

CONTEXTUAL APPROACH AS THE BASIS FOR EFFECTIVE EXPERIENTIAL TRAINING OF UNIVERSITY STUDENTS IN RUSSIA

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Abstract

The need for the study was caused by the ongoing search by Russian teachers and educators for the most optimal forms and methods of training their students for life and professional activities. Today, in the age of high tech and innovative solutions, debates on how digital transformation can change and improve the quality of life of Russians by 2030 do not subside. If public administration, legal regulation, infrastructure, cybersecurity, technology deployment are issues of prerogative of the government and authorities entrusted to it, then the task of updating labor markets and improving the education system capable of training competent specialists for the needs of the emerging digital economy mainly depends on society itself, including teachers, educators, employers and potential employees. Accordingly, universities are involved; they alter their concepts of knowledge delivery, revise and upgrade their curriculum, expand opportunities for active competence-based education filled with new meanings and incentives in the context of social development.

The aim of this paper is to analyze and identify the best practices, strategies and models based on contextual approach applicable to Russian universities in terms of effective experiential teaching and learning. The term "context" serves as a semantic, meaning-forming category of this approach, while contextual teaching and learning (CTL) is considered as a holistic process of modeling and imitating (simulating) various diverse contexts of real life and professional activities for educational purposes. Emphasis is placed on training problem-solving and critical thinking skills that will ultimately enforce students to become active and motivated learners who can put theory into practice. Three context-based training models: semiotic, imitation and social were also in focus of our research.

The methodological framework of this work rests on a comparative analysis of the provisions of such theories as behaviorism, constructivism, connectivism, and some later developed competence and context-based approaches by Western and Russian scholars. A comprehensive study of technical, pedagogical and managerial issues of contextual, project-based and experiential modes of education has also been provided. Based on the empirical approach, testing, evaluation and control of usability, accessibility, availability and safety of some related techniques, tools and resources have been performed. An experimental study has been conducted with the aim of obtaining, comparing and using certain relevant data on attitudes, priorities and student learning outcomes in a traditional versus context-based university environment. The main result of the study is the design of a context-based teaching-learning model that enhances the quality of university education, helps teachers relate the subject matter content to real world situations and motivates students to make meaningful connections.

Keywords: university, students, context, competence, contextual, experiential, teaching, learning, training.

1 INTRODUCTION

The current search by Russian teachers and educators for the most optimal forms and methods of training their students for life and professional activities is being actualized by the upcoming reality full of high-tech challenges and innovative IT prospects [1]. Due to complexity and ambiguity of the processes, widespread debates on how digital transformation can change and improve the quality of life of Russians by 2030 do not subside. Disputes may also arise over the doubts about the rationality and realism of a number of large-scale tasks facing the country in the context of digitalization and technologization, and suggesting a short-term perspective for their implementation [1]. For better understanding a macroeconomic concept "net economic welfare" (NEW) is appropriate here since it indicates positive changes in social welfare under the influence of various contexts and factors that are not reflected in the GDP (gross domestic product) but that may directly contribute to economic

well-being including such aspects of our life as general business activity, voluntary work, assistance to neighbors, charity activities, availability of free time and leisure, as well as access to cognitive and educational opportunities among other things [2]. If public administration, legal regulation, infrastructure, cybersecurity, technology deployment are issues of prerogative of the government and authorities entrusted to it, then the task of updating labor markets and reforming the entire education system capable of training competent specialists for the needs of the emerging digital economy mainly depends on society itself, including teachers, educators, employers and potential employees [3]. Yet, a low level of motivation and readiness of the majority of Russian citizens to accept and adapt to life in a new "digital reality" has been revealed. According to 2019 statistics from the Internet World Stats (IWS), despite a relatively large number of active Internet users in Russia (76.1%), these figures are hardly comparable with such countries as Norway (98.4%), Germany (96.0%), South Korea (95.9%), Netherlands (95.6%), Japan (93.5%), Taiwan (92.8%), Canada (92.7%), USA (89.0%), and others [4].

