FULL TEXTS

BOOK

AL FARABI

14th International Scientific Research and Innovation Congress

April 25-26, 2025 / Beysehir, Konya, Türkiye

EDITORS
Assoc. Prof. Dr. Mustafa Göktuğ KAYA
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Beysehir Ali Akkanat Vocational School
SELCUK UNIVERSITY

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DIGITAL TRANSFORMATION IN THE FORMATION OF RESEARCH COMPETENCE

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Abstract. This article provides a deep analysis of the modern methodological foundations for developing research competence among graduate students specializing in history. The study uncovers the integrated competencies formed through source studies, critical thinking, understanding historical context, scientific analytical skills, and the use of digital technologies. The author proposes new integrative theoretical approaches based not only on existing scientific sources but also on national pedagogical studies, particularly educational models developed using a cluster approach. Research competence should now be developed through academic integration, interdisciplinary approaches, and innovative technologies. Alongside fostering a critical, systematic, and scientifically grounded view of historical heritage, this ensures not only academic preparedness but also a strong foundation for the scientific and practical growth of national historiography. For master's students, skills such as source criticism, theoretical analysis, and deriving conclusions from evidence are essential to developing as independent thinkers and competitive scholars on the international academic stage.

Modern historical research requires a multi-stage and systematic approach to research competence formation. This process involves not just acquiring theoretical knowledge but also gaining practical skills to work directly with sources, analyze them, make conclusions, and build research on a scientific basis. The foundation lies in deep source studies knowledge. Primary sources - historical documents, archival materials, official records, memoirs, and chronicles - are key to accurately portraying historical events. Working with them demands attentiveness, systematic analysis, critical perspective, and interpretation skills from students. At the same time, secondary sources - scholarly articles, monographs, historical analyses, and commentaries - help understand and form new theoretical approaches based on previous research.

Keywords: historical research, research competence, methodology, source studies, critical thinking.

In today's global education and science system, the development of research competencies among master's students deeply studying the field of history is not only a key factor in enhancing the quality of education but also in fostering scientific thinking and adaptability to new academic paradigms. At a time when scientific processes are increasingly based on effectiveness, evidence, and multi-dimensionality, source analysis, contextual understanding of historical data, critical thinking, and analysis of digital information are of primary importance for history students.

Research competence should now be developed through academic integration, interdisciplinary approaches, and innovative technologies. Alongside fostering a critical, systematic, and scientifically grounded view of historical heritage, this ensures not only academic preparedness but also a strong foundation for the scientific and practical growth of national historiography. For master's students, skills such as source criticism, theoretical analysis, and deriving conclusions from evidence are essential to developing as independent thinkers and competitive scholars on the international academic stage.

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Analyzing historical data in context - studying events not only in isolation but in relation to economic, political, cultural, and social factors—is essential. This approach develops the student's ability not just to collect information, but to understand interrelations and the role of events in historical processes. Comparing sources and determining their credibility is crucial in scientific conclusions. Factors such as chronology, source origin, author perspective, and verification of facts are taken into account.

N.M. Yakovleva (1977) divided research competence into general (critical thinking, source understanding, analysis) and specific (working with facts, applying theoretical approaches, implementing research methodology), identifying specific pathways for each stage. She emphasized that competence formation is not linear but a dynamic and integrative process requiring joint assimilation of theory and practice. M.A. Oleynikova (2002) advocated for the early inclusion of research training within the education system and highlighted the importance of methodological tools. Similarly, K.K. Platonov (2007) connected research activity with personal motivation, interest, and cognitive engagement, suggesting a model based on deep integration of knowledge. According to him, research competence is tied not only to academic science but also to intellectual development, innovative problem-solving, and creative thinking.

In historical research, critical thinking is not merely an academic skill but a core cognitive foundation for historians. It enables researchers to approach historical sources with skepticism, ask questions, analyze, and provide unbiased assessments. Critical thinking entails a deep understanding of the origin, contextual meaning, author's perspective, and internal and external factors influencing historical facts.

To develop this competence, students must treat historical sources not just as data sets but as complex intellectual constructs requiring independent interpretation and evaluation. Each source's creation context, period, author's social status, and intended audience directly influence its content. Thus, any historical document should be critically analyzed to identify potential biases, ideological influences, and subjective perspectives.

As T. Brown (2021) stated, understanding historical evidence correctly requires deep, comparative, and contextual analysis. Deep analysis uncovers the layers of meaning behind each expression, fact, or unfinished sentence. Comparative analysis involves cross-referencing different sources to identify similarities and differences and draw conclusions closer to the truth. Contextual analysis places the source within its historical, political, and social environment.

