PUBLIC INFORMATION AND EDUCATIONAL ENVIRONMENT AS ONE OF THE WAYS TO IMPROVE THE ICT COMPETENCE OF FUTURE SPECIALISTS

Borys Grinchenko Kyiv University, UKRAINE
Prof. Nataliia Morze
Oksana Buinytska
## Trends in Education

### Macro-
- New skills and competences
- Demographic changes
- Globalization

### Mezo-
- Informal learning
- Reform in education: distance learning technologies, changes in corporate training

### Micro-
- Informal learning, attention to the development of competencies
- Increasing number of Y-generation representatives in labour market
- Uneven use of technology in teaching of different generations

Ensuring the development of high-quality electronic information and educational environment

Corporate standards of the University

Electronic information and educational environment of the University

Personal learning environment of student

Personal learning environment of teacher

ICT competency of student

ICT competency standards of teachers
COMPONENTS of University Learning E-environment

Organizational Component

- Organization structure
- Legal Documentati on
- Corporate Standards

Content Component (electronic information resources): text oriented, graphic, multimedia

- Learning
- Scientific
- Methodological
- Monitoring
- Reference

Technological component (collaboration tools between all participants of the learning process)

- IT-infrastructure
- Centralized services (LMS, virtual learning environment, CMS)
- Decentralized services (personal Learning environment for students & teachers)
The process of creating and using information and educational environment

- **Openness**
  - Student
  - Teacher
  - University
  - Community

- **Creation**
  - Model
  - Who makes
  - Sequence

- **Purpose**
  - Purpose
  - Quality
  - Effectiveness

- **Educational Policy of the University**
  - Purpose
  - Quality
  - Effectiveness

- **Development**
  - Purpose
  - Quality
  - Effectiveness

- **Use**
  - 1. Quality
  - 2. Safety

- **Purpose**
  - 1.7x24x365
  - 2. Advertising
  - 3. Soft skills
  - 4. Quality
Corporate standards - condition for the development of information and educational environment of the University

• Standards for Quality Management System
• Standards for IT and information environment
• Standards of training documentation in electronic form – Electronic Document Management
• Standards to provide additional education on the basis of DL
• Standards on scientific and methodological materials and tests
• Standards for the training
• Standards for organization of scientific activity
• **ICT competency standards of teacher and student**
• Standards for e-content and e-learning environment
• Standards for educational technology
# Model of corporate standard of ICT competence of teaching staff

<table>
<thead>
<tr>
<th>Activity</th>
<th>Technological literacy</th>
<th>Enhancing knowledge</th>
<th>Creating knowledge</th>
</tr>
</thead>
<tbody>
<tr>
<td>Understanding the role of ICT in education and their use</td>
<td>Familiarity with education policy</td>
<td>Understanding educational policy</td>
<td>Innovation in education</td>
</tr>
<tr>
<td>ICT</td>
<td>Basic tools</td>
<td>Advanced tools</td>
<td>New technologies</td>
</tr>
<tr>
<td>Educational work</td>
<td>Basic knowledge: fragmented ICT use in education</td>
<td>Application of knowledge: systematic use of ICT in education</td>
<td>Skills knowledge of society</td>
</tr>
<tr>
<td>Scientific activities</td>
<td>Basic knowledge of scientific communication</td>
<td>The use of scientific knowledge (incl. virtual) electronic communications and scientific cooperation</td>
<td>Skills implementing research projects</td>
</tr>
<tr>
<td>Advanced training</td>
<td>ICT literacy: formal training in ICT</td>
<td>Management and direction: informal ICT learning</td>
<td>The teacher as an exemplary student: study on public courses (eg. MOOC)</td>
</tr>
</tbody>
</table>
# ICT competence Model of student

<table>
<thead>
<tr>
<th>Levels of Masters</th>
<th>Basic (basic knowledge and skills to meet the needs of their own cognitive)</th>
<th>Advanced (to meet the challenges of educational, scientific, social, cultural and practical nature)</th>
<th>Professional (component of professional competence to solve professional tasks)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aspects</td>
<td>Exploring ICT</td>
<td>Basic knowledge and skills</td>
<td>Advanced Knowledge and skills</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Basic tools</td>
<td>Complex tools</td>
</tr>
<tr>
<td></td>
<td>Educational Activities</td>
<td>Application of knowledge and skills</td>
<td>Solving Competence Tasks of educational nature</td>
</tr>
<tr>
<td></td>
<td>Research activities</td>
<td>The use of scientific communication</td>
<td>Scientific cooperation</td>
</tr>
<tr>
<td></td>
<td>Social and cultural activities</td>
<td>Knowledge and skills of citizen knowledge society</td>
<td>Solving Competence general tasks</td>
</tr>
</tbody>
</table>
Even the formation of the ICT competence of students

Department of Computer Science and the Department of Information Technology and Mathematical sciences

1st level, corresponding 1st bachelor year – changes in the curriculum in computer science

