Application of the e-Learning model in Educational Institutions in Bosnia and Herzegovina

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Unlike some European countries or the United States of America, there are still no clearly defined e-learning strategies in Bosnia and Herzegovina, therefore instances of using online learning are only sporadic and more experimental in nature and can only be assessed as attempts by individual schools to use Google Education in a short period of time (during one week in November).
Edcuation in virtual environment

- Enables students to have access to numerous materials, contents and experiences which in traditional schooling would not be possible.
- Implementation of e-learning tools in educational institutions in B&H contributes to competitiveness and provision of skills and knowledge necessary for equal participation in the world trends.
Innovative educational platform, which helps upper-elementary students learn, understand and master the material faster and better
Online platform used in secondary school in Sarajevo
VLE helps students in forming closer relationship with teachers and other students
VLE allows teachers to provide students with array of information coming from multiple sources, which is more than what they receive in a traditional classroom.
Online learning encourages students to have a flexible attitude toward learning, or to access materials when and where they want.

E-learning increases the constructive interaction between teachers and students.

Student satisfaction survey

- Agree: 70%
- Neutral: 25%
- Disagree: 5%
E-learning offers opportunities to discuss materials with other students and teachers which does not happen in traditional teaching where time for questions and discussion is substantially limited.
Organization of electronic subjects enables students to easily access learning content and fulfill tasks according to own time schedule.

Students in less developed regions and those underserved by government, which is often the case in B&H, can utilize the same educational resources as students in world capitals by accessing online lectures at affordable prices.
Most students use the Internet every day and communicate through social networks, which significantly contributes readiness to accept new IT solutions in the teaching process.

Differences in attitude towards e-learning model among students relate to the purpose and frequency of using the Internet.
Analysis of the main components resulted in a three-factor solution

<table>
<thead>
<tr>
<th>Description</th>
<th>Component 1</th>
<th>Component 2</th>
<th>Component 3</th>
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</thead>
<tbody>
<tr>
<td>20. VLE helps the professor to respond to individual learning needs.</td>
<td>0.722</td>
<td>0.271</td>
<td>-0.142</td>
</tr>
<tr>
<td>19. VLE supports a close relationship between students and instructors.</td>
<td>0.718</td>
<td>0.240</td>
<td>-0.004</td>
</tr>
<tr>
<td>18. VLE enables professors to provide students with different sources of learning.</td>
<td>0.657</td>
<td>0.296</td>
<td>0.235</td>
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<tr>
<td>17. VLE increases the level of interaction between individual students and instructors</td>
<td>0.579</td>
<td>0.295</td>
<td>0.037</td>
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<tr>
<td>16. VLE helps professors to be available to students outside the classroom</td>
<td>0.515</td>
<td>0.293</td>
<td>0.193</td>
</tr>
<tr>
<td>15. VLE increases student workload.</td>
<td>0.228</td>
<td>0.768</td>
<td>0.084</td>
</tr>
<tr>
<td>14. VLE increases costs for individual students (printing).</td>
<td>0.220</td>
<td>0.709</td>
<td>0.059</td>
</tr>
<tr>
<td>13. VLE helps students prepare well for lectures in an online classroom.</td>
<td>0.203</td>
<td>0.613</td>
<td>0.126</td>
</tr>
<tr>
<td>12. VLE provides greater transparency for individual learning.</td>
<td>0.410</td>
<td>0.605</td>
<td>-0.037</td>
</tr>
<tr>
<td>11. VLE provides students with flexibility in terms of their educational needs (offering access to materials at any time - allowing them to study when they have time).</td>
<td>0.409</td>
<td>0.566</td>
<td>-0.133</td>
</tr>
<tr>
<td>10. VLE increases opportunities for discussion and debate among students outside the classroom.</td>
<td>0.128</td>
<td>-0.238</td>
<td>-0.816</td>
</tr>
<tr>
<td>9. VLE supports the exchange of ideas and experiences among students.</td>
<td>0.449</td>
<td>-0.217</td>
<td>0.630</td>
</tr>
<tr>
<td>Characteristic root</td>
<td>4.144</td>
<td>1.184</td>
<td>1.003</td>
</tr>
<tr>
<td>% of the explained variance</td>
<td>23.017</td>
<td>21.019</td>
<td>10.067</td>
</tr>
</tbody>
</table>

Table 1: The factor structure of the variables.
71% of students agreed that VLE provides flexibility to students in:

1) Meeting their educational needs by offering access to materials always and anywhere - allowing them to study when they have time

2) Accessing diverse content and learn how to use online materials same as any other student anywhere in the world who are not limited by a national curriculum

3) Strengthening adaptability, skills and knowledge in the use of communication tools and softwares that have become standards in the digital age.
Factors hindering the use of e-learning

- Access to information and communication technologies in schools are inadequate and uneven, with a somewhat better situation in urban areas.
- Lack of capacity to utilize available technology, since most teachers lack skills necessary for the smooth implementation of the e-learning model.
- One of the main disadvantages of using e-learning is that it relies on human support and depends on humans to create and prepare course materials or related software.
Conclusion

Adopting e-learning by learners in the education system is conditioned by two main factors:

Selecting an appropriate online e-learning platform that will offer all the necessary tools for successful e-learning model delivery.

Designing a virtual learning environment that will allow students to easily access content and communicate with teachers and other students effectively.
Positive research results will serve as a basis for establishing a national-level strategy to support the introduction of e-learning as an equal form of education in Bosnia.

Funds (both material and human) will be allocated with overall goal to enable the implementation of new models of learning adapted to the digital age and globalization changes of the 21st century.

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