

УДК 378.4(438):005

**ANALYSIS OF VIRTUAL UNIVERSITIES ACTIVITY  
ON THE EXAMPLE OF POLISH E-LEARNING PLATFORMS***M. D. Rizun, post-graduate student, SHEI «National Mining University», mariia.rizun@gmail.com*

The phenomenon of virtual universities is stated to be a new step in education. The role of virtual universities in education is analyzed on the example of Polish e-learning platforms. The most notable definitions of virtual universities are given in the paper. The expanded classification of virtual universities is presented with the objective to simplify the process of their assessment and selection. Conclusions are drawn based on the statistics of differences and similarities of virtual educational platforms in Poland.

**Keywords:** e-learning platform, virtual platform, virtual university, classification, assessment.

**Statement of problem.** The process of education has always been connected with such institutions as schools, universities, colleges etc. It has been a common concept that information and knowledge can be transferred only by means of a direct interaction between a student and his/her teacher. The first attempt to separate them was taken with the help of correspondence, when printed media allowed learners to perceive knowledge at home. Later, the development of information and communication technology (ICT) and its application to education greatly expanded possibilities of institutions to deliver learning in a variety of venues. Institutions that use ICT as the tool to deliver learning can be defined as *virtual institutions* [6]. Due to the relative newness of the phenomenon of virtual institutions, there is rather little research in this area, particularly with a focus on their characteristics and distinctions.

**Analysis of recent papers.** The phenomenon of virtual institution has obtained many other synonymous names: virtual university, e-university, online university, e-learning platform, distance learning, distributed learning, networked learning, virtual learning community, virtual educational platform, flexible learning environment, web-based learning, and computer learning [5, 1]. However, it will not be a mistake to claim that the most frequently used notion for this phenomenon is «*virtual university*» (VU).

The scope of terms associated with VU has created a respectively wide range of its definitions. The most notable are presented further:

1. An institution which is involved into the

educational process as a direct provider of learning opportunities to students and is using *information and communication technology* to deliver its programs and courses and provide tuition support. It is also likely to be using ICT for such other core activities as: administration, materials development, production and distribution; delivery and tuition; career advising, prior learning assessment and examinations [5].

2. An organization that has been created through *alliances/partnerships* to facilitate teaching and learning to occur without itself being involved as a direct provider of instruction [10].

3. A *distance learning* consortium composed of public higher education institutions (two-year and/or four/year) within a single system or state [4].

4. A model of a real university in the *virtual space*, which offers all its services to the learners in an integrated way through *Internet*. These services include online learning materials, specialized virtual centers for courses development, library and administrative functions, interactive environment for asynchronous and synchronous communications and online collaboration [13].

5. A multimedia network learning environment that differs from more traditional learning environments because it is *customizable* [8].

6. A virtual learning environment that *re-draws the physical boundaries* of the classroom, allows learning to be a *continuous time-independent process* and enables multilevel, multispaced knowledge creation through the use of information technology [11].

7. An extended learning community, which

constitutes *virtual campus* on the basis of advanced communication tools as *World Wide Web* and telephone systems [12].

To summarize the above-mentioned definitions it is reasonable to claim that virtual university is a *consortium of «bricks-and-mortar»* (the term «brick-and-mortar» describes the physical presence of a building(s) or other structure) institutions, united in the virtual space through the tools of World Wide Web and ICT, with the aim of shifting physical borders of a classroom and providing distant, time-independent learning process, available and suitable for everyone with a desire to study.

In 1999, Wolf and Johnstone created the institutional taxonomy to clarify the conventional terms applied for existing structures of higher education. As part of this taxonomy a «public virtual university classification matrix» was developed to simplify the process of differentiating between the types of VU [7].

**Aim of the paper.** The main objective of this research papers is to present the classification of virtual universities, developed by the authors, and to consider, how it can be applied in practice to assess VUs.

**Materials and methods.** On the basis of Wolf and Johnstone's taxonomy and taking into consideration the work [3] the authors have worked out their own *expanded classification* of virtual universities (figure 1), which includes wide range of features a VU may have.

The objective of the developed classification is to create the system approach to the VU assessment, which will unite points of view from totally different sides, representing the interests of various participants of the operation process of virtual educational platforms. The authors suggest to consider two groups of participants, who belong to the external and internal environment of VUs. Such division will allow to systematize the tasks and goals of all components of the VU system on micro- and macro-levels.

