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ШАҒЫН ЖИНАҚТЫ МЕКТЕПТЕГІ ОҚУШЫЛАРДЫҢ ЖЕКЕ БІЛІМ БЕРУ ТРАЕКТОРИЯСЫН ҚҰРУДАҒЫ ҚАЛЫПТАСҚАН ШАРТТАРДЫ БАҒАЛАУДЫҢ РӨЛІ

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РОЛЬ ОЦЕНКИ СФОРМИРОВАННЫХ УСЛОВИЙ В ПОСТРОЕНИИ ИНДИВИДУАЛЬНОЙ ОБРАЗОВАТЕЛЬНОЙ ТРАЕКТОРИИ УЧАЩИХСЯ МАЛОКОМПЛЕКТНОЙ ШКОЛЫ

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THE ROLE OF ASSESSING ESTABLISHED CONDITIONS IN DEVELOPING INDIVIDUAL LEARNING TRAJECTORIES FOR STUDENTS IN SMALL SCHOOLS

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Аңдатпа

Мақалада кадр тапшылығы мен біріктірілген сыныптар жағдайында әрекет ететін шағын жинақты мектептерде (ШЖМ) білім алушылардың жеке білім беру траекториясын модельдеу мәселесі қарастырылады. Зерттеудің мақсаты — ШЖМ-дегі оқу үдерісін саралау мен дербестендіру құралы ретіндегі қалыптастырушы бағалаудың әдістемелік әлеуетін негіздеу. Мақалада педагогикалық үдерісті бақылау, критериялды сипаттама, халықаралық және отандық тәжірибелерді компаративті талдау әдістері қолданылды.

Аннотация

В статье рассматривается проблема моделирования индивидуальной образовательной траектории учащихся в малокомплектных школах (МКШ), функционирующих в условиях дефицита кадров и совмещенных

классов. Цель исследования — обоснование методического потенциала формативного оценивания как инструмента дифференциации и персонализации учебного процесса в МКШ. В ходе работы использовались методы наблюдения за педагогическим процессом, критериальная характеристика, компаративный анализ международного и отечественного опыта.

Annotation

The article deals with the problem of modeling the individual educational trajectory of students in small-scale schools operating in conditions of teacher shortage and combined classes. The study aims to substantiate the methodological potential of formative assessment as a tool for differentiation and personalization of the educational process in small schools. In the course of the narrative, methods of observation of the pedagogical process, criteria characteristics, and comparative analysis of international and domestic practices were used.

Түйінді сөздер: шағын жинақты мектеп, қалыптастырушы бағалау, жеке білім беру траекториясы, біріктірілген сыныптар, халықаралық тәжірибе, білім беруді дербестендіру.

Ключевые слова: малокомплектная школа, формативное оценивание, индивидуальная образовательная траектория, совмещенные классы, международный опыт, опорные школы, персонализация образования.

Keywords: small school, formative assessment, individual educational trajectory, combined classes, international experience, magnet schools, personalization of education.

Introduction

As education systems undergo transformation, improving the quality of education in small rural schools has become a major priority of public policy. Persistent teacher shortages, the assignment of several out-of-field subjects to individual teachers, and the teaching of two or more grades in a single classroom have become defining features of small schools.

This situation calls for a shift away from the traditional model of whole-class instruction towards the development of an individual learning trajectory for every student. Formative assessment, an integral part of the learning process, is a key means of achieving this goal; it is not merely an external check conducted during a lesson. The object of this study is the teaching and learning process in small schools, while its focus is the mechanisms through which formative assessment supports the development of students' individual learning trajectories.

When teaching multigrade classes, teachers must divide their time and attention among several curricula. As reported in international TALIS studies, teachers in small schools spend twice as much time on routine and instructional preparation as their counterparts in standard schools.

Literature Review

The challenges facing small schools are not unique to domestic education. Extensive experience has been accumulated in Western European countries, particularly in Scotland and Finland, where rural schools are often geographically dispersed.

Within Scotland's Assessment for Learning (AfL) framework, formative assessment is understood as a collaborative partnership between student and teacher. In multigrade classrooms, students are taught from an early age to reflect on their work using visual and written feedback tools such as "traffic lights" and "two stars and a wish". These approaches enable students to make progress along their individual learning trajectories without continuous teacher intervention.

In Finland, formative assessment is practised without assigning marks and is supported by digital diaries, such as the Wilma platform. In small Finnish classes, a weekly development plan is drawn up for each student. The teacher acts primarily as a facilitator, and assessment is based on comparing a student's current performance with their own results from the previous month. This approach reduces competition in education and supports personal growth.

Kazakhstan's education system is also implementing significant reforms to strengthen the capacity of small schools. Domestic practice shows that methodologists at hub schools help teachers in small schools introduce a criteria-based system for planning formative assessment.

Methods and Materials

Criteria-based self-assessment (“autopilot” mode). While the teacher discusses a new topic with Group A in a multigrade class, Group B works independently using clearly defined descriptors prepared in advance. Transparent assessment criteria enable students to regulate their own work and progress along their individual learning trajectories without direct teacher guidance.

Horizontal differentiation. Based on formative assessment results, students are placed not in fixed ability groups but in flexible micro-groups according to the pace at which they complete tasks. Students who need support receive guiding questions and instructions, while those who perform at a high level are given more challenging, research-oriented tasks.

Prompt feedback through digital tools. In small schools, teachers have limited time to provide each student with detailed written feedback. Domestic practice therefore increasingly uses the analytical functions of Kundelik.kz, along with digital learning platforms such as Quizizz, Kahoot, and Diffit, to automate formative assessment. These tools provide rapid statistical analysis showing which learning objectives a student has not yet mastered.

