



SchoolontheCloud.eu

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# 1 The Story of John, or how education could be

John enters the school door, has a look if there is anything new in the intercultural area, greets his friends who are doing a small game in the playground section and checks his mobile device.

## School as a learning environment, is

- Relaxed
- Has no walls
- Has new furniture
- Is connected with nature
- Is connected with other learners
- Is diverse.



There he finds that one of his colleagues posted a question to their professor, still being unanswered. So he decides to meet members of another group in the cantina, joining them for an orange juice. They had already advanced, so they indeed can help.

John and his colleagues continue to get data from the open data cloud, using the free open-source software to analyse and compile it, preparing a cool interactive visualization.

## The learning process includes:

- Critical thinking
- Flipped classroom
- Data management
- Open source software
- Peer learning
- Tutorials from learners to learners
- Privacy awareness
- Preparing for the real working environment
- Time-wise and content-wise organization
- Creativity.



After two hours the chair reports to John's device that he is sitting for two hours. There is where Theresa comes into the learning story. She is a trainer for yoga and guides the team to the relaxation room, showing them some new exercises to relax their neck muscles.

Right after they finished their exercise they hear the "bell of good ideas". They move to the school's amphitheatre and wait for the announcement. One of their colleagues just had the idea of using a 3D-pen to create individual models of chocolate for their Christmas party.

**Health Social and Ethical Issues are part of education:**

- Health Issues
  - Physical
  - Mental
  - Addiction
- Behavioural
  - Cyber mobbing
  - Plagiarism



Knox Innovation Opportunity and Sustainability Centre (KIOSC) Melbourne



Sydney Centre for Innovation in Learning

Then the team goes back to work. They proceed very well, achieving the "flow" state. Suddenly the system warns "15 minutes left until automatic shutdown for today". They concentrate and finish their work, having the evening for their outdoor non-school related activities and games.

Although at first glance this seems to be a faraway dream, it can become reality. Many schools in the world are already starting with the transformation from the '19<sup>th</sup> century style' education to what should be the '21<sup>st</sup> century education'. But the transition takes long, and includes a mind shift on all levels: school (buildings), teachers and certainly the learners. Personalised learning is in the centre of it.



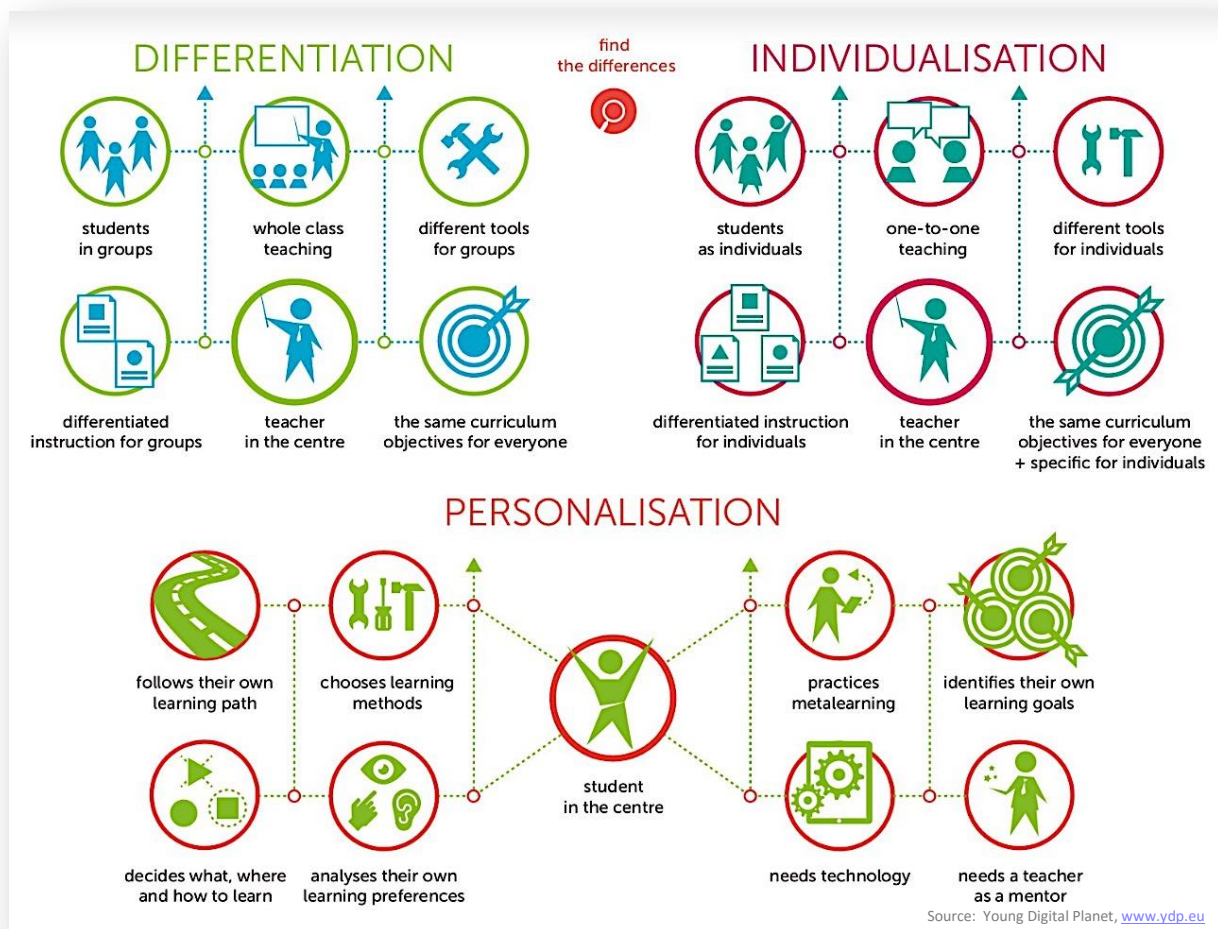
From 19<sup>th</sup> century (evocation in Palermo puppet museum) to 21<sup>st</sup> century education (pupils in a modular classroom – the tables can be flipped into boards, the seats reorganized, and the teachers room, school in Copenhagen)