#### 1. External:

- a) educational system representatives, who monitor and support the educational process;
- b) governmental representatives, exercising control of the current state of educational sphere;

- c) companies, which use or sell virtual platforms for advertisement placement (media companies);

- d) businesses, providing new technologies of educational process organization (platforms for web-conferences and seminars, cloud storage etc.) or searching for new investment projects.

#### 2. Internal:

- a) universities, eager to cooperate or to share experience;

- b) lecturers, interested in the implementation and development of innovative educational techniques;

- c) students, who prefer distant education to the so-called «brick-and-mortar» institutions.

Internal environment forms the basis of VU operation and is the essential part of its success. The presented elements of external environment, from the authors' point of view, effectively reflect the interests of internal participants in the macro-sphere, notably: university's mission (governmental representatives), juridical aspects (educational system representatives), informational issues (media companies) and technical support (business representatives).

The classification structure includes 10 sections, 13 subsections and 61 elements, which allow to receive a full description of any VU and carry out a comparative analysis when choosing an ideal virtual platform for particular purposes.

#### 1. Organization

This section allows to create general impression about university's origin, principles of its foundation and management. This information can help *estimate a university* in the process of choosing the learning platform, but it does not give an objective judgment about the quality of knowledge given.

##### 1.1. Structure

- a) Number of member-universities: 1; 2–5; 5–10; >10.

- b) Member-universities origin: 1 country; 2 countries; >2 countries.

- c) Foundation: university consortium; independent business.

- d) Offline students office (if present): university of origin; separate administration.

- e) Member institutions: universities, cultural institutions, businesses.

