



ADAPTIVE INDIVIDUALIZED EDUCATION IN E-LEARNING

**Kateřina Kostolányov
Jana řarmanov
Ondřej Takcs**

**University of Ostrava
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INTRODUCTION

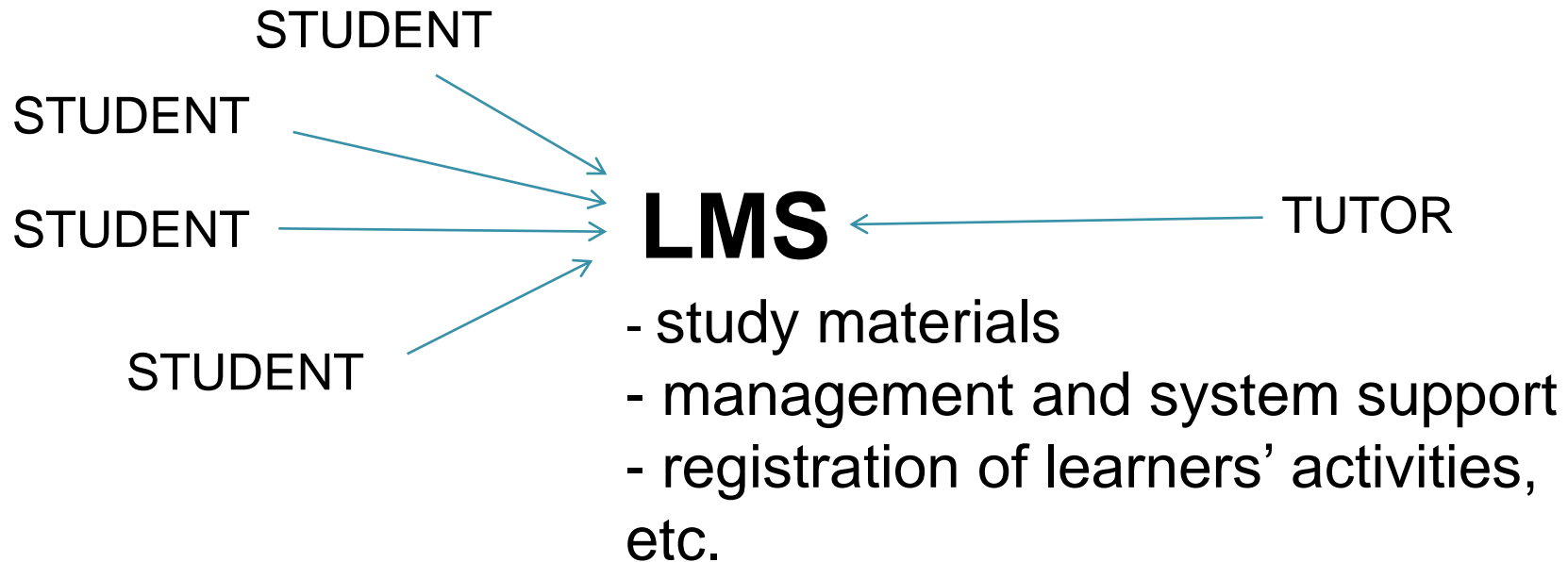
in a learning process learners are influenced by:

- their motivation
- environment, where they learn
- their learning styles

etc.

LEARNING STYLES IN DISTANCE LEARNING

MODEL OF EDUCATION



THE STUDY MATERIAL includes:

- subject matter explication
 - feedback
 - assignments
 - assessment tasks
- etc.

PRINCIPLE OF ADAPTIVE LEARNING – MODULES DEVELOPMENT

STUDENTS

differ in their

- characteristic
- knowledge
- behaviour

STUDY MATERIALS

differ in

- form
- contents
- details

RULES

to choose suitable study materials with regards to

- learning aims**
- students characteristics**

STUDENT MODULE (1)

We respect the following facts about students; they have

- different **motivation** towards learning
- various **family background**
- different **habits** in terms of **when** and **how** to learn
- different previous **knowledge** of the subject
- different level of **talent** for various disciplines
- different **learning styles**
- different type of **memory** and differently trained memory.