## 2 What is personalised learning?

Every learner has his own learning method/skills (speed, approach, interest and experiences), so he should have the opportunity to expand his skills and knowledge, exercise and adjust their learning rhythm according to their interests in combination with the curriculum. As the protagonist of the learning process is the learner we should adapt to his previous learning and construct the learning process after that. It is of course useful to propose creative activities, use problem solving orienting... but the start point should be the student previous knowledge.

For decades schools treated all pupils the same way - a system called *uniformity*. At some point however it was decided to classify pupils into homogenous groups – a system called *differentiation*.

Out of it came the system called *individualisation*, assuming that every student is different and needs a unique approach. Differentiation and individualisation have this in common that the teacher is still in the centre, he controls what is taught and when it is taught. *Personalisation*, on the other hand, puts the student, the learner, central so that he can arrange, realise and modify the educational process.

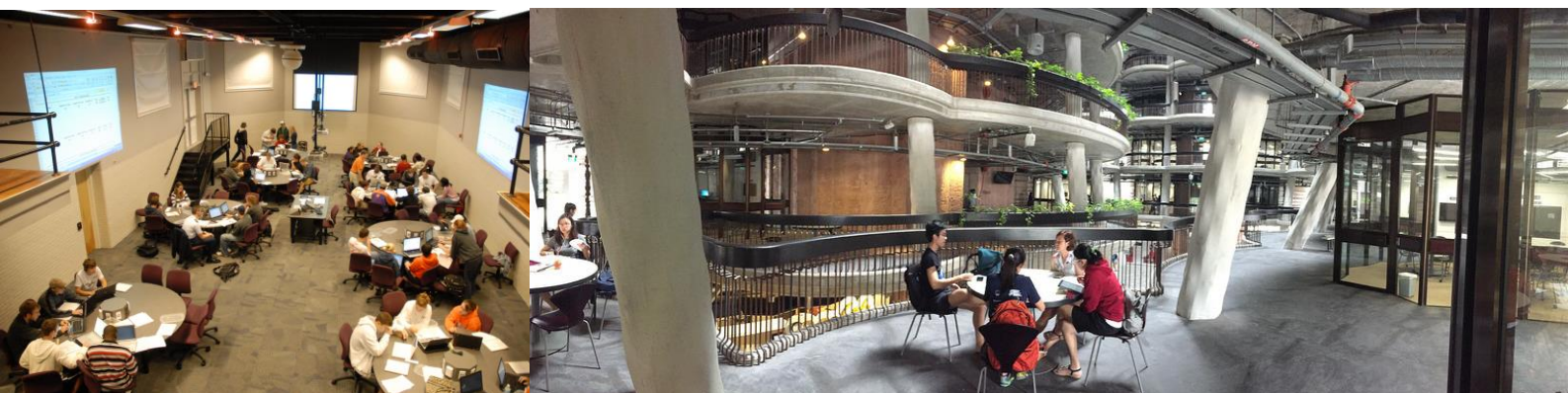


### Personalised learning:

- Starts with the learner and the learner is in the centre
- The learner is active in designing their learning goals and processes
- The learner decides how to access and acquire information,
- The learner owns and takes responsibility of learning, thus more motivated and engaged in the learning process,
- The learner owns the capacity for critical monitoring of learning outcomes
- High quality teaching responsive to the different ways students achieve their best
- Creating an education path that takes account of learner's needs, interests and aspirations
- Making a strong contribution to equity and social justice.

To implement personalised learning, the learning paradigm must be adopted. We can distinguish three types:

Criteria	u-learning	m-learning	e-learning
Concept	Learn the right thing at the right place and time in the right way.	Learn at the right place and time.	Learn at the right time.
Permanency	Learners can never lose their work.	Learners may lose their work. Changes in learning devices or learning in moving will interrupt learning activities.	Learners can lose their work.
Accessibility	System access via ubiquitous computing technologies.	System access via wireless networks.	System access via computer network
Immediacy	Learners get information immediately.	Learners get information immediately in fixed environments with specified mobile learning devices.	Learners cannot get information immediately.
Interactivity	Learners' interaction with peers, teachers, and experts effectively through the interfaces of u-learning systems.	Learners can interact with peers, teachers, and experts in specified learning environment.	Learners' interaction is limited.
Context-awareness	The system can understand the learner's environment via database and sensing the learner's location, personal and environmental situations.	The system understands the learner's situation by accessing the database.	The system cannot sense the learner's environment.

