content to real-world examples.
- Researching and information literacy.
- Problem solving across disciplines.





Features of PBL – Weber (2007)

1. Active learning and active participation of students.
2. Learning is a self-directed process.
3. Students build their own knowledge.
4. Students are aware of what they have learned on their own, with which they can better understand or solve a given problem.
5. Students participate in structured processes in different roles in order to contribute to an effective learning and problem-solving process in the group. This requires teamwork and communication skills.





Goals of PBL – Nilson (2010)

The goals of PBL include helping students develop:

- flexible knowledge,
- effective problem-solving skills,
- SDL skills,
- effective collaboration skills,
- intrinsic motivation.





PBL is a process that is used to identify problems with a scenario to increase the knowledge and understanding.

Some of the principles are listed below.

- 1) Independent and self- directed learning
- 2) Learning happens in a group and teacher is a facilitator.
- 3) All groups have to participate equally.
- 4) Students' learn about motivation, teamwork, problem-solving and engagement with the task.
- 5) Materials such as Data, photographs, articles, can be used to solve the problem.





Principles of PBL – Barrows (1998)

1. It is problem-based, that is, it begins with the presentation of a real (authentic) problem.
2. Problem-solving, so it supports the application of problem-solving skills needed in practice. The role of educators is to help apply and develop an effective problem-solving process.
3. Student-centered. Students take responsibility for their own learning, in which the institute is given an operating role. Instructors should avoid the development of an addictive situation, more specifically, that students' knowledge depends solely on them.
4. You are guided learning that develops research skills. Students should learn how to find current and relevant information when needed. This is a basic skill for proper professional performance.
5. Reflection that follows the problem-solving work. It is preferred to have it in a group discussion. The purpose of reflection is to make the learning processes and problem-solving skills that are decisive for a new problem a daily routine.





Advantages of PBL - Savin-Baden (2000)

- adaptation and participation in change,
- ingenuity in new and future situations,
- creative and critical thinking,
- holistic problem orientation,
- recognizing and acknowledging differences / similarities between perspectives,
- cooperation in groups,
- the possibility of recognizing learning gaps and strengths,
- strengthening self-directed learning,
- developing effective communication skills,
- management of different data sources.





- A challenge to change teaching style.
- Students take more time to solve problematic situations.
- Some groups may finish the work sooner or later.
- PBL requires good curriculum and research reports.
- It is difficult to implement PBL in all classes, especially for students who do not fully understand the value and scope of problems related to social content.





Complex cognitive model of problem solving (Tóth, 2007)

Problem solving			
Critical thinking	Analysis		Synthesis
	<ul style="list-style-type: none"> • schema recognition • classification • recognition of assumption 		<ul style="list-style-type: none"> • analogical thinking • summary and systematization • hypothesis
	Evaluation, 'exploration'		Elaboration, 'discovery'
	<ul style="list-style-type: none"> • taking stock of relevant knowledge • definition of criteria • prioritization of criteria • recognition of erroneous conclusion • verification, inspection 		<ul style="list-style-type: none"> • expanding the existing knowledge • modification and concretization of existing knowledge, • creation of new conceptual categories
	Find connections		Recognizing connections
	<ul style="list-style-type: none"> • comparison • logical thinking • inductive and deductive inference 		<ul style="list-style-type: none"> • originality and fluency of thinking • flexibility in thinking • intuition • heuristic thinking
Existing knowledge		Commitment to the problem	Metacognitive knowledge
Declarative	Procedural		
Creative thinking			



Roles of trainer

Colburn's (2000) suggestions for educators regarding PBL:

1. ask open-ended questions,
2. wait for students to answer questions, give them time to process,
3. repeat or rewrite the ideas, but do not criticize,
4. do not tell students exactly how to carry out the specific activity,
5. maintain discipline and deal with behavioral problems.





Roles of participants

- Active role
- Group work
- **It is not the teacher who passes on new knowledge to the students, but they themselves realize what knowledge is still lacking to solve the problem.**
- Cooperation
- Better understanding
- Critical view
- Different roles: leader, information gatherer, researcher, problem solver, decision maker, communicator, presenter.