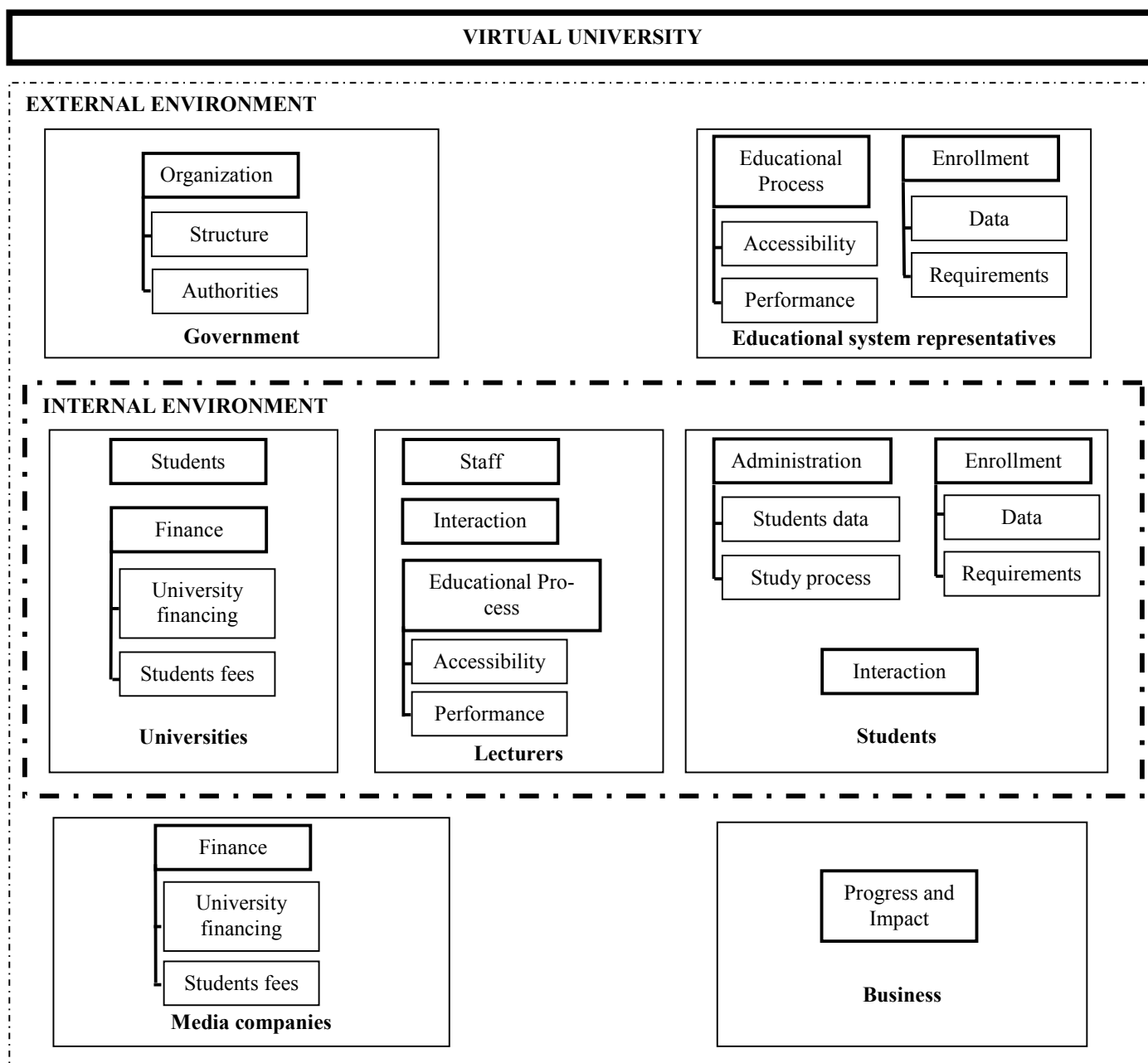


Fig.1.Virtual University Expanded Classification

Source: authors' development.

1.2. Authorities

- a) No specific organizational structure.
- b) Strict organizational hierarchy (president, rector, vice-rector, secretaries etc.).

2. Educational Process

The easiness of access to lectures and all other study materials at any time is the guarantee of *students' active involvement* with the educational process and their readiness to apply for other courses in future.

2.1. Accessibility

- a) Lectures available at any time / Only real-time broadcasting.
- b) Lectures for those who missed campus-based classes.

2.2. Performance

- a) Forms of tuition: lectures; workshops; individual tasks; group work; intermediate tests; final exams; tele-seminars.
- b) Forms of lectures: text, illustration, au-

dio, video, animation, simulation.

### 3. Enrolment

The “Data” subsection is mostly valuable for teachers, authorities, scientific research and social surveys. Students will hardly pay attention to the information about their peers when they are much more interested in what they can learn (see section 8). On the other hand, the *requirements for application* may reduce the range of VUs one wants to enter because of age, national or qualification *limits*.

#### 3.1. Data

- a) Keeping enrolment data.
- b) Reporting enrolment data officially.
- c) Enrolment data available for students.

#### 3.2. Requirements

- a) Previous qualification required.
- b) Available only for students of member-universities / Available for everyone.
- c) Age limit.

### 4. Students

The current section does not influence the decision-making process of a student very much, but it can at least witness the level of *VU's popularity* among students all over the world.

- a) Number of students: <50; 50–150; >150.
- b) Students nationality: countries of member-universities; international.

### 5. Finance

The necessity to pay fees for the whole education process or at least for the degree certificates at a VU may significantly decrease the number of its potential students – due to the *financial difficulties* some of them may have. The subsection «University financing» may be useful for investors or governmental bodies as well as for lecturers looking for vacancies at VUs. But it is supposed to be of no interest for students.

#### 5.1. University financing

- a) Self-supporting.
- b) Supported by state.
- c) Investments.
- d) Sponsors.

#### 5.2. Students fees

- a) Free tuition / Tuition fee required.
- b) Separate payment for certificate or diploma / Payment included in tuition fee.
- c) Scholarship available.

### 6. Staff

If a student sees the process of VU selection as a really important task, he/she will definitely pay attention not only to the content of courses, but to the lecturers who deliver these courses, to their qualification and experience. However, academic rank does not characterize lecturer's talent to teach, his/her personal qualities or level of knowledge in the specific area. To obtain such information, it is reasonable to pay attention to *students' feedback* about each lecturer of any course (see section 7).

- a) Number of lecturers: <10; 10–20; >20.
- b) Number of courses per one lecturer: 1; 2–5; >5.

c) Lecturers qualification: professors, senior lecturers, doctoral students; possession of additional qualification certificates.

d) Place of work: university of origin, member-university, business representatives (entrepreneurs).

### 7. Interaction

Students' feedback about courses, lecturers and VU's work in general is valuable and essential for two different reasons. First of all, students get the feeling that *their thoughts are important* for the VU's authorities and they believe that their opinions can help improve VU's operation. Thus they become more involved. Secondly, students may really come up with some good ideas and if the university's administrators are ready to take some critics, they can benefit greatly from bringing to live some evaluable *fresh ideas*.