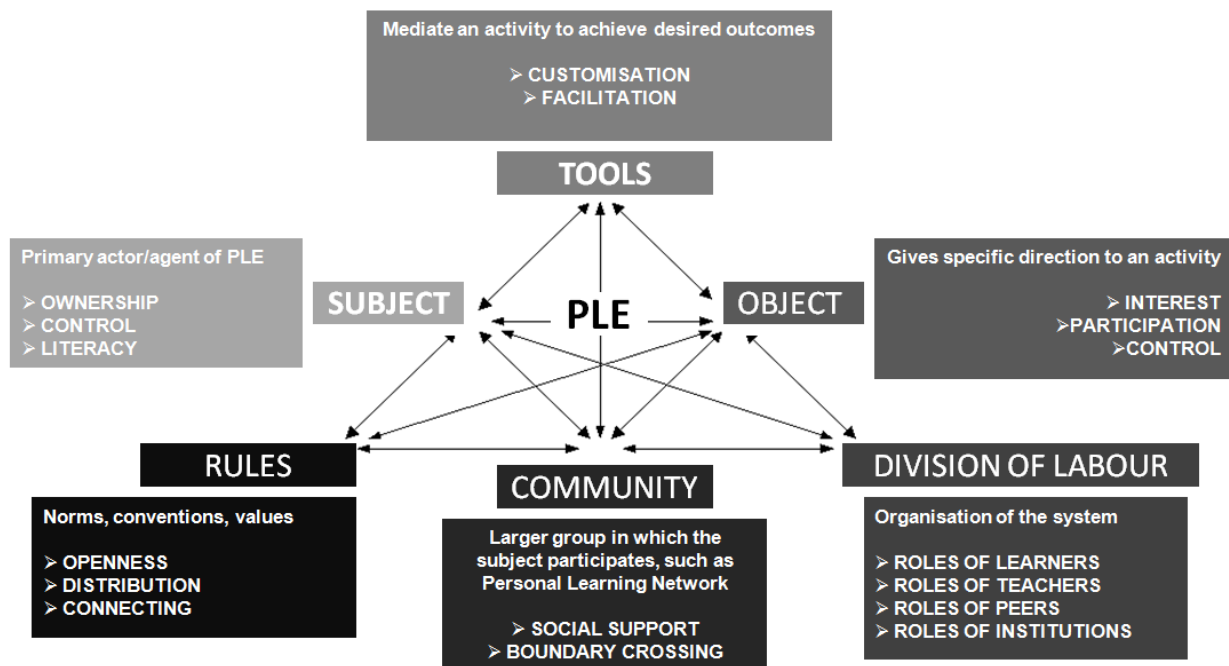


### 3 Personalised learning through the use of technology

The introduction of information technology and communication for teaching (ITC) is an ongoing process that is adapted entirely in the context of the "Strategy for Rethinking Education" launched in 2012 by the European Commission. This strategy aims to develop transversal skills, including IT, among European students and increase access to education through free online resources. Many social software tools offer the possibility to the learner to organise his own learning experience (with monitoring, collaborative working, questioning and self-evaluation, various representations) and gives the learner a sense of ownership and control over his own learning and career planning.

Although virtual learning environments (VLEs, like Moodle) can be used to provide and track e-learning courses and enhance face-to-face instruction with online components, they are primarily used to automate the administration of learning by facilitating and then recording learner activity. They are mostly a replica of the traditional classroom learning style, many instructors just move all their teaching materials to the system where it is presented uniformly to all learners regardless of their background, learning styles and preferences.

