

EDU WORLD 2022**Edu World International Conference Education Facing Contemporary World Issues****REFLECTIVE APPROACHES TO THE DIGITIZATION OF
TEACHING, LEARNING AND ASSESSMENT**

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Abstract

The educational system has faced and still faces external challenges such as COVID 19 pandemics which can be considered a continual challenge due to its re-emergence in different medical variants. The digitalization of the educational system opened opportunities to follow up education which enabled school to ensure the necessary value of systems coexistence. The efficiency of the instruction process depends on the construction of the educational intervention centered on pupils' real needs based on stringent conceptual analyses adapted to current theories of education; these are wholly assimilated to the digitalization phenomenon or to technological insertion within schools. The teacher's role needs to be redefined by the operationalization of teaching, learning and assessment in the online or hybrid educational context; these have been a reality of the pandemic years and tend to become a legalised framework in many educational systems. For that purpose, we propose a possible operationalization model of didactic processes adapted to online/hybrid educational process, based on the analysis of teachers' reflections about the three didactic processes, as they had been defined during the development of online/hybrid didactic activities.

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1. Introduction

Far from being considered a beneficial phenomenon, COVID-19 pandemics sounded the alarm for decision makers in the educational field to analyse the necessity of admitting the importance of efficient technologization of educational system and processes. Although pandemic challenge revealed shortcomings as concerns the use of technologies in education, it also underlined the need of intervention as regards: the importance of digital education in the teaching-learning-assessment process, the necessity of a strategy to develop digital competences for all educational actors, the importance given to security in online environment, to real-life risks in digital environment.

Technology as an educational environment or resource represents the set of digital, technological tools (platforms, applications, digitalized products) purchased to an educational purpose to be used in school and classroom, by pupils in their formal and non-formal activities. Teachers' engagement in integrating the technology in the didactic process is essential and the development level of pedagogic integration and their psychopedagogic adaption are very important.

The rise of educational potential of new information and communication technologies determined their conversion in new methodologies which can be used in formal learning. The outstanding progress in the technologies field determines "the need to use new technologies, (...) to think and act efficiently, according to the new paradigm" (Ciolan, 2008, p. 60).

2. Problem Statement

Tehnologization of educational processes manifested many decades before pandemics, being always analysed as a dimension of social and informational development of the educational system, through which school adapts to the needs and demands of social progress (Nicola, 2003). These exigence's highlighted the necessity for technological readjustment for school and training finalities.

Performance standards of pupils' training are redefined, so that, from the point of view of digital competences, the training profile of the pre-university graduate is shaped on the following dimensions (Palade et al., 2020): creative problem-solving – organizing the digital content, the use of devices, applications and networks; showing interest for developing digital contents and use of new technologies, as a reaction to specific learning needs; the critical use of digital technologies – conformation to ethical and legal principles.

National research defines the information model of education through three roles in the educational process: environment of developing educational act or educational resource, modality of facilitating education management, modality of content delivery (Ceobanu et al., 2020). The practice of computer-assisted learning enables all pupils to develop their competences in an optimal manner (Ionescu & Chiş, 1992).

2.1. Digital teaching /E-teaching

Digital competences framework describe teachers' ability to integrate digital technologies in teaching, to use digital tools and instruments for educational purposes and to create a digital learning

environment. The statement that “teachers must slow the pace and recompose learning and teaching goals” (Ulrich, 2016, p. 206) could be analyzed as a motto of what means the optimal exercise of didactic practices in the context of educational system technologization.

The teacher's task is to analyze teaching resources and develop their potential in teaching (Lemov, 2021). Teachers will prepare students to use technology in learning and contribute to the development of a technological educational environment that ensures achievement (Țicău Sîrghea, 2018).

European educational policies underline the way in which the organization of traditional learning and teaching can be adapted so that it supports teachers in innovating didactic practices. These policies advocate online socialization, as it benefits from the information potential of media resources and from rapid evolution of technology and its insertion in all systems.

E-teaching is governed by fundamental principles which support education in digital environment: the focus on the effort of learning, searching and discovery of knowledge by the pupil, the teacher's predominant role being to support and guide learning experiences; the emphasis on pupil's interactivity with the content, especially in asynchronous communication; ensuring teacher's social, cognitive and teaching interaction with pupils through collaborative different means and applications (Comisia Europeană/EACEA/Eurydice, 2019).