- a) Students feedback page.
- b) Students chat/forum.
- c) Availability of direct student-teacher communication (email; Skype; tele-tutoring on the web-site etc.).
- d) Student evaluation (courses, lecturers and teaching materials).
- e) Lecturers peer evaluation.
- f) External expert evaluation.

### 8. Educational Programs

This section provides information, which is of major importance for university's potential students. It describes *the level of education provided* on the virtual platform, allows to pay attention to the features, which may not come to mind (e.g. transferred credits, presence of a guest speaker).

## 8.1. Type

- a) Bachelor / Master / Postgraduate programs.
- b) Separate courses.
- c) Vocational education .
- d) Corporate education.
- e) Programs for secondary education (K-12 education).
- f) Focused on one research area (e.g. economics) / Wide range of specialties available.

## 8.2. Result

- a) Degree granted / No degree granted.
- b) Course certificate / Degree diploma.
- c) Final course/diploma work required.
- d) Online exams / At-site exams.

## 8.3. Additional

- a) Online education / Blended learning (mix of online media and face-to-face teaching).
- b) Courses available in one language / Bilingual courses / Multilingualism.
- c) Courses obligatory for campus-based students (as extra credits).
- d) Possibility to transfer credits (within programs and institutions, locally, nationally and internationally).
- e) Guest speakers invited.
- f) Availability of additional study materials.

## 9. Student's Administration

The presence of *an expanded student's profile* (section 9.1) simplifies the access to the enrolment data, but, first of all, it allows students to track their success in education and *compare their rating* with that of others. This system provides a rather high level of *motivation* as very few students may feel satisfied being in the bottom of the total rating list. Additional units of motivation are also created by the originality of evaluation (e.g. the popular element of gamification [9]). The possibility *to form personal schedule* (see section 9.2) is what actually attracts people to use virtual universities – one can not only stay at home to learn, but also gets a chance to choose when he/she wants have a certain lecture or pass an exam.

## 9.1. Students data

- a) Students profiles: personal data; progress data; progress data available for everyone; students' progress rating.

- b) Online students office / Offline students office.

## 9.2. Study process

- a) Possibility to form personal schedule.
- b) Progress evaluation: ECTS points, simple 1 – 5 grades; unique evaluation system (collecting some special points, gaining “popularity”/”likes” etc. – gamification element).

## 10. Progress and Impact

The elements of this section are mostly important for the VU itself. For instance, the faster it can be found via web-search, the more people will be interested and the *more potential students* can be attracted. The presence of sponsors and partners gives a VU a number of strong ties, which assist the *further promotion* of its services to its target audience.

- a) Advertisement (online and offline).
- b) Citation during web-search.
- c) Frequency of new course development.
- d) Sponsorship.
- e) Dictating tuition policy.
- f) Partnership.

**E-learning in Poland.** In the recent years Poland has taken big steps in the field of e-learning and many academic institutions are successfully developing their virtual platforms. Students and academic workers are realizing the importance of this form of education and online courses are extensively introduced as complementary or obligatory classes, and even as separate study programs with a degree [2]. The experience of e-learning is actively shared during conferences and seminars and contributions into the development of virtual education in Poland are made every day.

Due the above-mentioned reasons the authors have chosen Polish education platforms for the first approbation of the suggested classification of virtual universities.

For the analysis the authors have selected 13 educational platforms based in Poland. For the reason of confidentiality and in order not to break the author's rights we will not to disclose the names of these platforms. However, we refer to these platforms using acronyms, created from first letters of their official names. Table 1 presents the list of the platforms and shows whether they are created *on the basis of an academic in-*

stitution or exist as *sole institutions*.

As it can be seen, nearly 85% of the considered platforms exist as parts of “brick-and-mortar” academic institutions and thus are created either to provide access to additional study materials for full- or part-time students or to attract applicants for online study programs. Usually, such programs are supposed to give a degree of the university or origin in the end of the whole

course.

On the other hand, 25% of the listed platforms exist as sole units and do not depend on any academic institutions. Some of them may be supported by educational foundations or some institutions, but the administration of the platform and its educational programs lies on separate business unit.

