USING THE DIGITAL POTENTIAL OF EDUCATION (BASED ON THE WORKING EXPERIENCE)

INTRODUCTION

The introduction of digital technology is now much more common than just a term in our everyday language. More and more in the digital world, especially as we grapple with the pandemic coronavirus, higher education instructional design is facing new demands and the changes that flow from them. Digital media promise a potential in order to, on the one hand, provide new ways of learning and support learning processes and, on the other hand, prepare students to live and work in a digitized world. Therefore, more and more digital competencies are being formed to act in a changed world against this backdrop. Consequently, teachers also need new competency profiles in order to reflect and use digital opportunities and digital tools intelligently. Only in this way, all participants can not only participate in the digitized world, but also actively participate in it.

It should be emphasized that in modern society, which has entered the information age, in the last decade there has been a gradual transition from traditional education with limited access to information to a qualitatively new education using modern information technology focused on the implementation of learning processes.

For this purpose, Voronezh State Technical University has created an electronic information and educational environment (EIEE) based on Moodle platform. The purpose of EIEE is to provide information openness of the university in accordance with the requirements of the current legislation of the Russian Federation in the field of education, organization of educational activities of the university and providing access to EIEE’s information and educational resources for students and teaching staff (https://old.education.cchgeu.ru). EIEE is designed at the university, among other things, for the purpose of:

- Formation of a unified educational space and organization of an educational process for the educational programs being implemented through the use of EIEE information and educational technologies and services;
- Providing the educational process with EIEE information and educational resources in accordance with the requirements for the implementation of educational programs implemented in the university;
- Accessing students and university employees, regardless of their location, to EIEE information and reference and educational resources of the university through the use of EIEE information and communication technologies and services;
- Ensuring communications and interaction between all participants of the educational process who have access rights to EIEE;
- Providing mechanisms and procedures for monitoring the educational process (ibid, p.1)
The university has developed competencies with the help of which, using various content elements, teachers can quickly and easily rethink the course of classes, regardless of the knowledge of students. For example, on the educational portal of VSTU (https://education.cchgeu.ru), through "VSTU Student Chat" (https://studchat.cchgeu.ru), "VSTU Cloud" (https://cloud.cchgeu.ru), learning units, and tools for their solution are provided. Digital learning units serve as practical examples describing specific learning situations in vocational training with the help of digital media. On the one hand, it is possible to access already published and high-quality digital learning units. According to e.g. German experts (KNUTZEN, RÖWERT, 2020; RÖWERT et al., 2020), such experiences also offer the possibility to send and publish own content for digital learning. On the other hand, it creates new opportunities for teachers, i.e. internal education, since all three stages of 1) learning, 2) training, 3) development are new digital learning units developed, and they can be divided and applied through subsequent publication, as well as of phase and cross-national purpose. The elements and resources of the course (subject) presented on the VSTU education portal provide a learner with a wide range of opportunities:

- To download teaching material on any subject to learn;
- To view attendance in any academic discipline;
- Review current performance in a discipline;
- Attach own files (at the teacher’s request) for checking current test, solitary, laboratory and practical works, as well as course projects (works).

The Institute of Technical Education and Higher School Didactics at the Technical University of Hamburg (DG) has presented an interesting experience in piloting the development of digital learning modules in the university education of teachers. Teachers and students learning in industrial and engineering areas (media technologies), as well as training in general education disciplines independently opened, within the framework of their two semesters, a draft seminar of new thematic sections for use in schools. At the beginning of the seminar, however, it was felt that the target perspective to hold an examination for corresponding new subjects would have to be expertly prepared in a form a sub-directional digital unit. This target perspective served both motivational and indicative purposes. Students may have been motivated by the prospect of working on an approach to learning in the stages of work, published in retrospect on the Internet as an open educational resource. In addition, the didactic framing of the digital sub-directional units in digital learning. lab at the Technical University of Hamburg, Germany, gave them a guideline for developing their own sub-directional approaches. At the same time, the students were able to recall particular cases and be guided for themselves through more than 200 open digital learning units in digital. learning. lab created by experienced Hamburg teachers, in particular within the first phase of the project until 2019 (KMK, 2017). As a result of the project, the digital learning units were successfully presented by groups of students and, after their quality assurance, were published as open educational resources for other beginners (https://digitallearninglab.de).