During this process, a master's student not only reads but analyzes the structure, language, perspectives, and mediation of the source. They distinguish the author's subjective views from objective reality, verify data through alternative sources, and most importantly, choose a fact-based, thoughtful approach to conclusions. This requires epistemological awareness, logical analysis, and data processing ability.

Thus, critical thinking in historical research is not about accepting facts but reassessing them within a scientific framework, considering alternative viewpoints, and forming new conclusions. This transforms students from passive knowledge receivers into independent researchers capable of shaping academic knowledge.

Simultaneously, effective and systematic use of digital technologies is considered an essential competence of modern historical researchers. The deep integration of information technology in research enables precision, reliability, and efficient time management. Electronic databases like JSTOR, Google Scholar, Springer, Elsevier, Cambridge Core, and EBSCO provide instant and full access to academic articles, dissertations, reports, and archives across fields. These platforms

enable comparative data analysis across regions and eras and foster connection with the global academic community.

Additionally, tools like Zotero, Mendeley, EndNote, and RefWorks support information management and source organization. They allow researchers to collect, categorize, tag, cite, and track bibliographic data efficiently.

Software such as NVivo, Atlas.ti, MAXQDA, and AntConc specialize in qualitative analysis, helping process large volumes of text by coding, conducting semantic and narrative analysis, creating visual maps of relationships and contexts, and identifying discussion trends and persistent themes. These capabilities allow deeper research, the creation of theoretical models, and proposals for new conceptual approaches in science.

L.F. Avdeeva (1984) emphasized that digital tools in education and science improve speed and accuracy, ensuring results are evidence-based and verifiable. She noted that digitalized research fosters scientific renewal, standardization of outcomes, and the development of individual working styles aligned with personal approaches.

The adoption of digital platforms and tools enables methodological modernization in historical research, giving researchers independence, flexibility, and participation in academic discussions. Therefore, digital technologies must be regarded as crucial interdisciplinary tools for history graduate students.

The effectiveness of scientific research largely depends on the scientific quality of its methodological foundations, their harmony, and their close connection with practice. Properly chosen and systematically applied research methodologies determine the quality of scientific inquiry and shape students' learning efficiency, intellectual maturity, and academic independence. T.E. Klimova (2001) noted the importance of scientific seminars, individual consultations, and hands-on research as key methodological tools. S.I. Brizgalova (2004) proposed a staged approach: strengthening theoretical knowledge in preliminary trainings and applying this knowledge through practical experience and analysis.

The development of research competence in modern historical research includes not only methodological rigor but also systematic, cluster-based integrative approaches. According to S. Toshtemirova (2025), teaching history within a cluster system connects theory with practice through components like reflective monitoring, information environment, and innovative activity - presenting an effective model for developing research competence.

The proposed "5K" model - Cognitive Activity, Critical Analysis, Contextual Approach, Skill Systemization, and Competency-Based Learning - serves as a methodological foundation for deepening research competence. It encourages analysis of not only facts but also their semantic context, historical dynamics, and connection to cultural thought.

Moreover, curriculum modifications, especially in the "Pedagogy" component, incorporating stages like "historical inquiry" through motivation, data collection, reasoning, and reflection, guide students toward independent scientific research.

Methodological approaches presented in S. Toshtemirova's research correspond with international evaluation systems (PISA, TIMSS, A-levels), supporting the identification and development of research competence. Key competencies include time budgeting, analytical thinking, information management, and reflective thinking.

Furthermore, using digital platforms in forming historical research competence—such as those included in the methodological support of courses like "Historiography" and "Digital History"—creates a working environment that strengthens research skills (S. Toshtemirova, 2025).

F. Ilmurodova's (2025) model proposes integrating historical research methods with modern pedagogical technologies. Her concept emphasizes that introducing digital infrastructure, interactive tools, and independent research projects helps master's students develop next-generation research competencies. This model presents a system not only for forming skills but also for harmonizing various approaches.

In summary, developing research competence in historical research today requires a complex, interdisciplinary, and integrative approach. Traditional historical analysis, thorough source studies, theoretical knowledge, innovative methods, modern digital technologies, and epistemological skills must be interlinked. This enhances education outcomes and fosters creativity, independence, and philosophical approaches to research among students.

For graduate-level history students, these skills become the foundation for applying academic knowledge in independent research. They support future academic activities—writing dissertations, participating in international conferences, publishing research articles, and implementing independent projects. Skills like articulating scientific thought, forming well-grounded conclusions, and critically engaging with facts and sources define the quality of learning history today. Therefore, the formation of research competencies among graduate students must go beyond theoretical-methodological preparation and include the use of digital and information technologies. This ensures the training of competitive, independent-thinking, and open-minded scholars.

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