

A SYSTEMIC APPROACH TO ORGANISING PEDAGOGICAL PRACTICE IN A REMOTE FORMAT FOR HIGHER EDUCATION STUDENTS

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Abstract: This article provides a scientific-theoretical substantiation of a systemic approach to organising pedagogical practice in a remote format for higher education students. The relevance of the study is determined by the growing need to ensure the continuity and flexibility of practice-based training under conditions where a student's geographical location, employment, or other objective circumstances make regular physical presence at a partner institution difficult, while the traditional, fragmented arrangement of individual remote tools without an underlying system fails to guarantee the quality of the resulting professional competence. The aim of the research is to substantiate remote pedagogical practice as an integral pedagogical system rather than a set of isolated technical solutions, to define the interrelated subsystems of which it is composed, to describe the stages through which the corresponding professional competence is formed, and to identify the conditions ensuring the effective functioning of the system as a whole. The study employed the methods of theoretical analysis and systematisation of scientific literature, systems-pedagogical modelling, comparative-pedagogical analysis of remote-practice tools, and pedagogical observation. The analysis established that remote pedagogical practice, considered as a system, comprises five interrelated subsystems — target, content, technological-communicative, organisational-managerial, and diagnostic-reflective — bound together by feedback loops that ensure the system's self-regulation, and that the corresponding competence is formed through three successive stages: orientation-adaptive, practice-implementation, and reflective-evaluative. It is shown that a systemic approach allows the internal contradictions of remote practice — between the student's autonomy and the need for pedagogical guidance, and between the flexibility of the remote format and the requirement of a unified quality standard — to be pedagogically resolved through the coordinated functioning of the identified subsystems rather than through the isolated improvement of individual technical tools. Practical recommendations are proposed for the phased introduction of the systemic model into the educational process of higher education institutions.

Keywords: systemic approach, distance education, pedagogical practice, higher education, remote practice, digital platform, professional competence, feedback, virtual mentoring, e-portfolio.

INTRODUCTION

Pedagogical practice occupies a central place in the professional training of higher education students, since it is precisely during practice that theoretical knowledge acquired in lecture halls is transformed into the ability to act competently in a real educational environment. For a considerable period, however, the organisation of such practice has rested on an implicit assumption: that the student's regular physical presence at a partner school or institution is a necessary condition for its effectiveness. This assumption is increasingly challenged by objective circumstances — the uneven geographical distribution of practice bases, the growing number of students who combine study with employment, and situations of force majeure such as the recent pandemic — which together create a persistent demand for pedagogically sound remote forms of practice organisation.

The strategic documents of the Republic of Uzbekistan aimed at the modernisation of higher education — in particular, the Decree of the President No. PF-60 of 11 May 2022 "On the Development Strategy of New Uzbekistan for 2022–2026" and the Concept for the Development of Higher Education until 2030 — set the tasks of digitalising the educational space and of ensuring the flexibility and continuity of practice-based professional training [1; 2]. Within this policy framework, the substantiation of remote pedagogical practice as a coherent pedagogical system, rather than as an ad hoc combination of individual digital tools, acquires both scientific and practical significance.

A considerable part of the existing literature on remote and online practice examines individual technical solutions — videoconferencing platforms, learning management systems, or e-portfolios — in isolation from one another, without considering how these elements interact as parts of a single functioning whole. Consequently, remote practice is frequently organised as a mechanical transfer of individual elements of traditional, on-site practice into a digital environment, which does not guarantee that the resulting professional competence will be equivalent in quality. The aim of the present article is therefore to substantiate a systemic approach to organising pedagogical practice in a remote format for higher education students, to describe the subsystems and stages through which the corresponding professional competence is formed, and to identify the conditions for the effective functioning of the system as a whole.

LITERATURE REVIEW AND METHODS

The theoretical foundation of the study draws on general systems theory and on several complementary strands of pedagogical thought. L. von Bertalanffy's general systems theory proceeds from the premise that a complex object should be studied not as a sum of isolated elements but as an integral whole whose properties emerge from the interaction of its interrelated parts and their exchange of information with the environment [4]. This principle is of particular value for the study of remote pedagogical practice, since it directs attention away from the isolated evaluation of individual digital tools towards the analysis of how target-setting, content, technology, organisation, and feedback function together as a single regulated whole.

M. Moore's theory of transactional distance holds that the decisive factor in a distance learning process is not physical separation as such but the degree of dialogue, structure, and learner autonomy that the process affords [5]. Applied to remote pedagogical practice, this theory indicates that the quality of the resulting professional competence depends primarily on the intensity and regularity of feedback between the student and the practice supervisor, rather than on the sophistication of the technology employed.

D.R. Garrison, T. Anderson and W. Archer's Community of Inquiry framework establishes that an effective online educational experience arises from the interplay of social, cognitive, and teaching presence [6]. Within remote pedagogical practice, teaching presence is realised through the supervisor's systematic guidance and feedback, cognitive presence through the student's independent solution of modelled professional tasks, and social presence through structured peer and mentor interaction, all of which must be deliberately designed rather than left to emerge spontaneously.

D. Kolb's theory of experiential learning, proceeding through the cycle of concrete experience, reflective observation, abstract conceptualisation, and active experimentation, provides the basis for understanding the stage-wise formation of professional competence in remote practice; in a remote setting, concrete experience is furnished through recorded or live-streamed lesson delivery, and reflective observation through structured analysis of an e-portfolio [7].

O.P. Toshpulatov's studies on personalised education and on the application of digital tools in the educational process emphasise that technology functions as a means of realising pedagogical goals rather than as an end in itself, and that its introduction into practice-based training must be subordinated to a clearly defined pedagogical system [3; 9]. This position is adopted in the present study as the guiding methodological principle for treating remote pedagogical practice systemically rather than as a collection of separate technical measures.