**Consolidating the development of digital learning units in the learning process**

Being based on the successful use of EIEE within university education programs, the practice shows how a digital lesson on an open platform can be used independently by students/learners.
Figure 1. Stages in the development of digital learning units within university courses: own illustration

Source: Search data.

Stage 1: Contextualizing the form of learning into digital time to begin a workshop.

Digital media should not be integrated into learning for their own sake, but they are rather designed to advance students' competencies to shape participation in a world permeated by digital media. Following this goal, seminar leaders in university education should first show why competencies for the digital world should be acquired or expanded by both students and faculty. To contextualize the development of own digital learning units by students, it is suggested that we move to the competency framework established by the educational-methodical complex of a subject, to which all presented and published digital learning units should be oriented. Instructions and methodological materials for working with digital learning technologies, developed by the Department of Digital Learning Technologies of VSTU and provided to students are presented to visualize the content of the subjects.

Stage 2: Introducing EIEE as an online competency center for organizing and delivering classes.

Provided that student-teachers develop their own digital learning units within university learning activities in individual or group work, it seems reasonable to comprehensively present to students the EIEE platform with its functions at an early stage of their learning in terms of students’ motivation and management. To present the platform within a learning activity, the following approaches are suggested:

- Sample presentations for free use,
- A free online self-study course,
- Presentation and discussion of specialized didactically related existing digital learning units, which can be narrowed down using the filter function on the right or left navigation bar of the learning software.
Stage 3: Promoting competencies for developing and publishing open-licensed teaching approaches.

For students, as novice teachers, publishing their own teaching approaches online will usually be a new experience. There are questions here about the technical functionality of the VSTU EIEE platform, and various legal issues related to authorship and licenses. To empower students to safely develop their digital approaches to learning, topics such as Open Educational Resources (OER), Creative Commons, etc., authoring roles, and the use of free educational resources need to be addressed. To do this, they can resort to existing content, such as the German script “Introduction to Information Technology” developed by Axel Dürkop in the Institute for Technical Education and Higher Didactics (ITBH) at TU Hamburg, or the online self-study course “Introduction to Open Educational Resources”, etc. (DÜRKOP, LADWIG, 2018; BRAUSE, SPAHN, 2018).

Stage 4: Guiding and accompanying the development of digital learning units

If students have already reached a certain degree of maturity in the development of their approaches to digital learning, students are proposed in the second half of the university teaching event to perform its technical implementation and the chaperones can withdraw. First, students are asked for this to register on the EIEE platform, seminars must also register. Then the technical steps to submit digital learning units with the students can be directed by manual input (not automatic). Students co-develop their digital learning unit as a group; students must first create a new digital learning unit for the group and then add all other, already registered group members as “co-creators.” In order for their workshop leader to have insight into these projects at various stages of digital learning unit development, the workshop leader must also be added by the students as their co-author. These regular checks can simultaneously contribute to the management of learning processes in the context of the learning activity.

Stage 5: Submitting Digital Learning Units.

The learning activity can be designed so that students develop digital learning units as their study or exam activity. In this case, students should inform the teacher of the completion of their digital learning units at the last moment. Teachers can determine whether digital learning units are submitted by the VSTU EIEE editorial team with the submission of digital learning units for assessment or whether students wait for the teacher’s assessment and feedback before sharing their developed digital learning units for assessment. If students have submitted their digital learning units for visualization by the VSTU EIEE editorial team, they cannot be edited during the teacher’s review period. At the same time, the CHANGE function is present here.