The premises of teaching in online environment can be expressed from multidimensional perspectives: planning activities from digital environment (planning and organization of activities, consideration of psychopedagogical principles), collaborative activity teacher – group of pupils (online educational strategies, forms of organizing learning adapted to online environment, means and materials adapted to synchronous and asynchronous communication), teacher's competences (use of digital applications to present contents, of graphic design, of online curricula configuration, of guide elaboration for the use of digital contents).

2.2. Digital learning /E-learning

The foundation of learning in digital environment has as prerequisite the development of communication models in a technological educational space. This uses specialized software by means of which of-line or on-line activities are developed (Ceobanu, 2016). It is “learning by means of electronic devices”, which refers to web and technological applications in learning in order to improve the process of acquiring new information or to update it (Benraouane, 2011, p. 4). The integration of technology in the educational process is effective when it supports the act of teaching and the effort in learning of students, because it is a tool for learning (Walker, 2018).

Studies carried out on the factors which ensure the efficiency of learning underline the effects of colours upon the functioning of human personality and upon human brain. Chromotherapy can be taken into consideration in the pupils' engagement in specific learning mechanisms (Neacșu, 2019).

In face-to-face learning environment but chiefly in the virtual one, the power of colours must not be underrated, taking into account the blend of colour, sound and dynamics offered by media combinations.

Other studies underline the reconsideration of instruction forms adequate to learning styles in e-learning: autonomous learning much practised during pandemic context, but mainly as a specific learning

form for middle and adult age, lays the emphasis on problematization methodology and asynchronous activities, which imply discussions, exploration, etc. Collaborative learning, facilitated by communication platforms, is achieved through methods based on interactive/digital games and through synchronous activities (virtual class, video-conferences). Visual learning and auditory learning are facilitated by audio-video means (podcasts, video tutorials, simulations, graphic organizers) (Ceobanu, 2016).

The impact of technology fosters the learning adaptive model, since information and materials can be adapted to the working rhythm of each pupil, ensuring as such a fundamental principle of instruction. The role of technology in school is to simplify the learning contents for pupils, as digital resources facilitate learning.

The learning efficiency is measured beside standards and training indices by underlining the four key aspects of the learning process, illustrated by the model of attachment-based teaching: learning is facilitated by the context of supported relations; learning is ensured within the context of a reduced stress level and emotional activation, learning is produced optimally when the focus is on emotions and thoughts, learning is efficient by the creative use of narratives (Cozolino, 2017).

2.3. Digital assessment / E-assessment

The development of cognitivist paradigm and its theoretical and practical implications on the educational level determined the semantic evolution of the assessment concept, which extends from the assesment of knowledge to the assesment of instruments, of the mechanisms of their acquisition to the assesment of the learning process.

For teachers who use digital instruments, the use of technology in the assessment process is "a natural choice" (Manolescu, 2016, p. 106) in which assessment activities employ reevaluated instruments constructed according to the competences involved in the assesment content. Digital assessment offers creative opportunities to measure the learning outcomes which highlights pupils' complex cognitive skills but also transdisciplinary ones.

E-assessment becomes another alternative of traditional assessment along with competence-centered interactive assessment, which reduces the anxiety of testing and allows a considerable insight of pupils (Manolescu, 2016).

3. Research Questions

The study proposes to identify the evolutionary character of didactic processes – teaching, learning, assessment – under the impact of digitalization, a phenomenon generated in the educational system by the development of COVID-19.

We appreciate that conceptual development represents a requisite for the elaboration of a teaching – learning – assessment operationalization model in an online /hybrid educational context.

With an eye to a reflective approach of teachers' pedagogic concepts and to curricular digital reform directions, we propose a possible operating model for the operationalization of teaching –learning – assessment practices which can be adapted to online/hybrid educational process. In elaborating the model we analysed as benchmarks the curricular variables (key competences), educational resources

specific to interactive open curricular approach) and space-time resources (virtual class, synchronous /asynchronous didactic time).

4. Purpose of the Study

The aim of the study is to present the directions in conceptual development of the three fundamental didactic processes and to find theoretical reflections and practical approaches as concerns teaching – learning – assessment in the context of the online /hybrid educational system development.