It is obvious that in the era of dynamic development of the nation on its path to the digital economy, under the onslaught of informatization and automation, both the labor market and requirements for specialists will significantly change. It is also likely that new professions will arise, as well as the usual occupations of people will develop and modify. At the same time, modernization of the employment sector will not entail abandonment of such traditional professions as lawyers, teachers, doctors, engineers or accountants. Moreover, key requirements for their professional competencies within the subject area will remain virtually unchanged, but will be filled with new meanings and incentives, being produced and reproduced in the social and professional contexts enhanced by integration of ICT (Information & Communications Technologies) in all spheres of our life including education [1; 5]. The readiness of professionals (ICT-literacy, ICT-competency) to interact in a new "digital environment", as well as their openness to any other "digital initiatives" depends on many other factors too [1], since communication channels lose their value if people do not know why and how to use the technology [2].

For effective training at university attention should be paid, in our opinion, to the so-called contextual teaching and learning (CTL) method once proposed by the Russian professor A.A. Verbitsky in 1991 [6]. The term "context" serves as a semantic, meaning-forming category of this approach, which in its turn refers to a holistic process of modeling and imitating (simulating) various diverse contexts of real life situations and professional activities accumulated for educational purposes under the auspices of universities. Broadly speaking, CTL represents the use of events from students and teachers' life, their social and cultural background as an educational platform for important academic concepts, attributes and specialized professional knowledge acquisition sufficient for future happy life and career [7]. As students do not want to study in a vacuum, CTL seems to be a great option to meet their learning needs. Though mainly used within university premises, CTL is also becoming increasingly viewed as a reality-based, outside-of-the-classroom experience linked to a set of multiple learning contexts [6].

A specific social context serves, on the one hand, as a catalyst for students to utilize their disciplinary knowledge, and on the other hand, supports further formation of students' identity, personal values, and professional development [7; 8]. Used as a form of student oriented, experiential and hands-on training, CTL encourages a design of such university learning environments that allow successful transitions and meaningful relationships between abstract ideas and real-world applications. Partnered with a curriculum built on integration of academic, industry, business, and employability standards, such CTL-based learning environment provides multiple teaching modalities; incorporates different forms of teaching/ learning techniques and experiences; and offers an ongoing formative assessment of various useful skills and qualities [9]. Additionally, this approach engages students and motivates them to be active learners who can gradually absorb relevant educational content through discovery, reinforcement, modeling, critical thinking and problem solving, which will later enable them to persist and easily apply theory to practice [9]. Constant feedback allows better interaction between either all subjects of the educational process (student(s)-student(s), student(s)-teacher(s), student(s)-tutor(s), etc.), or between subjects and the content, or between subjects and the learning environment, etc. [8].

A wide range of interaction types arising during the training course allows students to work together and support each other as they use various tools and information resources in the guided pursuit of learning goals and problem-solving activities [10]. Besides, CTL provides such a learning experience that adds practical value to any theoretical message that students receive, and offers answers to the most important questions of education about what, when, where, how, and why to study at university.

2 METHODOLOGY

The methodological framework of this work rests on a comparative analysis of the major provisions of such educational theories as behaviorism (J.B. Watson, B.F. Skinner, E.L. Thorndike, I. Pavlov, A. Bandura, D.E. Kaplan, etc.) [8; 11], constructivism (L.S. Vygotsky, J. Piaget, J. Dewey, J.S. Bruner, E.V. von Glasersfeld, B. Bloom, K.M. Oliver, M. Tam, etc.) [12; 13], connectivism (G. Siemens, S. Downes, R. Kop) [14; 15; 16], and some later developed competency-based (N. Chomsky, C. Hull, R.W. White, S. Harter, P.R. Curtiss, P.W. Warren, A. Maslow, D.A. Kolb, etc.) [17; 18; 19] and context-based approaches (C. Hansman, D.E. Rose, A.A. Verbitsky, R. Tharp, R. Gallimore, etc.) [3; 6; 7; 8; 20; 21; 22] by Western and Russian scholars. A comprehensive study of technical, pedagogical and managerial issues of contextual [3; 6; 7; 8; 10; 20; 21; 22], project-based [1; 5; 23; 24; 25] and experiential [8; 9; 26] modes of teaching and learning has also been provided. The concepts of behaviorism contributed to a better acquisition of new and changing roles, behaviors, relationships and emotions of teachers and students in the specific conditions of traditional and context-based learning environment of university [11]. This knowledge also allowed us to analyze and compare a complex, multi-faceted teaching/ learning process in a framework of drill-oriented, stimulus-and-response methodologies as well as beyond them.