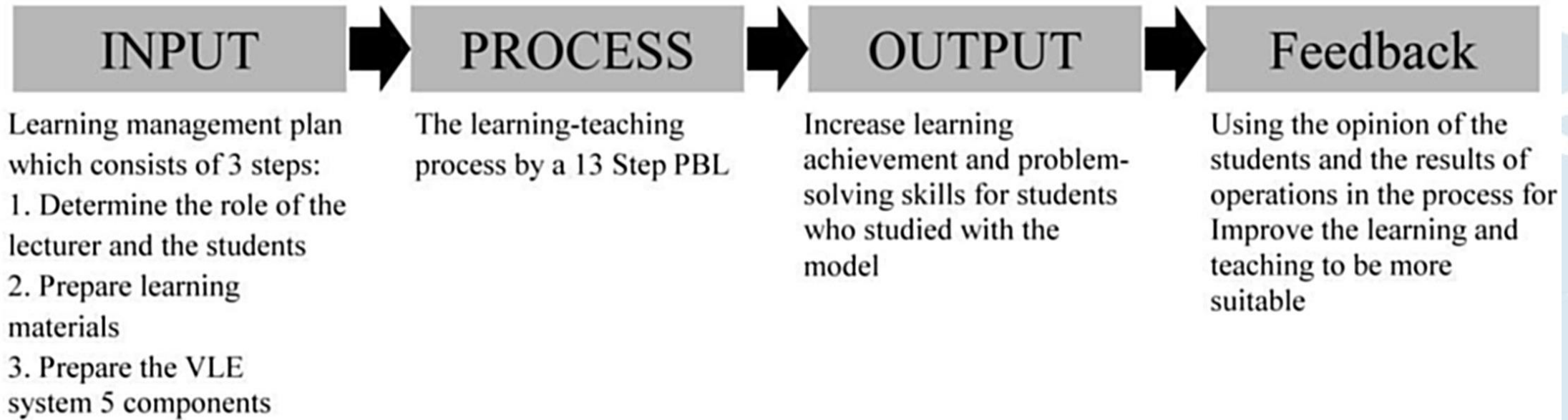
Application of PBL - Barrett et al. (2005)

1. First, students face with the problem.
2. Students discuss the problem in a small group.
 - The details of the case are clarified.
 - They pinpoint the problem.
 - They do brainstorming based on their existing knowledge.
 - They determine what they need to learn to deal with the problem, what they don't know yet (curriculum).
 - They discuss the problem.
 - An action plan is drawn up to solve the problem.
3. In addition to the lesson, students develop the content of the curriculum independently. The source of information is libraries, databases, the Internet and professionals.
4. We return to the PBL presentation, share the information in the group, and work together on the problem.
5. Students present and discuss the solution to the problem.
6. Students repeat what they learned in solving the problem.
7. Evaluate the process as well as the contribution of each student to the task.





