Journal of Technical Education

Volume 13, 2025, Issue 1

BERND ZINN (University of Stuttgart)

Editorial: The Future of Technical Education: Current Research Focuses on Educational Evaluation, Digitalization, Interdisciplinarity, and the Shortage of Educators

Publishers

BERND ZINN

RALF TENBERG

DANIEL PITTICH

Journal of Technical Education (JOTED)

ISSN 2198-0306

Online at: http://www.journal-of-technical-education.de

BERND ZINN

1 Introduction

The field of educational research in Germany has a longstanding tradition and was systematized as an empirical scientific discipline at the beginning of the 20th century. Among the pioneers of empirical educational research were primarily empirical educators, such as Aloys Fischer, who experimentally engaged with teacher education and vocational education at that time. The development of educational research continued throughout the 20th century and received a fundamental boost in the 1960s with the "realistic turn" in pedagogy by Heinrich Roth (cf. Reinders et al., 2022). Today, educational research presents itself as an interdisciplinary and broadly diverse field of study that holds significant importance. It is a key interdisciplinary research area that aims to contribute to the further development and optimization of schools, teaching, and vocational training. In light of rapid technological advancements and the increasingly complex demands on the next-generation professionals, it is crucial to systematically examine teaching and learning processes in the technical disciplines and, based on evidence, further develop schools, teaching, and vocational training. Educational research seeks to improve the quality of teaching and learning processes in school, vocational, and extracurricular settings, promote the integration of new teaching and learning methods, technologies, content, and interdisciplinary approaches into various educational contexts, and has long contributed to the professional development of educators (cf. Tippelt & Schmidt-Hertha, 2018; Terhart, Bennewitz & Rothland, 2014).

As a subfield of educational research, didactic research in technology aims to ensure collaboration between schools, industry, and research, so that general and vocational technical education can be designed to be future-proof. In technical disciplines, where content quickly becomes outdated and new technologies are rapidly integrated, it is particularly important that educators in technical science domains are trained and continuously educated to be forward-thinking. Vocational pedagogical and didactic technology projects can make an important contribution by developing evidence-based approaches to profession-oriented teacher professional development and supporting the overarching professional, didactic, and pedagogical-psychological competencies of aspiring teachers in the context of current challenges (cf. Hallenberger & Ziegler 2025). Didactic research in technology provides a scientific basis to improve the quality of technical education, promote social inclusion, and adapt the relevance of educational offerings to the dynamic demands of the technological and professional world. Only through continuous outstanding research can it ultimately be ensured that the next generation of professionals possesses future-oriented competencies to meet the challenges of society in the 21st century.

Educational research offers a broad methodological repertoire, encompassing traditional qualitative and quantitative methods as well as mixed-methods approaches. In addition, digital and computational methods such as Learning Analytics, Network Analysis, Text Mining, and Machine Learning are increasingly being used in educational research. Didactic research in technology accompanies transformation processes to systematically guide developmental processes and make the impact of skill development visible. For application-oriented didactic research in technology that aims to generate practice-relevant insights, continuous feedback between academia and school or industry practice is essential — an approach exemplified by Educational Design Research (McKenney & Reeves, 2019; McKenney & Pareja Roblin, 2019).

Current key areas of didactic research in technology particularly include transformation processes related to digitalization and artificial intelligence in education (cf. KI-basierte Anwendungsfälle für die Lernortkooperation, Seufert, 2023), the integration of machine learning and data literacy into subject teaching (cf. für den allgemeinbildenden Technikunterricht, Brändle 2024) as well as sustainability and education for sustainable development (cf. Frye & Haertel 2024). In our postmodern society, global knowledge expands at an accelerating rate, doubling every ten years. Alt states: “Anyone who wants to cope with the flood of globally and digitally accessible knowledge must develop the skill of critical thinking and discernment.“ (Alt 2025, S. 9). In this context, the proclaimed 21st-century skills also include overarching areas of competence (Voogt & Roblin 2012; Foster & Piacentini 2023), whose implications for teaching and learning processes are currently a focus of subject didactics research (cf. zur Computational Thinking, Bahr 2024). Beyond these emerging topics, researchers continue to explore well-known issues such as the gender gap in STEM and technical disciplines (cf. Bahr 2025). Didactic research in technology investigates root causes to identify barriers, contributes to evidence-based academic and career guidance, and seeks to promote interest in STEM fields and support talented students through targeted interventions (cf. Bahr, Brändle & Zinn 2024). While some research areas in didactic technology are relatively new, others have a longer research tradition (e.g., learning site cooperation) and are now being examined with new technologies (e.g., AI), approaches, and methodologies (e.g., Seufert 2023).

