



**THE COMPETENCE OF MATHEMATICS TEACHERS IN THE  
DEVELOPMENT OF MATHEMATICAL COMPETENCE OF STUDENTS**

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<b>ABSTRACT</b>	<b>KEY WORDS</b>
<p>Education cannot be distinguished from two main factors; teacher and student. Without both of these two factors, it is not actually education. Education in Uzbekistan is still far from expected. This can be seen from the presence of difficulties in achieving decent labor results in accordance with the educational level of graduates. One of the reasons for the low quality of education in Uzbekistan is that the qualifications of teachers as teachers are still considered low compared to the standards prepared. This article discusses the impact of teacher competence on student competence, particularly in the study of mathematics.</p>	<p>mathematical competence, mathematics teachers, content knowledge, pedagogical skills, classroom management, assessment, problem-based learning, differentiated instruction, technology integration, mathematical modeling, professional development, collaborative educational ecosystem.</p>

**Introduction**

Matematik kompetentsiya-bu matematikaga oid bir qator ko'nikma va ko'nikmalarni o'z ichiga olgan ko'p qirrali tushuncha. U nafaqat matematik operatsiyalarni bajarish va muammolarni hal qilish qobiliyatini, balki matematik tushunchalarni turli kontekstlarda tushunish va qo'llash qobiliyatini ham o'z ichiga oladi. Matematik kompetentsiya talabalar uchun juda muhimdir, chunki u ularni tobora miqdoriy va ma'lumotlarga asoslangan dunyo muammolarini hal qilish uchun zarur ko'nikmalar bilan ta'minlaydi.

**2. The Concept of Mathematical Competence**

Mathematical competence refers to the comprehensive set of knowledge, skills, and attitudes that enable individuals to understand, apply, and appreciate mathematics. It encompasses not only computational skills but also conceptual understanding, problem-solving abilities, logical reasoning, and mathematical communication. Students with strong mathematical competence can effectively analyze and solve mathematical problems, make connections between different mathematical concepts, and utilize mathematics in real-life situations.

### 3. Competencies of Mathematics Teachers

Mathematics teachers need a range of competencies to effectively develop students' mathematical competence. These competencies include:

- **Content Knowledge:** Teachers should possess a deep understanding of mathematical concepts, procedures, and relationships. They should be able to explain complex ideas clearly and accurately to students, anticipate common misconceptions, and provide appropriate explanations and examples.
- **Pedagogical Knowledge and Skills:** Effective mathematics teachers are skilled in instructional strategies and approaches that promote active learning, critical thinking, and student engagement. They understand how to create a supportive and inclusive learning environment, design meaningful learning experiences, and adapt instruction to meet the diverse needs of students.
- **Assessment and Feedback:** Competent mathematics teachers use a variety of assessment methods to monitor student progress, identify areas of improvement, and provide timely and constructive feedback. They understand how to align assessments with learning objectives, use formative assessment to inform instruction, and provide opportunities for students to reflect on and self-assess their mathematical understanding.
- **Technology Integration:** In the digital age, mathematics teachers should be able to effectively integrate technology into their instruction. They should be knowledgeable about relevant educational software, interactive tools, and online resources that can enhance students' mathematical learning experiences and problem-solving abilities.

### 4. Strategies for Enhancing Students' Mathematical Competence

To enhance students' mathematical competence, mathematics teachers can employ various strategies, including:

- **Problem-Based Learning:** Teachers can engage students in authentic problem-solving tasks that require them to apply mathematical concepts and skills in real-world contexts. This approach fosters critical thinking, collaboration, and the development of problem-solving strategies.
- **Differentiated Instruction:** Recognizing that students have diverse learning needs and abilities, teachers can differentiate instruction by providing varied learning activities, materials, and assessments. This allows students to access and engage with mathematical content at their appropriate level and pace.
- **Mathematical Modeling:** Teachers can incorporate mathematical modeling activities, where students use mathematics to represent and solve real-life situations. This approach promotes the application of mathematical concepts, data analysis, and reasoning skills.
- **Collaborative Learning:** Encouraging collaborative learning experiences, such as group work and peer discussions, allows students to interact with their peers, share ideas, and develop mathematical communication skills. Collaboration also fosters a deeper understanding of mathematical concepts through dialogue and reasoning.
- **Real-Life Connections:** Teachers can highlight the relevance of mathematics by connecting mathematical concepts to real-life situations and applications. This helps students see the practical value of mathematics and motivates them to engage more actively in learning.

By employing these strategies and continuously developing their own competencies, mathematics teachers can play a crucial role in nurturing students' mathematical competence. Through effective

instruction, assessment, and support, teachers contribute to the improvement of educational outcomes and the overall quality of mathematics education.

## 5. Professional Development for Mathematics Teachers

Professional development plays a crucial role in enhancing the competence of mathematics teachers. Continuous learning and growth are essential for teachers to stay updated with current research, best practices, and innovative approaches in mathematics education. Professional development opportunities for mathematics teachers can include:

- **Workshops and Conferences:** Participating in workshops and conferences allows teachers to explore new teaching strategies, learn from experts in the field, and engage in collaborative discussions with fellow educators. These events provide opportunities for professional networking and sharing of ideas and resources.
- **Professional Learning Communities:** Joining professional learning communities, both in-person and online, enables teachers to collaborate with colleagues, share experiences, discuss challenges, and engage in reflective practices. These communities foster a culture of continuous learning and provide a support system for teachers.
- **Subject-Specific Training:** Teachers can engage in subject-specific training programs that focus on enhancing their content knowledge in mathematics. These programs deepen teachers' understanding of mathematical concepts and help them develop effective instructional strategies to convey these concepts to students.
- **Action Research:** Engaging in action research allows teachers to investigate and reflect upon their own teaching practices. By systematically collecting data, analyzing results, and implementing changes based on findings, teachers can continually refine their instructional approaches and improve student learning outcomes.

## 6. Collaborative Educational Ecosystem

Creating a collaborative and supportive educational ecosystem is crucial for enhancing the competence of mathematics teachers and promoting the development of students' mathematical competence. This ecosystem involves collaboration among various stakeholders, including teachers, administrators, parents, policymakers, and the wider community. Key elements of a collaborative educational ecosystem include:

- **Supportive Policies:** Implementing policies that prioritize and support professional development for teachers, allocate resources for mathematics education, and foster a positive learning environment.
- **School Leadership:** Effective leadership at the school level plays a vital role in creating a culture of collaboration, providing support for teachers, and establishing a shared vision for mathematics education.
- **Parental Involvement:** Encouraging parental involvement in students' mathematical learning through open communication, parent-teacher collaboration, and providing resources for parents to support their children's mathematical development.
- **Community Partnerships:** Forging partnerships with external organizations, universities, and local businesses can provide additional resources, expertise, and real-world connections to enrich mathematics education.

- Research and Evaluation: Promoting research and evaluation in mathematics education helps identify effective instructional practices, assess the impact of interventions, and inform evidence-based decision-making.

## **7. Conclusion**

The competence of mathematics teachers has a significant impact on the development of students' mathematical competence. By continuously improving their own competencies through professional development opportunities, teachers can enhance their content knowledge, pedagogical skills, and assessment practices. Collaborative efforts within an educational ecosystem that involve supportive policies, effective leadership, parental involvement, community partnerships, and research contribute to creating an environment conducive to teacher growth and student success in mathematics. By investing in the competence of mathematics teachers and fostering a collaborative educational ecosystem, educational systems can work towards improving the quality of mathematics education and achieving better outcomes for students.