Table 1

Polish E-Learning Platforms

Source: web-sites of e-learning platforms

No.	Acronym	Origin	No.	Acronym	Origin	No.	Acronym	Origin
1	PVU	Academic institution	5	CZN	Academic institution	9	UPE	Academic institution
2	WSE	Academic institution	6	CHP	Sole institution	10	WSF	Academic institution
3	PS	Academic institution	7	PEK	Academic institution	11	COE	Academic institution
4	EN	Academic institution	8	PPE	Academic institution	12	PKS	Academic institution
						13	OZE	Sole institution

**Application of the VU expanded classification: Polish example.** As it was stated above, the classification was developed in order to obtain the system approach that will take into consideration interests of different participants of the operation process of virtual universities. For a more thorough analysis of the activity of virtual universities in Poland the authors chose only one group of the participants – *students*, who belong to the internal environment of a VU and whose opinion is supposed to be the most valuable in the process of universities assessment and selection.

Table 2 presents the list of 20 *elements* of the classification structure, which were picked by the authors and which are suggested to be *the most critical factors* influencing students’ final decision. The table also reflects the results of the conducted analysis: percentage of virtual platforms possessing the corresponding qualities.

Additional characteristics for some elements include the option «N/a» – the authors mean that such information is *not available*. For some universities this means that it is not possible to receive such information without being registered as a student; the registration is not

available for everyone. For some platforms it may mean that such information is available only on special request (e.g. the possibility to transfer credits between programs or universities).

If looking at the list from the point of view of a student choosing a virtual educational platform, we can use the obtained data to receive a rather clear picture.

Most part of e-learning platforms are based on only one academic institution (84,62%); nearly half of them provide access only for their own students (46,15%), when most of them make their courses available for everyone regardless the place of study or work (53,85%). Only 38,46% of virtual universities offer full courses for Bachelor, Master or Postgraduate programs, but most of them attract students with separate courses from various scientific areas (84,62%). That explains the fact that only 15,38% of platforms grant a degree giving a corresponding diploma and 46,15% do not; they will also not ask to write a final diploma thesis for the course (46,15%). With the 46,15% of universities that do not require previous qualification for applying to their courses, one will easily find a suitable program, even if for some reasons he has not re-

ceived any diploma before.

Table 2

## Analysis of Polish Virtual Universities

Source: authors' calculation of data, obtained from e-learning platforms

No.	Element		Number of VUs	No.	Element		Number of VUs
1	Number of member-universities	1	84,62%	12	Course certificate / Degree diploma	Yes	15,38%
		> 2	15,38%			No	23,08%
2	Lectures available at any time	100,00%	N/a			61,54%	
3	Lectures for those who missed campus-based classes	Yes	7,69%	13	Final course/diploma work required	Yes	7,69%
		No	23,08%			No	46,15%
		N/a	69,23%			N/a	46,15%
4	Previous qualification required	Yes	23,08%	14	Online education		53,85%
		No	46,15%		Blended learning		30,77%
		N/a	30,77%		N/a		15,38%
5	Available for students of member-universities	46,15%		15	Possibility to transfer credits	Yes	14,80%
	Available for everyone	53,85%				No	32,45%
6	Free tuition	30,77%				16	Online students office
	Tuition fee required	15,38%		Offline students office			92,31%
	N/a	53,85%					
7	Scholarship available	Yes	15,40%	17	Possibility to form personal schedule	No	53,85%
		No	84,60%			N/a	46,15%
8	Students chat/forum	Yes	53,85%	18	Progress evaluation	ECTS	23,08%
		N/a	46,15%			1-5 grades	7,69%
9	Bachelor / Master / Post-graduate programs	Yes	38,46%			Unique system	15,38%
		No	46,15%	N/a	53,85%		
		N/a	15,38%				
10	Separate courses	Yes	84,62%	19	Citation during web-search	Low	30,77%
		No	15,38%			Middle	15,38%
11	Degree granted	15,38%				20	Frequency of new course development
	No degree granted	46,15%		Middle	7,69%		
	N/a	38,46%		High	7,69%		
						N/a	84,62%

Unfortunately, only 15,4% of virtual universities offer scholarship to the most successful students of for those with bad financial conditions. At the same time most of them do not charge tuition fee (30,77%).

All virtual platforms ensure 24/7 access to all study materials. That means a possibility to study early in the morning, during the lunch-break or at midnight – if one is a «night owl» (a "night owl" is someone who begins sleeping late and wakes up late), and there is no need to depend on the time of a lecture's broadcast. Nevertheless, it is still necessary to follow the rules of VUs when fulfilling the intermediate and final tasks and exams – all of them have strict deadlines and usual-

ly there is no way to create personal schedule of passing them (53,85% do not give such possibility and at 46,15% it is not stated exactly).