It is evident that the research topics in didactics of technology are diverse and address a wide range of contributors, topics, and structures within education. The education system in Germany is highly complex and must constantly question itself regarding the lack of educational equity and forward-looking educational standards. The causes of the long-standing imbalanced gender representation, ethnic groups, and social classes across many professions and degree programs are multidimensional. In the context of the ongoing development of the education system in Germany, Maaz observes that the education system is currently being partially overhauled in an action-driven manner, and “measures are often reactive, based on alarming findings from educational research, and less proactive with a long-term goal, a vision for our education system in mind. Across all parts of our education system, there is a lack of coherence in its management.” “Education requires coherent management that works toward a shared goal and continually questions and evolves itself.” (Maaz 2025, pp. 12ff.).

This introduction does not claim to provide a systematic examination of the research areas in didactics of technology and current challenges. Rather, it aims to provide the reader with an overview of the diversity of current topics in didactic research on technology and the challenges within educational research. Starting from this introduction, the research works in the didactics of technology in this edition focus on: educational evaluation in general technical education (Chapter 2), digitalization in teacher education (Chapter 3), interdisciplinarity (Chapter 4), and the shortage of educators in technical subjects (Chapter 5).

2 Educational Evaluation

In an increasingly technology-driven world, the importance of technical education has expanded far beyond the traditional boundaries of vocational-technical education in engineering sciences and technical professions. Technological developments now permeate nearly every aspect of life, impacting not only specialized professionals but also the general public, who should be familiar with the fundamental principles of technical systems and digital technologies. This pervasive technologization presents a fundamental challenge for the education system, as society is becoming increasingly aware of the necessity for individuals at all levels to be equipped with future-oriented competencies in order to navigate and succeed in a rapidly evolving technological landscape. Technical general education goes far beyond acquiring specific skills for particular professions. It encompasses an understanding of the underlying mechanisms and principles of technology, the ability to analyze technological problems and develop solutions, as well as a critical awareness of the social, ethical, and economic implications of technological change (cf. Grunwald & Hillerbrand, 2021; Zinn, 2021). With advancing digitalization, automation, and the increasing interconnectivity of systems, it is essential that all members of society possess a certain level of technological knowledge, along with practical skills and competencies.

To continuously monitor and adapt the quality and relevance of technical education, educational monitoring in technical education plays a crucial role. Such monitoring enables a well-founded analysis of educational trends and helps identify existing gaps between educational standards, industry requirements, and training content. Through regular data collection and evaluation, targeted measures can be developed to align technical education with the evolving needs of the labor market and enhance competitiveness. Access to technological education and recurring educational evaluations not only create opportunities for professional and social integration but also drive innovation and sustainable growth. In this regard, technical general education and its evaluation must be seen as key factors for participation in an increasingly digitalized world and for shaping a sustainable future. The focus areas and target groups of evaluations in technical education are diverse, encompassing relevant knowledge, skills, competencies, and approaches.

The article in this edition titled „People differ in their ability to solve problems with home automation and appliances – but how can this be researched? A project report“ presents the TPL-basics project, funded by the German Research Foundation (DFG). In this research project, Jennifer Stemmann, Marcus Schrickel, and Carolin Hahnel use a computer-based testing instrument to examine individuals' competencies in solving technical problems with everyday devices (Stemmann, Schrickel & Hahnel 2025). The second empirical paper in this edition, authored by Andrea Maria Schmid, Markus Rehm, and Dorothee Brovelli, is titled „A multidimensional view on Pupils’ Attitudes towards technology based on the PATT-SQ instrument“. It examines the reliability and validity of the *Pupils’ Attitudes Towards Technology – Short Questionnaire (PATT-SQ)* in its German-language adaptation within a study involving 1,165 students. (Schmid, Rehm & Brovelli 2025).