After successful review by the editorial team, EIEE either publishes the educational “building” unit, or students receive a direct feedback message in case of post-processing evaluators’ wishes are available, and the base is released for processing again. The current editing and submission status can be viewed by students, as well as the teacher, under the menu item “Personal Office My Content.” After a successful review, the digital learning unit will be published, and students as well as their teacher will receive a confirmation message.

**Prospects for further consolidation of open platforms in teacher education**

After successfully testing the possibilities of using EIEE as an open learning design platform during remote learning of teachers at the university, ways of further consolidating EIEE in other places providing teacher education were identified. At the same time, further scenarios of use in all three stages of teacher education are possible, as well as the development of an international network of open digital learning technologies. For this purpose, it is possible to present teachers with modern proposals for their professionalization in the designing of lessons in digital changes; we can look forward to further scenarios for the use of open platforms, such as the EIEE VSTU or the German digital.learning.lab TU Hamburg, where the experience can be considered and analysed.
Let us consider how the gained experience can be applied in teaching a foreign language at the university

Foreign language teaching in a time of partially open universities with strict contact and hygiene rules is subject to completely new constraints and therefore requires a rethinking in the planning and execution of classes. The didactics of foreign language teaching, having divided into remote and face-to-face classes, are shifting between the two poles:

Source: Search data.

Based on these considerations, it is necessary to develop functional strategies for both types of learning and to link them sensibly to each other. Remote Learning. The following competencies can be practiced and expanded at home by students on their own:

- Writing (alone or in pairs / in groups in shared documents or by telephone / messenger, etc.)
- Written language mediation,
- Reading (e.g., academic texts, short informational texts, extended texts, websites, film reviews, short stories or excerpts to full-length works)
- Listening (e.g., audio files, podcasts, songs, interviews, instructional videos, documentaries, short films, commercials, etc.)
- Monologic speech (podcast recordings or commentaries),
- Language learning (e.g., vocabulary or conjugation),
- Grammar (application and practice, independent rule development depending on the age of learning).
- Orientation in media offerings (e.g., explore websites of museums, zoos, cultural sites, sporting events, etc. independently and obtain this information, use learning applications purposefully, acquire sociocultural knowledge or intercultural experiences independently).

At the same time, remote learning has the following limitations:

- A teacher as a linguistic role model, instructor, coach, or facilitator is reachable only indirectly,
- Spatial, familial, and technical abilities of the learners are different,
- The learners must be able to self-determine learning load, tasks, complete them meaningfully and understand them independently, work with focus, use help
functionally (e.g., online dictionaries or grammars), and purposefully take breaks from their work

- Students should be able to motivate themselves to work, structure their own workday, and therefore achieve their goals.

In-class exercises. The following competencies cannot be practiced and extended or be mastered only partially at home. Thus, the focus of in-class exercises is on the following:

- Dialogic speech (e.g., oral interaction between teacher and student, performing course tasks),
- Fluent speech (dialogic and monologic speech, fluent articulation in learning situations),
- Oral language mediation,
- Reading aloud (punctuation, stage reading),
- Listening comprehension in interaction,
- Communicative actions (e.g., paraphrasing, giving demands, recovery strategies, communication maintenance strategies)
- Language tools (e.g., listening and vocabulary checks, tilling speech, irregular verbs),
- Learning grammar rules.

Of great importance for both types of learning is the feedback on the success of learning (CHECHETKA et al., 2020). It should also be noted that classroom instruction has a number of limitations.

- According to the rules, partner and group works are not possible when pandemic contacts are threatened.
- Since individual work is already taking place on a large scale in remote learning, it must be reduced when teaching is performed in a classroom setting.
- Movements in the classroom can be limited.
- Changing work materials or aids (e.g., realia, balloons, dialogue cards, and reference cards) is possible in a very limited way.