The following research methods were employed: theoretical analysis and systematisation of scientific literature; systems-pedagogical modelling, used to

substantiate the subsystem composition of remote pedagogical practice; comparative-pedagogical analysis of remote-practice tools and their didactic functions; and pedagogical observation, used to identify the typical difficulties encountered by students and practice supervisors in the remote organisation of practice.

RESULTS AND DISCUSSION

1. The pedagogical essence of a systemic approach to remote pedagogical practice.

A systemic approach to organising pedagogical practice in a remote format is understood in this study as the deliberate construction of remote practice as an integral, self-regulating pedagogical system, in which target-setting, content, technology, organisation, and feedback are not applied in isolation but interact as interdependent subsystems of a single whole. Unlike the mechanical transfer of individual on-site practice procedures into a digital environment, a systemic approach requires that any change introduced into one subsystem — for example, the adoption of a new communication tool — be evaluated in terms of its consequences for the system as a whole, including its effect on the student's autonomy, on the supervisor's capacity to provide timely feedback, and on the reliability of the resulting professional evaluation.

2. Subsystems of remote pedagogical practice. The analysis makes it possible to represent remote pedagogical practice as a unity of five interrelated subsystems.

The target subsystem defines the expected outcome of practice — a graduate who is capable of performing the full range of professional pedagogical functions and of doing so, when necessary, in a remote or blended format, without loss of professional quality.

The content subsystem comprises the professional tasks that a student must complete during remote practice: the design and delivery of lesson fragments, the preparation of digital instructional materials, the analysis of recorded classroom interactions, and the completion of a structured practice journal or e-portfolio.

The technological-communicative subsystem includes the digital infrastructure through which practice is carried out — videoconferencing platforms, learning management systems, e-portfolio environments, and recording and screen-sharing tools — which function as the operating environment of the system rather than as auxiliary technical support.

The organisational-managerial subsystem governs the coordination of the process: the scheduling of remote sessions, the distribution of responsibilities between the university-based and school-based supervisors, and the procedures for resolving technical or organisational disruptions, thereby ensuring that the system continues to function coherently despite the physical separation of its participants.

The diagnostic-reflective subsystem provides the feedback loop that binds the other subsystems together: it collects data on the student's remote performance — recorded

lessons, supervisor comments, self-assessment entries — and channels this data back into the target and content subsystems, allowing the system to be corrected and improved as practice proceeds.

3. Stages of competence formation. The professional competence associated with remote pedagogical practice is formed through three successive stages.

At the orientation-adaptive stage, the student, with the support of the practice supervisor, becomes acquainted with the digital tools and organisational procedures of the system, masters the technical operations required for participation, and adapts to the norms of professional conduct specific to a remote environment.

At the practice-implementation stage, the student independently performs the professional tasks defined by the content subsystem — delivering lesson fragments, preparing instructional materials, and interacting with pupils or peers online — under gradually decreasing guidance from the supervisor, thereby accumulating direct professional experience within the system.

At the reflective-evaluative stage, the student, together with the supervisor, analyses the data accumulated through the diagnostic-reflective subsystem, evaluates the effectiveness of the professional actions performed, and identifies the adjustments required for the successful transfer of the competences formed to conditions of direct, on-site professional activity.

4. Conditions for the effective functioning of the system. The effective functioning of remote pedagogical practice as a system depends on several conditions: the readiness of practice supervisors to act as designers and regulators of the system rather than as mere observers of remotely submitted materials; the availability of a stable technological-communicative infrastructure accessible to all students irrespective of their location; the establishment of clear organisational-managerial procedures defining responsibilities and timelines; and the systematic operation of the diagnostic-reflective feedback loop, without which the system loses its capacity for self-correction and degenerates into an unregulated exchange of files.

5. Problems and solutions. The first problem consists in the unequal access of students to a stable internet connection and appropriate technical equipment; the corresponding solution lies in the establishment of shared remote-practice access points at partner institutions and in the adoption of a blended format for students facing technical constraints. The second problem is the risk of professional isolation arising from the reduced frequency of live, unmediated pedagogical interaction; the solution consists in the mandatory inclusion of scheduled synchronous sessions with the supervisor within the organisational-managerial subsystem. The third problem is the insufficient preparedness of practice supervisors for the systemic management of remote practice,

as opposed to its purely technical administration; the solution lies in introducing specialised training on remote-practice management into the professional development of higher education staff. The fourth problem is the difficulty of ensuring an objective and reliable evaluation of professional competence on the basis of remotely submitted materials alone; the solution consists in combining remote evaluation with periodic on-site verification sessions, thereby preserving the reliability of the resulting professional assessment.

CONCLUSION

The results of the study show that the effective organisation of pedagogical practice in a remote format for higher education students requires a systemic approach rather than the incidental combination of individual digital tools. Considered as a system, remote pedagogical practice unites target, content, technological-communicative, organisational-managerial, and diagnostic-reflective subsystems, bound together by a continuous feedback loop, and the corresponding professional competence is formed gradually, through the orientation-adaptive, practice-implementation, and reflective-evaluative stages.

The analysis confirms that remote pedagogical practice acquires full pedagogical value only when its constituent subsystems function in coordination, with the practice supervisor assigned the role of designer and regulator of the system and the student the role of an active subject who performs genuine professional tasks and receives systematic feedback on their execution.

The training of practice supervisors in the systemic management of remote practice, the provision of stable and equitable technological-communicative infrastructure, and the combination of remote practice with periodic on-site verification are proposed as the principal directions for translating the described model into practice. The consistent implementation of these measures would allow higher education institutions to ensure the continuity and flexibility of practice-based professional training without compromising its quality.

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