In a rotational lesson-management model, formative assessment helps teachers manage the “pendulum of time” more effectively. For example, information collected from students’ self-assessment sheets can inform the differentiated stage of the next lesson. This process consists of sequenced activities that move from the lower levels of Bloom’s taxonomy (remembering and understanding) to the higher levels (analysing, synthesising, and creating).

At present, the following key formative assessment mechanisms are used to develop individual learning trajectories in Kazakhstan’s small schools:

- **A menu of differentiated tasks (graded assessment).** To address time constraints in multigrade classrooms, students are offered tasks of varying difficulty—Levels A, B, and C—according to their progress, together with clear assessment criteria. This allows each student to choose a trajectory suited to their abilities.
- **Scaffolded feedback.** During independent work without the teacher’s direct involvement, students receive descriptors and instructional cards that guide them through the task.
- **Peer assessment and reflection.** Students of different ages (for example, Grades 5 and 6) or at different levels who share a classroom assess one another using a pre-prepared checklist.

Consider a Science lesson in a Kazakhstani small school where Grades 5 and 6 are taught together.

While the teacher spends 15 minutes introducing a new topic to Grade 6, Grade 5 students work independently with their Individual Learning Trajectory Map. Their formative assessment task and its procedure are structured as follows.

Task: Analyse a diagram showing the water cycle in nature.

Individual learning trajectory mechanism (criteria-based checklist): Each student has a specially prepared assessment sheet with clear steps:

“I can identify and label the process of evaporation in the diagram.”

“I can explain the process of condensation in my own words.”

Practical application: After completing the first step, the student places a green card on the edge of the desk. This indicates that the task has been completed successfully and that the student is ready to move to the next level—a form of self-assessment. If the student struggles with the second step, such as writing down the rule, they place a yellow card on the desk. Once the teacher has finished working with Grade 6, they can scan the classroom and immediately see who has stalled at which stage of their learning trajectory. The teacher can then provide targeted support to the students who have placed yellow cards.

Results and Discussion

To identify how effectively teachers in small schools use feedback and assessment models and to provide them with methodological support, three schools in the Auliekol District of Kostanay

Region were selected as pilot sites: Moskaliv General Education School, Chernyshev General Education School, and Lavrentyev Basic School.

A comprehensive survey involving 33 teachers and middle managers was conducted to assess the actual conditions in small schools, their staffing capacity, and the methodological challenges they face. The results revealed the following recurring issues and trends:

- Staffing levels. Only 30.3% of respondents reported that their schools were fully staffed. A further 69.7% said that their schools faced some degree of teacher shortage; 54.5% reported one or two vacancies, covered through additional workloads assigned to existing staff. The most acute shortage was among teachers of natural sciences, including chemistry and biology (81.8%). This finding indicates that a lack of STEM specialists is a major obstacle for small schools.
- Models for distributing teaching loads. To fill vacancies, schools rely on external part-time arrangements, such as engaging teachers from neighbouring schools (54.5%), and on multiskilling, whereby one teacher teaches several different subjects (27.3%).
- Teaching combined-age classes. A total of 63.6% of respondents said they regularly used this approach across many subjects. For small schools, it is not an occasional choice but a routine pedagogical necessity.
- Feedback and assessment models. Amid teacher shortages and multigrade teaching, 57.6% of teachers regarded formative assessment—ongoing feedback during lessons—as the most effective model. In addition, 42.4% of respondents said they had begun actively using student self-assessment and peer assessment.
- Barriers to digitalisation and distance learning. The main obstacle to introducing hybrid learning and digital platforms was poor internet connectivity or a lack of necessary equipment (57.6%).

The study and survey findings show that teacher shortages and multigrade classes in small schools make a fundamental shift towards personalised learning necessary. In this context, formative assessment is not simply a monitoring tool; it is a key mechanism for guiding each student's individual learning trajectory and strengthening their intrinsic motivation. The following measures were identified as ways to address the issues uncovered:

- Develop methodological guidance for teachers in small schools on automating formative assessment in multigrade classrooms.
- Expand the use of local offline platforms in the rural pilot schools (Moskaliv and Chernyshev) to reduce the digital divide.

The proposed framework enables teachers to monitor each student's progress in a multigrade classroom without losing time, while allowing students to move independently at their own pace along their learning trajectories.

Conclusion

In conclusion, effectively developing individual learning trajectories for students in small schools remains a significant and multifaceted challenge for contemporary educational research and rural school practice. The empirical analysis and regional study conducted at the Moskaliv and Chernyshev schools in Auliekol District demonstrate that teacher shortages—particularly in the natural sciences—as well as teachers' need to teach multiple subjects and the specific demands of multigrade classrooms, require substantial differentiation of the learning process.

The study led to the following conclusions:

- The role of formative assessment. In small schools, formative assessment is more than a tool for checking knowledge. It is a central instructional mechanism that guides the independent development of students of different ages and helps them build self-assessment skills.
- Combining international practice with local resources. Integrating Scotland's Assessment for Learning framework with the effective practices of Kazakhstan's hub schools can improve the quality of instruction in small schools.
- Practical significance. The findings show that students' individual learning trajectories can

be modelled successfully even amid staffing shortages and digital constraints. The results may therefore serve as a basis for methodological support for teachers.

Future research in this area is expected to focus on developing digital offline platforms for small schools and introducing specialised professional development modules for teachers.

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