Students may also find it useful to have a chance to transform the obtained ECTS credits within their e-learning programs or even to their "brick-and-mortar" universities. However, only 14,8% of the platforms will definitely give such an option. Yet we have no information about almost 53% of them. At the same time, 23,08% of VUs use ECTS to assess students' results, while 23,08% use 1-5 grades or other system.

Even though 53,85% of the VUs offer a totally online education without any need to attend

university buildings, 92,31% have their offices «offline», so one may have to visit them for the issues of registration, payment (in case it is required) or some other problems that may arise.

Finally, almost 54% of the e-learning platforms are easy and quick to be found via any Internet browser. Yet only few of them (7,69%) develop new courses frequently and could interest their regular customers with brand new offers.

**Conclusion.** Virtual institutions have appeared from an attempt to use ICT to separate a student and his/her teacher in the process of the knowledge transfer. Despite the range of synonymous names given to the notion of virtual institution, the term «virtual university» has obtained the widest usage. The variety of definitions describing the phenomenon of a VU can be summarized and define a virtual university as a consortium of «bricks-and-mortar» institutions, united in the virtual space through the tools of World Wide Web and ICT, with the aim of shifting physical borders of a classroom and providing distant, time-independent learning process, available and suitable for everyone with a desire to study.

The main objective of this paper was presentation of the developed expanded classification of VUs, which forms the system approach to the VU assessment and unites points of view from totally different sides, representing the interests of various participants of the operation process of virtual educational platforms. The participants are suggested to be divided into those who belong to the external and internal environment of e-learning platforms.

The authors have selected 13 education platforms based in Poland for the first approbation of the suggested classification of virtual universities. For a more thorough analysis only one group of the participants was chosen – the students, whose opinion is supposed to be the most valuable in the process of universities assessment and selection.

Application of the authors' classification has allowed to reveal *major differences* in the activity of e-learning platforms, such as: financial terms they offer, educational programs and educational policy, terms of enrolment, evaluation system etc. Statistics received with the help of

this classification should *simplify the understanding* of the situation at the market of e-learning and the factors, which the classification includes, should assist students in the process of selection of a VU because they precisely formulate *the most critical characteristics* and consider virtual universities from all possible points of view.

Further application of the expanded classification will let receive a wider picture when VUs will be examined with a glance on all participants of the operation process of virtual educational platforms.

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АНАЛІЗ ДІЯЛЬНОСТІ ВІРТУАЛЬНИХ УНІВЕРСИТЕТІВ  
НА ПРИКЛАДІ ПЛАТФОРМ ДИСТАНЦІЙНОЇ ОСВІТИ В ПОЛЬЩІ

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Віртуальні університети розглядаються як новий етап в освіті, їх діяльність аналізується на прикладі дистанційної освіти в Польщі. Приведено найбільш значущі визначення поняття віртуальних університетів. З метою спрощення процесу оцінки та відбору віртуальних університетів представлено їх розширену класифікацію. Висновки по застосуванню класифікації зроблено на засадах даних о розбіжностях і подібностях польських віртуальних освітніх платформ.

**Ключові слова:** дистанційна освіта, віртуальна платформа, віртуальний університет, класифікація, оцінка.

АНАЛИЗ ДЕЯТЕЛЬНОСТИ ВИРТУАЛЬНЫХ УНИВЕРСИТЕТОВ  
НА ПРИМЕРЕ ПЛАТФОРМ ДИСТАНЦИОННОГО ОБУЧЕНИЯ В ПОЛЬШЕ

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Виртуальные университеты рассматриваются как новый этап в образовании, их деятельность анализируется на примере дистанционного обучения в Польше. Приведены наиболее значимые определения понятия виртуальных университетов. С целью упрощения процесса оценки и отбора виртуальных университетов представлена их расширенная классификация. Выводы по применению классификации сделаны на основе данных о различиях и сходствах польских виртуальных образовательных платформ.

**Ключевые слова:** дистанционное обучение, виртуальная платформа, виртуальный университет, классификация, оценка.

*Рекомендовано до друку д. е. н., проф. Бардасем А. В.*

*Надійшла до редакції 16.05.15.*