STUDENT MODULE (2)

Students

- can be differently concentrated, tired, etc.
- demand various level of comprehension and application of acquired knowledge

STUDENT MODULE (3)

Students characteristics applicable in e-learning:

- **sensual perception:** visual – auditive – kinesthetic
– verbal
- **social aspects:** student likes to work
alone – with teacher – in pair – in a group
- **affective aspects:** motivation to study
internal, external

STUDENT MODULE (4)

Another students characteristics applicable in e-learning:

learning tactics:

- **orderliness:** logical – heuristic
- **method:** theoretical deduction – experimentation
- **approach:**
 - atomistic (bottom-up) – holistic (top-down)
- **conception:** in depth – strategic – superficial
- **self-regulation:**
 - directive (dependent, unable to organise own studies, need instructions)
 - mixed
 - free (entirely independent)

STUDENT CHARACTERISTICS TESTING

Aim: to determine classes of virtual students
questionnaires published in education and
psychological literature:

VARK - Fleming

(**V**isual**A**uditory**R**ead/write**K**inestetics)

LSI - Dunn&Dunn

(**L**earning**S**tyle**I**nventory)

ILS - Felder

(InventoryOf**L**earning**S**tyles)

LSQ - Stenberg

(**L**earning**S**tyle**Q**uestionnaire)

questions
useful for
e-learning

After analysis of data from pilot research –

results were not satisfying

AUTHOR MODULE

ADAPTIVE TEXT BOOKS – Methodological Approach

e-learning:

- teacher is “replaced” by study materials
- e-learning study “books” can be prepared at many different forms and variants

sensual perception
depth of interpretation



ADAPTIVE TEXT BOOKS – Methodological Approach

LAYERS IN THE TEXTBOOK

INTERPRETATION PART

includes

theoretical part
semantic part
fixative part
practical part
motivation part

TESTING PART

includes

tests
questions
assignments

ADAPTIVE MODULE – DESCRIPTION OF RULES FOR LMS RUNNING

STUDENT
CHARACTERISTICS

EDUCATIONAL MATERIALS
IN DIFFERENT VARIANTS



example of rule

**If student is not motivated
then you must add more
motivation elements**

Student A

- prefers interpretation with non-complicate logical explanation
- prefers intuitive learning to logical learning
- classifies information with difficulties
- study materials and time given to learning are important for him/her
- auditive type
- average student.

will be offered:

- general quality of interpretation (with respect to the aim of subject)
- study text on the basic theoretical level
- practical examples
- summary and key conception are audio recorded

Student B

- follows in his/her previous knowledge
- knows how to differentiate principal ideas and how to find relations among them
- makes his/her own notes during a lecture
- graphic design is important part of study material
- can apply new information
- prefers various ways of learning (listening, reading, texts, graphic objects, etc.)
- likes learning, he/she is systematic

will be offered:

- study materials with graphs, tables, conceptual maps
- changes in presentation – listening and reading, watching, animation
- practical examples

Student C

- has basic knowledge of the topic
- follows in his/her previous knowledge
- knows how to differentiate principal ideas and how to find relations among them
- is more theoretical than practical
- does not like to learn by heart
- needs to derive logical processes
- likes learning
- knows how to find information on the internet or in a library
- is motivated to learning

will be offered:

- detailed explanation with logical deduction of definitions, relations and formulas
- keys words
- concept maps, graphs and diagrams
- references to external information

CONCLUSION

- complex project;
- large team of experts in informatics, pedagogy and psychology;
- development of adaptive textbook is time-consuming;
- optimism 😊 in work.

THANK YOU FOR YOUR ATTENTION

katerina.kostolanyova@osu.cz