The constructivism theory suggests that students actively construct useful knowledge and meanings from their experiences, cultures and hypotheses of the environment. Learners continuously test these hypotheses through training, social and professional interaction and tend to integrate the outcomes into their subjective perception of objective reality based on a diverse set of different contexts [12]. In case the outside world does not meet their expectations, learners then assimilate, adapt, update and renew their knowledge, skills and experience in accordance with the current trends and needs [13]. Teachers function mainly as facilitators, mentors, consultants, or coaches who aid their students, and provide the means for reaching learning goals that require higher order thinking skills and qualities. New roles of teachers go along with the aim of connecting educator expertise to learner knowledge construction, which constitutes one of the postulates of another theory known as connectivism [14; 15]. "Connection" is a keyword here that implies interaction and links between different fields, ideas, concepts, people, etc. in a distributed manner across a network providing space for continual learning [16]. Competency-based (CBL), project-based (PBL) and experiential approaches also have much in common with a context-based learning approach. All of them rely on the notion that human knowledge and education are rooted in inquiry, which in its turn is rooted in human experience [16; 19; 24; 26].

Based on the empirical approach, we performed selection, testing, evaluation, and control of usability, accessibility, availability and safety of some CTL-related techniques, strategies, tools and resources applicable to Russian students. We conducted the experimental study with the aim of obtaining and comparing certain relevant data on attitudes, priorities and students' learning outcomes in a traditional versus context-based university environment. The main result of the study is the design of a context-based teaching-learning model that enhances the quality of university education, helps teachers relate the academic content to real world situations and motivates students to make meaningful connections.

3 RESULTS AND DISCUSSIONS

The aim of this study was to identify and analyze *inter alia* most useful features of the contextual (CTL) approach applicable for formation of the key, general and professional competencies, and experiential life skills of future lawyers while training at university. According to analysts, for a successful career, lawyers need to have a certain set of personal qualities that correspond to their important social role, as well as deep and strong theoretical knowledge, traditionally expected from high-level professionals [27; 28]. Personal qualities of lawyers usually include high citizenship, morality, intelligence, developed sense of responsibility for effective performance of their duties, integrity and independence in decision-making, commitment to their work, intransigence to crimes, fairness, professional ethics, sociability, etc. Knowledge of the current legislation of the Russian Federation, sectoral legal sciences, rights and duties of citizens should be supplemented today with modern legal and economic thinking, ability to understand global trends and public policy, willingness to communicate in a multicultural environment and offer new creative ideas, openness to joint activities in mobile teams and in cooperation with foreign partners, as well as ability to apply ICT knowledge and ICT competence that are important in social and professional contexts for their every day life and professional career [27].

Although contextual teaching and learning (CTL) method was initially derived from such theories as behaviorism and constructivism [11; 13], with time it developed into an independent approach marked by exceptional features, but still having strong connections with other educational concepts and ideas. Assimilation and adaptation of social and professional experiences are carried out in the CTL-based

learning environments that use multiple teaching modalities and incorporate different forms of learning activities. Generally speaking, CTL supports best strategies and practices for reaching learners and allows them to discover meaningful relationships between abstract ideas and real-world applications [7]. According to prof. A.A. Verbitsky, the following principles are embodied into CTL approach: active student engagement; disposition to critical thinking and problem solving; unity of training and education; sequential modeling and imitating of various diverse contexts of real life and professional activities for educational purposes. Particular attention is paid to a gradual, phased transition from the basic forms of activity to activities of higher rank [6]. The shift is made from academic-type educational activities to quasi-professional activities and then to research (scientific) and professional activities [8].