**Combination of remote and in-class learning modes**

If remote and in-class types of learning are conducted in combination, they are useful and effective for students; teachers should strive to combine both forms of learning to achieve synergistic effects (BERGER). Consequently, in-class learning can be linked to the practiced or developed content of remote learning, giving preparatory tasks on remote learning. For example, dialogue roles can be prepared at home and role-plays can be implemented in classroom sessions (CHECHETKA, 2019). On the other hand, an additional task can also be given by remote learning, such as practicing at home the vocabulary or language tools introduced in the classroom (CHECHETKA et al., 2020). For example:

| Competencies          | In-class learning                                      | Remote learning                                      |
|-----------------------|--------------------------------------------------------|------------------------------------------------------|
| Reading, writing      | Present a text in a class session with an emphasis on stage reading/pronunciation | Tasks for understanding details, editing tasks to convey content; rewriting text (e.g., changing perspective, changing the type of text or time) |
| Speaking, writing     | Carry out a discussion, conduct a role play            | Writing a memorandum, reader’s letter, newspaper article, etc. |
| Language tools        | Introduce vocabulary or grammar                        | Feedback from the teacher about the success of the reflection-based learning |

**Table 1. Combination of remote and in-class learning modes**

**Source:** Search data.
Thus, in contrast to traditional training, a more consistent division of individual competency areas into remote and classroom instruction is necessary when planning. But with all the limitations of this situation, there are also advantages. For example, in classroom instruction, learning takes place in small groups, so the teacher can better support individual students, while asynchronous work in remote learning promotes individual learning. In addition, more challenging tasks are now possible in remote learning than in regular homework. By changing the forms of learning and the associated changes in focus, more attention can be given to individual competencies at appropriate stages. Many students work more motivated in alternating phases because the daily routine stops.

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Using the digital potential of education (based on the working experience)

Utilizando o potencial digital da educação (com base na experiência de trabalho)

Utilizar el potencial digital de la educación (basado en la experiencia laboral)

**Resumo**

O artigo analisa a abertura de informação das universidades de acordo com os requisitos previstos pela legislação vigente da Federação Russa no campo da educação. Considera, ainda, a organização das atividades pedagógicas desenvolvidas pelas universidades e o acesso à informação e aos recursos educacionais para alunos e pessoal científico-pedagógico. São consideradas as etapas de desenvolvimento das unidades de aprendizagem digital no âmbito dos cursos universitários. Estratégias funcionais para planejar e conduzir a aprendizagem remota e presencial são investigadas pelo exemplo do ensino de línguas estrangeiras em uma universidade técnica / não linguística.

**Abstract**

The paper analyses the information openness of universities in accordance with the requirements provided by the current legislation of the Russian Federation in the field of education. It also considers the organization of educational activities carried out by universities and providing access to information and educational resources for students and scientific-pedagogical staff. The stages of digital learning units’ development within the framework of university courses are considered. Functional strategies for planning and conducting remote and in-class learning are investigated by the example of teaching foreign languages at a non-linguistic/technical university.

**Palavras-chave**: Tecnologias digitais. Ambiente eletrônico de informação e educação (EIEE). Conteúdo. Unidades digitais de aprendizagem. Ensino de línguas estrangeiras.

**Keywords**: Digital technologies. Electronic information and education environment (EIEE). Content. Digital learning units. Foreign language teaching.

**Resumen**

El documento analiza la apertura informativa de las universidades de acuerdo con los requisitos previstos por la legislación vigente de la Federación de Rusia en el campo de la educación. También considera la organización de las actividades educativas que realizan las universidades y el acceso a la información y los recursos educativos para los estudiantes y el personal científico-pedagógico. Se consideran las etapas del desarrollo de las unidades de aprendizaje digital en el marco de los cursos universitarios. Las estrategias funcionales para planificar y llevar a cabo el aprendizaje a distancia y en clase se investigan con el ejemplo de la enseñanza de lenguas extranjeras en una universidad técnica / no lingüística.

**Palabras-clave**: Tecnologías digitales. Entorno electrónico de información y educación (EIEE). Contenidos. Unidades de aprendizaje digital. Enseñanza de lenguas extranjeras.