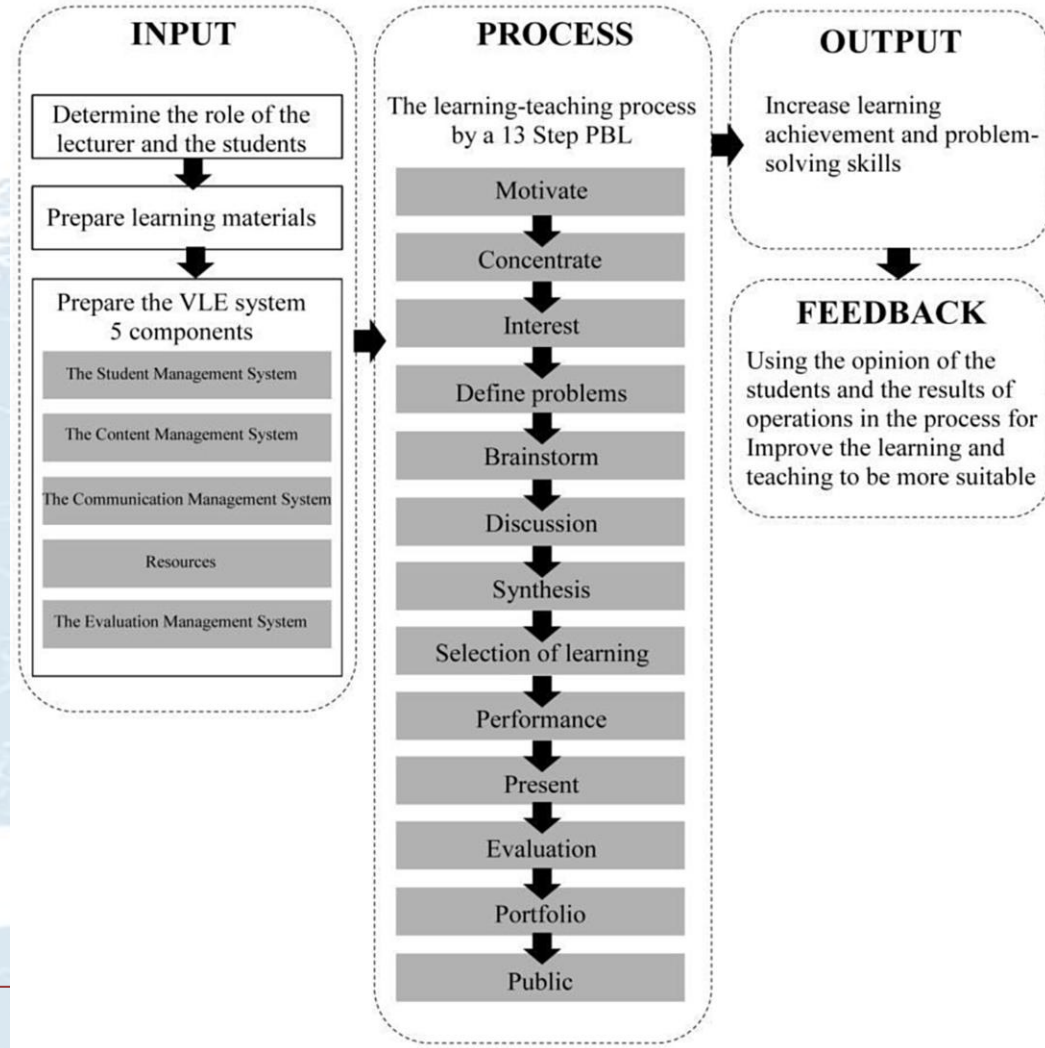
Phungsuk et al. (2017, pp. 302)





Concept of PBL in a virtual learning environment II.

Phungsuk et al. (2017, pp. 302)





Evaluation of the task

- oral reports,
- process logs,
- self-assessment,
- interrelated assessment of student groups,
- qualification prepared by an instructor,
- teacher observations, notes about individuals,
- tracking online interactions.





Youtube videos worth watching

- Problem-Based Learning at Maastricht University

<https://www.youtube.com/watch?v=xLqnxIR2Fj4>

- Our students on Problem-Based Learning

<https://www.youtube.com/watch?v=HhJi5ZYcf0k>





Articles worth reading

- Elaine H. J. Yew and Karen Goh (2016): Problem-Based Learning: An Overview of its Process and Impact on Learning

<https://www.sciencedirect.com/science/article/pii/S2452301116300062>

Michael T. Nietzel (2019): New, Strong Evidence For Problem-Based Learning

- <https://www.forbes.com/sites/michaelt Nietzel/2019/10/29/new-strong-evidence-for-problem-based-learning/>