5. Research Methods

25 teachers participated to focus groups organized; they teach at the primary and middle school level, having different specializations and are involved in professional training programs. They showed availability to analyse the dynamics of the teaching – learning – assessment didactic concepts, expressing fears and opportunities related to the operationalization of didactic process in the context of complete digitalization (online educational process) or partial educational process (hybrid educational process).

6. Findings

Digital teaching or virtual class teaching or online teaching are some of the concepts used in the specialty literature but also in the teachers' community. Although the specialty literature discriminate strictly the concepts, teachers assimilate the three conceptual variants with the insertion of technology into the teaching process (insertion of multimedia materials, the use of application and communication platforms, integration of interactive applications elaborated for didactic use; in a few cases, concepts are assimilated with the development of the teaching act in the virtual class).

Teaching in virtual environment or teaching which uses technological applications /multimedia elements represents more a fear than an innovation for most teachers. In this approach, the teaching process is assimilated as a need in the educational system due to pandemic period and not as a need of didactic evolution in the educational process with a view to optimize the training process for pupils' competences.

Digital learning represents an approach of the concept by participant teachers from 2 perspectives: either learning completed by a pupils group in the virtual class as an interactive educational environment or learning completed by pupils using e-curricula (interactive courses, REDs, learning materials posted on online platforms or identified through searching resources).

This form of learning is, according to teachers' opinions, a potential danger for pupils' evolution, as concerns cognitive, socio-emotional, communication development etc. Negative effects of pupil's learning in online environment are also emphasized in regard to: deterioration of handwriting, delays in language development, decrease of social contacts as a requisite for a real collaborative learning; reduction in the learning rhythm and of low concentration especially with junior pupils, risk of physical issues due to overuse (eye strain, musculoskeletal issues).

Digital assessment from the point of view of the concept analysis distinguishes more as compared to the other two concepts; the burst of interactive assessment applications has been so considerable during

the latest years that the online assessment process needs to be reconceptualised. Taking into account objectivity in appreciation and rapid quantifying of results, it is useful to reflect upon the advantages of certain digital assessment indicators such as: assessed contents, the balance between formative and summative assessment, between knowledge assessment and competences assessment, the need to decide which is the most important indicators to be assessed during school years (time of solving tasks/possible option in most online assessment applications online *versus* the quality of task solving by the pupil in an accessible time on task).

In teachers' opinions, digital assessment proved to be attractive for pupils but the difficulties of the design and administration of digital assessment tests are varied: teacher's skills and availability in elaborating the assessment instruments, technical resources/devices for each pupil, pupils' skills in using devices, familiarity with assessment procedure, etc.) .

7. Conclusions

In the context of identifying teachers' conceptions about the dynamics of didactic processes during the pandemic and post pandemic period – processes evidently digitalized – we highlight a possible operating model of operationalization of teaching – learning – assessment practices adapted to online /hybrid educational process.

For the elaboration of model we propose the following variants:

- i. educational finalities: key competences (which express pupils' transferrable skills, the ability of self-regulated learning, the ability to adapt to different tasks);
- ii. e-curricula as a set of selected educational materials, essentialized and adapted to pupils' level and learning needs;
- iii. e-strategies as a set of didactic strategies adapted for teaching – learning in online environment with the conformation to the psychopedagogic principles of instruction;
- iv. methodologies and instruments of digital assessment adapted to finalities in online environment and security of the measured results (privacy, validity, fidelity);
- v. logistic resources: interactive applications elaborated for a didactic purpose and for an exclusive didactic use;
- vi. space and time resources (virtual class „roomed” in a secure virtual space);
- vii. time resources adapted to synchronous and asynchronous learning tasks.

Such alternative of didactic processes operationalization adapted to online /hybrid educational process is a modest approach of the informational model of instruction which emphasizes curricular variables teachers can structure and define in the development of the didactic act.

Far from treating online education as absolute, technologization of teaching, learning and assessment processes must be accepted and exploited. To this purpose we emphasize one of the ideas supported by the specialists in the educational field who appreciated that, outside this reality, the educational process will not have the same consistency, quality and naturalness (Botnariuc et al., 2020).

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