In this regard, contextual approach rests on three basic forms of student activity and a certain number of transitional forms (from one basic form to another). The basic forms include: academic-type activities (aka. educational activity itself), where the leading role belongs to academic lecture; quasi-professional activities (e.g., case studies, brainstorming, projects or simulations based on gamification and imitation); research (scientific) and professional activities (e.g., students' research work, clinic activity, practical training, internships, real world applications, graduate diploma design, etc.). All other activities serve as transitional forms from one basic model to another and include practical classes and seminars, laboratory workshops and webinars, special courses and electives, analysis and discussion of specific real life and vocational situations, debates and role-play, etc. [6; 9]. In their systemic quality, all these activities constitute a method and technology of contextual training (or teaching and learning, CTL), which comprises three context-based training models: semiotic (based on the study of signs and sign-using behavior), imitational (based on a quasi-professional modeling and simulations) and authentic social (based on adaptation and assimilation of the past and novel experiences, practices, etc.) [6].

It is essential that the content of any context-based training program shall be designed in accordance with the purposes and goals of educational, quasi-professional, research (scientific) and professional activities. This implies that educational content must comply with certain requirements accompanied by specific environmental conditions of university, namely: semiotic, aimed at organizing and delivering textual information both online and offline; psychological and pedagogical, reflecting diverse patterns and modes of knowledge/ information distribution/ acquisition; scientific, transferring fundamental foundations of academic subjects and enabling further scholarly research; professional, reproducing a model of identity of future specialists and allowing development of authentic tasks to assess their performance [7].

The provided analysis and study of most general CTL forms, features, principles, layouts, etc., which were in focus of our research, allowed us to identify and categorize several discrete types of ICT-mediated instructional sub-contexts relevant to the processes of digital transformation in Russia. Such "sub-contexts" are based on a particular function played within a complete instructional experience and can be classified as orienting (motivating and establishing the need for learning new skills-knowledge-attitudes (SKA)); instructional (engaging learners in activities associated with new ICT-related SKA), and transfer (enabling learners to apply or perform what they learned within the other contexts to succeed) [10].

Each of the "sub-contexts" creates a separate ICT-based learning environment depending on the role that technology plays in the educational process [29]. The orienting sub-context may operate within a computer assisted learning (CAL), web-based learning (WBL) or mobile learning (ML) environments [30]. "Microworlds" typically collaborate with the instructional context in which learners become "immersed" in a self-contained computer-based environment to learn new useful ICT-related SKA. Virtual communities are often used as the e-platforms for socializing, network interaction for transferring or using knowledge in new contexts or novel situations [29]. E-mail, electronic bulletin boards, shared whiteboards, text-based chats, blogs, computer-based video conferencing, crowdsourcing platforms, etc. are only few common ways of how people interact and share information with each other in a virtual community [30].

Since one of the fundamental principles, underlying CTL ideology is "active learner engagement" [6], we support the latest CORD's REACT strategy, which is based on five key characteristics of student engagement [31]. It is noteworthy that CORD is an acronym of the "Center for Occupational Research and Development", a leading American nonprofit organization dedicated to changes, innovations in higher education and aimed at preparing students for greater successes in their careers and real life. Based on a structured context-based curriculum and instruction, innovative educational methods, tools and programs, CORD designed its REACT strategies to help learners build new skills and knowledge [31]. Characteristics of learner engagement according to the REACT strategy include: Relating (refers to learning in the context of one's life experiences or pre-existing knowledge); Experiencing (refers to learning by doing, through exploration, discovery, invention, etc.); Applying (refers to learning by putting skills to use); Cooperating (refers to learning through sharing, responding, and interacting with others); and Transferring (refers to learning and using knowledge in a new context or novel situation) [20; 31].