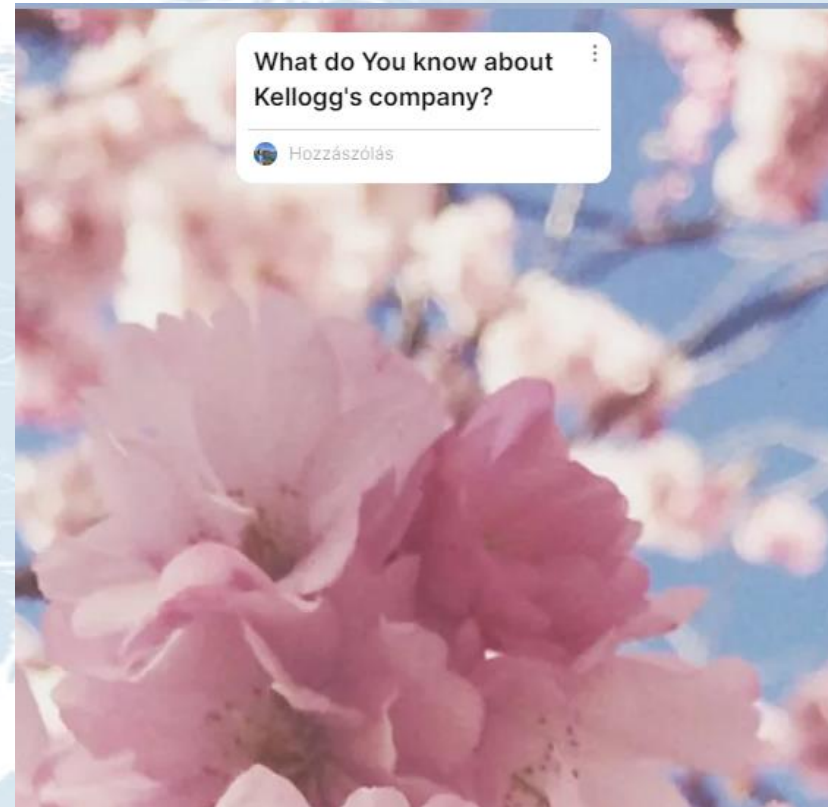




Padlet

What do You know about Kellogg's company?

<https://padlet.com/noika01/3pexphteq155wbwg>





Group work

- Case study: New products from market research

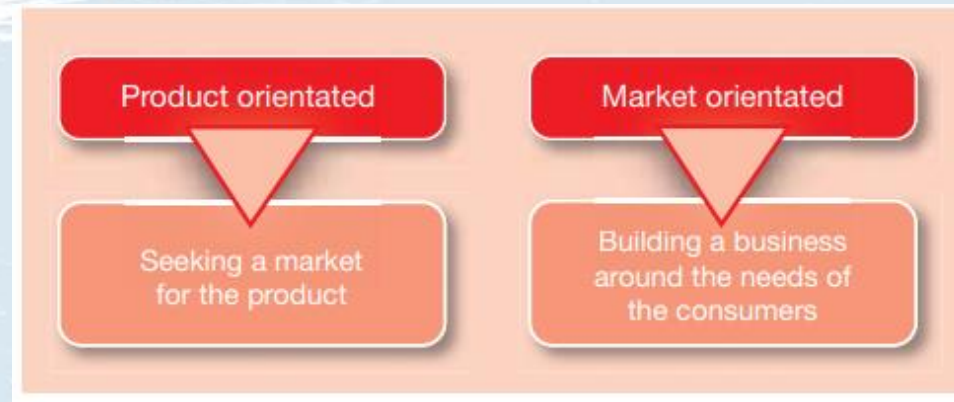
<http://www.ibbusinessandmanagement.com/uploads/1/1/7/5/1/1758934/kelloggs-edition-15-full.pdf>

Kellogg's[®]



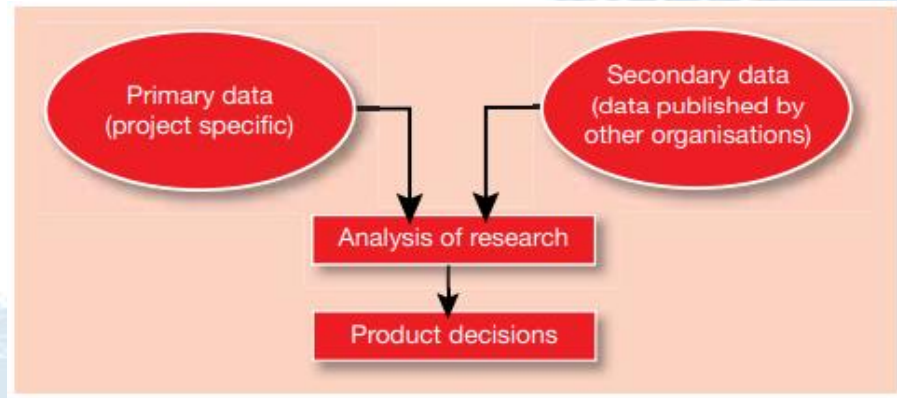


Why carry out a market research?