2nd level, corresponding 4th bachelor year, or early education in magistracy

3rd level, 2nd master year – a component of professional competence - Master

producing department

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Monitoring Tools of formation of ICT competence of student

Basic level
(first year undergraduate)

- Test of general purpose software
- Tests after studying Microsoft IT-Academy courses, obtaining appropriate certifications from Microsoft (including international standard)

Advanced level
(bachelor)

- The content of personal electronic learning environment of master and its compliance with the criteria
- A set of competency objectives, system and evaluation instruments for solving them

Professional level
(magistracy)

- Master Portfolio and its compliance with the developed requirements
- Master's thesis and its relevance to the developed requirements for registration and submission
## Monitoring of forming basic level of ICT competency 1 year

### Formation of basic ICT competence 1 year University students (%)

<table>
<thead>
<tr>
<th>Institution</th>
<th>high (45-50 points)</th>
<th>sufficient (35-44 points)</th>
<th>satisfactory (25-34 points)</th>
<th>low (15-24 points)</th>
<th>zero (0-14 points)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Humanitarian</td>
<td>1</td>
<td>44</td>
<td>52</td>
<td>3</td>
<td>0</td>
</tr>
<tr>
<td>Human</td>
<td>0</td>
<td>26</td>
<td>57</td>
<td>12</td>
<td>5</td>
</tr>
<tr>
<td>Art</td>
<td>0</td>
<td>30</td>
<td>46</td>
<td>23</td>
<td>1</td>
</tr>
<tr>
<td>Society</td>
<td>0</td>
<td>41</td>
<td>51</td>
<td>6</td>
<td>2</td>
</tr>
<tr>
<td>Pedagogical</td>
<td>0</td>
<td>23</td>
<td>66</td>
<td>10</td>
<td>1</td>
</tr>
<tr>
<td>University</td>
<td>0,8</td>
<td>32,4</td>
<td>54,4</td>
<td>10,6</td>
<td>1,8</td>
</tr>
</tbody>
</table>
Monitoring formation of baseline ICT competence

5th year

<table>
<thead>
<tr>
<th>Institution</th>
<th>high (45-50 points)</th>
<th>sufficient (35-44 points)</th>
<th>satisfactory (25-34 points)</th>
<th>low (15-24 points)</th>
<th>zero (0-14 points)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Humanitarian</td>
<td>0</td>
<td>62</td>
<td>33</td>
<td>4</td>
<td>1</td>
</tr>
<tr>
<td>Human</td>
<td>0</td>
<td>53</td>
<td>38</td>
<td>9</td>
<td>0</td>
</tr>
<tr>
<td>Art</td>
<td>0</td>
<td>39</td>
<td>43</td>
<td>14</td>
<td>4</td>
</tr>
<tr>
<td>Society</td>
<td>2</td>
<td>51</td>
<td>28</td>
<td>15</td>
<td>4</td>
</tr>
<tr>
<td>Pedagogical</td>
<td>3</td>
<td>74</td>
<td>24</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>University</td>
<td>1</td>
<td>55.7</td>
<td>33.2</td>
<td>8.3</td>
<td>1.8</td>
</tr>
</tbody>
</table>
Conditions for raising the basic level of forming ICT competence

- Training and exams in the IT Academy: obtaining certificates, including the international sample
- Competency solving problems (educational, research and professional)
- Specifying the position of special course for Masters “Presentation of science activities of masters through ICT”
Student’s Personal Learning E-environment

Cooperation

search

Organization

communication

publication
Main Components Of A Student’s Personal Electronic Environment

- Collaboration
- Organization
- Search
- Communication
- Monitoring
- Publication
Classification Of The Most Popular Tools For Activities

Group of tools for students

Organization
- Moodle
- Edmodo
- Coursera
- Khan Academy

Search
- Google Search
- Feedly
- Google Scholar
- Google Maps
- Google Translate

Publication
- YouTube
- Services of sharing images:
  - Instagram
  - Picasa
  - Flickr

Collaboration
- Evernote
- OneNote
- Google Docs
- Wikipedia
- Adobe Connect
- Popplet
- PB Works
- Blackboard Collaborate

Communication
- Social Network:
  - Facebook
  - Google+ & Hangouts
  - Twitter
  - LinkedIn
  - Yammer
- Email
- Skype

Cloud storage services
- SkyDrive
- Google Drive
- Dropbox

Source: Own work based on annual list compiled by Jane Hart from the votes of learning professionals worldwide, 2013
Relationship Of University’s And Student’s Electronic Educational Environment

- Electronic content
- Modern web-services
- Software applications
- Electronic communication
- Collaboration
- Solving educational and scientific problems
- Educational targets
- Monitoring of a personal academic progress
- E-portfolio, electronic library, educational and scientific projects
BORYS GRINCHENKO KYIV UNIVERSITY

THANK YOU FOR ATTENTION!

QUESTIONS?