The personal learning environment (PLE) concept places the focus on the appropriation of different tools and resources by the learner, whereby the learner is situated within a social context which influences the way in which they use media, participate in activities and engage in communities.



Summary of PLE elements and their core dimensions (Buchem et.al. 2011)

Today's advanced technologies make it possible to personalize and securely deliver instructional content. For this new provision of learning material three "connectors" are fundamental to digital education:

#### Connector 1

An integrated digital education ecosystem: this is a collaborative network that instructs and guides with in the centre the learner, getting support from formal education participants (parents, teachers, peers, and administrators) as well as from non-formal education participants (mentors, potential employers).



**Connector 2.**

An integrated student learning life cycle from school to the workplace, connecting in-classroom and real-world learning in a way that is tailored to the needs, learning styles, passion, and potential of each student.

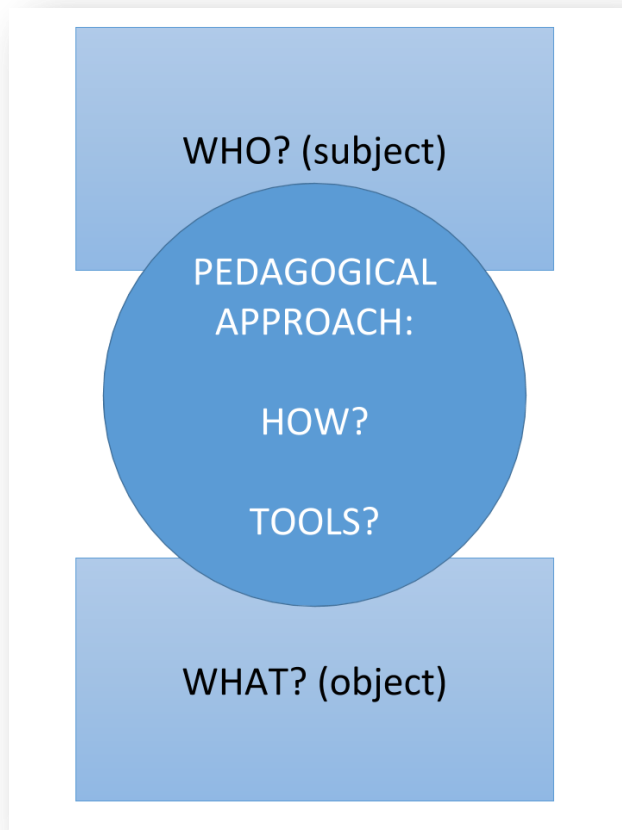
**Connector 3.**

Integrated technology solutions: ubiquitous learning that draws upon individual technology strengths and competencies to partner and offer integrated solutions.