Types of research



Qualitative Market Research	Quantitative Market Research
Based on opinions and experiences	Based on numbers
Smaller sample	Larger sample
Interviews, focus group	On-line & postal surveys, CATI surveys
In-depth analysis	% of people agreed with a statement
Open Ended questions	Mostly Closed questions

Market Research Agency with in-house contact Centre



Stages of New Product Development

Stage 1: Discovery

Stage 2: Selecting the best idea

Stage 3: Crafting the idea into a complete new product

Stage 4: Forecasting sales for the new Crunchy Nut Bites





Glossary

Sustainable growth: Developing the business to meet the needs of consumers today, while respecting the needs of future generations.

New product development (NPD): Term used to describe the processes involved in creating a new product.

Sales value: The value of sales made over a fixed period of time.

Variant: Alternative to the core product introduced by the maker of the brand.

Brand extension: The use of a well known brand to launch a new and complementary product.

GLOSSARY

Product orientated: A business strategy that focuses on the product rather than the customer.

Competitive advantage: A strategic element that enables an organisation to compete more effectively than its rivals.

Primary research: Research that is carried out for the first time to meet a specific objective.

Qualitative research: Associated with consumer responses, feelings, attitudes and descriptions.

Market orientated: Focusing an organisation on the needs of its customers.

Quantitative research: Associated with figures or numbers that help to make the research more objective - usually taken from a large number of consumers.

Focus groups: Small group, usually of 6 to 8 people, used as part of a process of research to elicit feedback.

Prototypes: A single example of a planned product that can be tested and modified before entering production.

Mean: Average of all values.

Secondary research: Uses data that has already been collected and/or published e.g. in newspapers, books or reports.

GLOSSARY

Budgets: Financial plans for the future that show where costs and revenues will come from.

Supply chain: The chain of processes linking the manufacture of products with physical distribution management so

that goods are moved quickly and efficiently through various processes to meet consumer needs.

GLOSSARY

GLOSSARY





Questions to discuss

1. Describe the purpose of market research.
2. Explain the difference between primary research and secondary research.
3. Analyse why an organisation like Kellogg's would use both qualitative and quantitative data.
4. Evaluate why market research can reduce the risks of a new product launch.

