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АСПЕКТЫ СОВРЕМЕННОГО ФИЛОЛОГИЧЕСКОГО
ОБРАЗОВАНИЯ: ДИАЛОГ ЯЗЫКОВ И КУЛЬТУР**

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THE ROLE OF DATA ANALYSIS TOOLS IN DEVELOPING RESEARCH COMPETENCE OF FUTURE EDUCATORS

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The preparation of future teachers transcends knowledge of pedagogy and classroom management. In a period of data-driven decision-making, the ability to conduct, evaluate, and use research results has become increasingly fundamental to teacher development (Mertler, 2019). Research competency demands not just a theoretical knowledge of research paradigms and methods but also a practical capacity to carefully and critically review data. Data analysis tools enable pre-service instructors, between theory and practice, turn raw data into insightful knowledge.

Included into teacher preparation, data analysis tools enhance students' methodological understanding, analytical thinking, and reflective practices (Creswell & Creswell, 2018). This paper discusses the relevance of these tools in developing research competency as well as some specific types commonly used in educational research.

Research competency is the set of cognitive and procedural skills required for rigorous study. This involves the capacity of future teachers to develop research questions, adopt appropriate methodologies, gather and assess data, and draw conclusions relevant to the settings of instruction and learning (Zhou & Brown, 2015). Encouragement of lifetime learning and continuous professional development results from letting teachers fit to changes in the classroom and support pedagogical innovation.

Sometimes coursework, capstone projects, and action research in teacher preparation programs help to build research competency. Without a solid grounding in data analysis, however, these interactions may be flimsy and untenable. Therefore, data analysis tools help significantly in operationalizing research capability.

By means of data analysis tools, pre-service teachers could handle difficult data sets, spot trends, and generate evidence-based judgments. These tools help to fulfill several educational objectives by increasing accuracy and dependability, confidence and autonomy, critical thinking and transdisciplinary learning assistance.

There is enough data on the benefits of adding such technologies into courses meant for teacher development. Students who have possibilities to study real-world datasets using analytical approaches are more likely to value the relevance of research to instructional practice (Johnson & Christensen, 2020).

Usually in educational quantitative research, numerical data analysis requires statistical techniques. Excel and SPSS (Statistical Package for the Social Sciences) are among the tools that descriptive and inferential statistical analysis finds most application for.

Using strong statistical tools SPSS allows students to run tests including t-tests, ANOVA, chi-square, regression, and correlation. Its menu-driven design offers access for beginners as well as syntax for more advanced users. Using the program, analyzing survey data, usually collected in educational settings using Likert-scale instruments becomes really helpful (Field, 2018).

Excel is a reasonable replacement for basic statistical computations and data visualization even if it is less specialized. Its simplicity and link with Microsoft Office make it a suitable entry-level tool for pupils not used with more advanced tools. Often with an eye toward themes, patterns, and meanings, qualitative research gains from tools aiding coding, classification, and thematic analysis.

NVivo is among the tools used in qualitative research most regularly. It allows users import text, audio, video, and picture materials for in-depth research. Students might set themes, create codes, and look at links between ideas. Using this interactive and pictorial approach to data, students could engage intimately with qualitative materials (Bazeley & Jackson, 2013).

MAXQDA offers similar mixed-method capacity, well-known for allowing both qualitative and quantitative studies inside the same project. These resources enable students examining open-ended responses, interviews, or classroom observations more efficiently arrange and interpret data (Botirovna, 2024). In the field of mixed-methods research in education, quantitative and qualitative data are combined to offer more nuanced understanding. Dedoose and ATLAS.ti are among tools fulfilling this need.

Dedoose, for example, is meant especially for mixed-methods research. It allows researchers to simultaneously investigate and show qualitative and quantitative data, hence enabling integrated data triangulation. This function enables pre-service teachers engaged in classroom-based research to fully understand student behavior and instructional effectiveness (Tashakkori & Teddlie, 2010).

ATLAS.ti also supports mixed-method research by means of advanced coding and statistical modeling. Because of their versatility, advanced graduate research topics in education find great appeal.

Research competency has to be acquired by means of structured opportunities for students to engage with data analysis tools all during teacher preparation courses. The following strategies can assist you to do this: Classes on research techniques could call for Excel training sessions, SPSS, NVivo, these seminars should include real-world data along with detailed instructions. Projects requiring students to compile and analyze data using appropriate tools could help to support conceptual knowledge and practical application. Group projects encourage peer learning and offer a low-risk environment for testing new software. During the analysis phase, teachers should help students answer difficulties and direct them in selecting the appropriate tools for their study subjects. Including these tools into seminars helps to demystify the research process and encourage an inquisitive culture among upcoming teachers (Musoyeva, 2021).

Notwithstanding the benefits, many challenges keep data analysis tools from being totally included into teacher preparation. Among these include time constraints inside academic programs, ignorance of teachers, and limited access to software licenses. Dealing with these issues demands institutional support, professional development funding, and curriculum modification highlighting research literacy.

Training should also cover ethical questions about data use, including privacy, authorization, and responsible interpretation, therefore enabling students to develop not only technically but also in research integrity (Punch, 2014).

Future teachers increasing their research competency will help to advance instructional quality, support of innovation, and development of reflective practitioners. Data analysis tools become absolutely essential in this endeavor when giving students with the tools needed to rigorously examine instructional experiences. Whether mixed-method platforms like Dedoose, qualitative analyzers like NVivo, or quantitative tools like SPSS, these technologies increase the depth, accuracy, and relevance of educational research. Including these tools into teacher training courses will help institutions educate a new generation of data-literate, research-minded instructors.

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