## 4 Criteria for a good personalised learning course

According to the research done by WG3 there are a lot of criteria we can use to weigh the quality of a personalised learning course. The criteria can be divided into 4 categories, summarized into three categories as is shown in the figure below.



**1) The pedagogical approach or didactic process** is expressed by two main questions: how is the course organized? What tools is used? That is, through diagnostic tests using different procedures, the learner should be able to participate in two related functions with respect to managing/processing knowledge via different methods. In other words, the learner is expected to be able through observing and recalling to acquire information, to arrange and organize them and finally to apply them. And in doing so, to be able to answer the fundamental questions of the knowing process mentioned previously, as a result of having the necessary skills via assessment and portfolio. The second one, focuses to the accessibility and interactivity via the system and the methods adapted in order to achieve this goal.

*HOW* is the course organised, focusing on the didactics:

- diagnostic entry test to start a real personalised learning trajectory
- diagnostic tests during the personalised learning trajectory
- m-learning or u-learning instead of e-learning
- take different learning types into account
- assessment at the end (via test and/or portfolio).

What *TOOLS*/software is used:

- social network or other form of contact with co-learners included
- interactivity
- accessibility and usability of learning materials for everyone
- monitoring via the system.

**2) The object/content of learning:** This process is expressed by at least three questions: which form of education is applied?”, “What is the object?”, “What is the cognitive process taken into account?”. In terms of didactic, therefore, the focus is on learner to be able to attribute meaning to what they apprehend and mainly to explain them. That, of course, involves the learning of all the analytical concepts and principles that provide them with the ability to comprehend, to see connections between diverse pieces of information and to use that information to explain and processes in learning. In other words, to understand the subject matter of the content.

*WHAT* is the content of the course:

- formal education content, thus aiming at the core-curriculum
- possibility (not obligatory) to include non-formal and informal learning
- valuing all dimensions of the learner
- valuing previous knowledge, competences, life and work skills, also informal
- taking the cognitive background of the target group into consideration
- flexibility in the system (flexible content)

**3) The subject/intended for the actors:** This process is expressed by the well-known question: “How can knowledge and understanding be used to solve problems?”. This process involves forming problem-solving models, formulating solutions to problems and in general applying knowledge in a practical manner to real life situations that influence the world around us. As a result, the learner has to comprehend and deal with sophisticated contemporary issues by knowing his skills and understanding his subject matter to solve everyday problems. And in doing so, to interpret the world through his own perspectives.

*WHO* is involved in the course:

- ownership of personalised learning
- instructor / tutor or other network of peers, experts and teachers to guide and support the learning
- contact with peer group/ cooperative learning.



## 5 Checklist for a good personalised learning course

When using an existing personalised learning course, or designing your own one this checklist will help you. Scan the course and look for the indicators in the checklist. If present check the second-last column; if missing indicate in the last column. Thus missing indicators will be pointed here, offering the possibility to adjust the course.

Type	Indicator	Weight (Importance, 1=basic 100%, 2 = 150%, 3=200%)	Green: present	Orange: to be adjusted	Red: missing
HOW	Diagnostic entry test to start a real personalised learning trajectory	100 %			
	Diagnostic tests during the personalised learning trajectory	150 %			
	Assessment at the end (via test and/or portfolio)	100 %			
	m-learning or u-learning instead of e-learning	150 %			
	Take different learning styles into account	100 %			
TOOLS	Social network or other form of contact with co-learners included	100 %			
	Interactivity	200 %			
	Accessibility and usability of learning materials for everyone	100 %			
	Monitoring via the system	150 %			
	Motivation (entertainment) tools	100 %			
WHAT	Formal education --> core-curriculum	100 %			
	Possibility (not obligatory) to include non-formal and informal learning	100 %			
	Valuing all dimensions of the learner	150 %			
	Valuing previous knowledge, competences, life and work skills, also informal	100 %			
	Taking the cognitive background of the target group into consideration	100 %			
	Flexibility in the system (flexible content)	200 %			
WHO	Ownership of personalised learning	200 %			
	Instructor / tutor, experts and teachers to guide and support the learning	150 %			
	Contact with peer group/ cooperative learning	100 %			

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