The idea to design and develop a context-based model of teaching and learning on the grounds of one of the Russian universities (Kazan Federal University) arose under the influence of some CTL-related CORD publications and, in particular, its conceptual REACT strategy (Relating, Experiencing, Applying, Cooperating, Transferring) based on contextual teaching and learning approach [31; 32; 33]. We also proceeded from the fact that key components of any formal teaching-learning environment are students, teachers and the content of educational courses (or modules), even if the teaching and learning medium of university is in some way an ICT, distance or web-based [33]. The way teachers and students work together to absorb and assimilate the content directly affects the efficiency and effectiveness of the learning process [34]. Well-built and grounded relationships connecting each of the central elements of a teaching-learning process (students, teachers, and the content) give rise to such important notions as expertise, rapport and understanding. Expertise characterizes relationship between "teacher and content"; rapport occurs because of relationship between "teacher and student", and understanding in its broadest sense is the expected result of relationship between "students and content" [33].

The relationships that link these three components (students, teachers, and the content) in various combinations allow creating at least three levels or types of contexts in which teachers and students operate and the learning process takes place at university. These are teaching-learning context of the course (or module); the institutional context within which teachers and students work together; and the wider community context (local, national and international) [33; 35]. The daily teaching-learning (educational) context of the course (or module) [33] includes instructions, delivery of a course material and use of educational activities that teachers choose for specific purposes and taking into account the background, interests, goals and learning styles of students [36]. The institutional context (with its sub-contexts, e.g., department, faculty, etc.) includes the strategic direction, policies, conditions, rewards, ethos and rules that govern the way teaching, learning and assessment takes place at university. The wider community context (local, national and international) confirms the idea that no institution exists in isolation from external factors and its outer community. Internationally, this means teachers and students engage with overseas scholars, professional associations, societies, and network through conferences, journals, the Internet and other media [33].

The key anticipated outcome of a teaching-learning process within the above-mentioned contexts is a student engagement and deep understanding of the content [37]. Experts propose that more can be taught and learned in less time and at higher levels of learning if we connect various disciplines and use integration as a curricular model [22]. On the one hand, presenting course content in an integrated manner promotes both depth and transfer of interdisciplinary knowledge and, on the other hand, helps students connect academic concepts to real-world applications [34]. Besides, integrated curriculum fosters critical thinking, collaboration and multiple skills valued by employers (e.g., academic skills, technical or industry-specific occupational skills, employability or soft, career-readiness skills, etc.) [17]. At the end of their training course, in accordance with the CORD's REACT strategy requirements, students are expected to be able: to relate (e.g., provide relevant examples of real world connections or take part in meaningful discussions); to experience (e.g., get involved in exploration, discovery, or invention); to apply (e.g., exercise some activity or describe procedure by using the learned skill or concept in a useful, authentic way); to cooperate (e.g., share, respond and interact with others or work in teams); to transfer (e.g., use knowledge / skills in a new context or novel unfamiliar situation) [31].

4 CONCLUSION AND RECOMMENDATIONS

Based on our research and data-driven analysis of the experimental part of the work, we recognize the growing topicality and popularity of the contextual approach (CTL) among educators, teachers and students in Russia. Most often, speaking about the context, we mean professional and social context. Professional context allows development of integrated knowledge, skills, and experiences sufficient to serve the needs of future profession, its goals and qualifications. Social context relates to the world outside of the classroom and allows learners to discover meaningful relationships between abstract ideas and real-world applications. CTL also encourages design of learning environments that use multiple teaching/ learning modalities and incorporate different forms of teaching/ learning experiences.

Personal teaching experience allows us to support further development and use of the context-based forms and methods of teaching and learning at university level in Russia. It is also necessary to proceed with exploration and study of most essential domestic and foreign practices concerning design, and implementation of the context-based strategies, activities, tools and applications. There is an urgent need to improve technical, pedagogical and managerial support of the university learning environment, so as to enlarge the range of the context-based teaching and learning opportunities, engage learners and motivate them to persist and successfully develop their identity for real life and professional career.

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