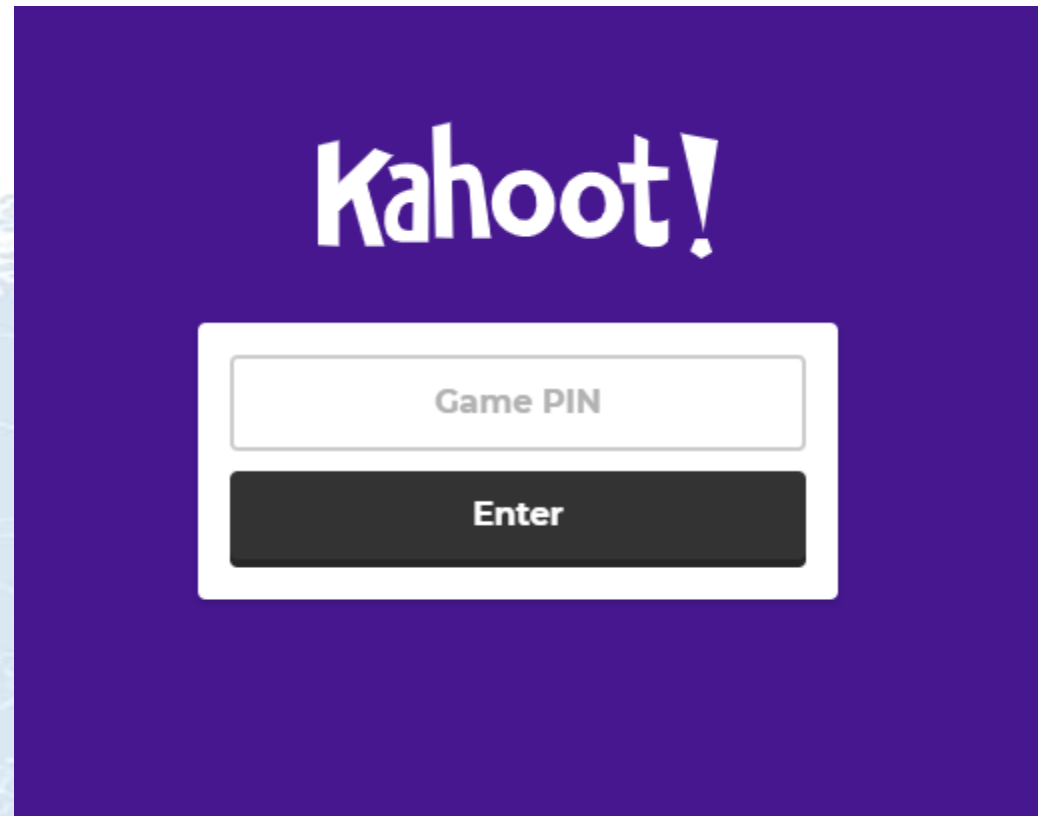
QUESTIONS





Let's Play Kahoot!

- Kahoot.it





How are You feeling today after training?

https://jamboard.google.com/d/1JJZ9z1_VEk6jTLGuXwjXnAllmck3LNhYxJ2KJTWflg/viewer?f=1





- Akinoglu, O. – Özkardeş Tandoğa, R. (2007): The effects of problem-based active learning in science education on students' academic achievement, attitude and concept learning. *Eurasia Journal of Mathematics, Science & Technology Education*, 3(1), 71-81.
- Barrett, T., Mac Labhrainn, I. and Fallon, H. (eds) (2005) *Handbook of Enquiry and Problem based Learning: Irish Case Studies and International Perspectives*. Galway: All Ireland Society for Higher Education (AISHE) and Centre for Excellence in Learning and Teaching (CELT), NUI Galway.
- Barrows, H. (1998). The essentials of problem-based learning. *Journal of Dental Education*, 62(9), 630-633.
- Colburn, A. (2000): *An inquiry primer*. Science Scope, 2000. March
- Nilson, L. B. (2010). *Teaching at its best: A research-based resource for college instructors* (2nd ed.). San Francisco, CA: Jossey-Bass.
- Phungsuk, R. – Viriyavejakul, C. – Ratanaolarn, T. (2017): Development of a problem-based learning model via a virtual learning environment. *Kasetsart Journal of Social Sciences* 38 (2017) 297-306
- Savin-Baden, M. (2000): *Problem-based learning in higher education: untold stories*. Philadelphia, PA: The Society for Research into Higher Education & Open University Press.
<https://www.mheducation.co.uk/openup/chapters/033520337X.pdf>
- Sheeba Sardar Ali (2019) : *Problem Based Learning: A Student-Centered Approach*.
https://www.researchgate.net/publication/332352523_Problem_Based_Learning_A_Student-Centered_Approach
- Tóth, P. (2007): A problémamegoldó gondolkodás fejlesztésének módszertana. *Budapesti nevelő: A Mérei Ferenc Fővárosi Pedagógiai és Pályaválasztási Tanácsadó Intézet szakmai folyóirata* XIII:(1-2.) Pp. 47-66. (2007)
<https://docplayer.hu/854340-A-problemamegoldo-gondolkodas-fejlesztesenek-modszertana.html>





Thank You for the attention!
Dr. Noémi Hajdú, University of Miskolc
margn@uni-miskolc.hu



Co-funded by the
Erasmus+ Programme
of the European Union