3 Digitalization in Teacher Education

The new digital technologies and the changing landscape of vocational education and training in the context of digitalization in education require an adapted approach to the initial and continuing education of teachers. It is clear that teachers must be able to stay up to date with the latest technologies, integrate new pedagogical approaches, and adapt their teaching in the context of the transformation process toward digitalization in education, in response to the evolving possibilities and needs of learners (cf. Van Ackeren et al., 2019). In this edition under the title „Development of a teaching methodology project study – A practical report from the MINTplus² project at TU Darmstadt“ Tobias Hallenberger and Birgit Ziegler present the project study „Digitization in task and occupation“ at TU Darmstadt. The article discusses and analyzes the background, design, implementation, and results of a longitudinal study with students (N = 37) (Hallenberger & Ziegler, 2025). Currently, research on digitalization in education focuses on Educational Technologies, with particular emphasis on the development of design concepts and the implementation of technologies such as Virtual Reality (VR), Augmented Reality (AR), Artificial Intelligence (AI), etc., in education and training, as well as the analysis of their impact on the teaching and learning process. In this edition, Katharina Kunz, Marcus Brändle, Bernd Zinn, and Sunita Hirsch present an empirical study titled „Moments of Stress in the Virtual Classroom - How Do Future Vocational Teachers Experience Stress Through 360° Classroom Videos in Virtual Reality?“ that explores the stress perception of prospective vocational school teachers when using 360° classroom videos in Virtual Reality. The experimental setting tested five classroom videos, in which participants (N = 16) acted in the role of teachers, while their gaze and reactions were recorded through video as well as psychophysiological data (Kunz, Brändle, Zinn & Hirsch 2025). In another article in this edition, titled „Validity of virtual technical classrooms in terms of knowledge acquisition among students of the subject technique“ Bernd Borgenheimer and Jennifer Stemmann investigate virtual technical classrooms. They examine whether virtual technical classrooms in higher education can serve as a substitute for real classrooms by conducting a quasi-experiment that compares knowledge acquisition and motivation in both virtual and real technical classrooms among students. (Borgenheimer & Stemmann 2025).

4 Interdisciplinarity

Interdisciplinarity plays a crucial role in both research and teaching. Technical challenges and scientific inquiries often require solutions that transcend the boundaries of individual disciplines. The German Council of Science and Humanities defines interdisciplinarity as follows: “Constitutive for interdisciplinarity in research, in its view, is the interaction of multiple disciplines that collaboratively address a shared question or problem through an in-depth engagement with the insights, methods, and research perspectives of the respective fields, aiming for a synthesis of their results” (Wissenschaftsrat 2020, p. 15). Interdisciplinary approaches aim to provide researchers and learners with a more comprehensive perspective, enabling them to tackle complex problems and develop innovative solutions. They foster critical thinking, creative problem-solving skills, and the ability to collaborate across disciplinary boundaries—competencies that are central to 21st-century skills (see Chapter 1). The promotion of interdisciplinary thinking in the technical sciences, as well as in general and vocational technical education, is not a new development; rather, it has been a key aspect of technical didactics for approximately five decades (Ropohl 1976). Technological advancements and innovations rarely emerge in isolation; instead, they frequently result from intersections between different disciplines. Technical education must equip learners with the knowledge, skills, and attitudes necessary to embed technical issues within broader societal, economic, and ethical contexts. Only in this way can students and apprentices develop a multi-perspective understanding of the impact of technology and recognize the responsibilities associated with its application. The traditional boundaries between the natural sciences and the technical sciences are increasingly blurred within the educational canon. Interdisciplinary subjects that integrate scientific and technical competencies with social, ethical, and creative perspectives have become established within the differentiated education systems of various countries. An example of this is the specialized subject "Natural Sciences, Computer Science, and Technology" (NIT) for middle and upper secondary education at grammar schools in Baden-Wuerttemberg. In the context of interdisciplinarity, Tobias Bahr explores in his article to the present issue, titled „ Interdisciplinary Computer Science courses – between opportunities and challenges!“, an interdisciplinary subject that combines computer science, mathematics, and physics (IMP) in grammar schools in Baden-Wuerttemberg. Through an interview study (N = 21) with teachers, he examines the opportunities, challenges, and limitations of interdisciplinarity within the IMP subject (Bahr 2025a). His findings highlight the necessity of specialized interdisciplinary teacher education for the successful implementation of such subjects.

5 Shortage of Educators

The shortage of educators in vocational and technical subjects has long been a challenge for the vocational education system. Particularly in fields such as electrical engineering, computer science, mechanical engineering, and civil engineering, the demand for qualified educators is significantly higher than the supply. The causes of the educators' shortage in vocational and technical education are varied and have been widely discussed (cf. e.g., JOTED Special Issue Vol. 6 No. 2, 2018; Ziegler 2021). The result of this shortage is that many schools and vocational training institutions face difficulties in staffing their current classes with sufficiently qualified personnel. This not only affects the quality of technical education but also the preparation of the next generation for the demands of a technologized society. To counteract this shortage, long-term strategies are needed that both strengthen the training of educators in these fields and make the working conditions and prospects for teachers at vocational schools more attractive. In response to the teacher shortage, the Conference of Ministers of Education and Cultural Affairs (KMK) passed a package of reforms for teacher education last year, which deviates from previous principles in several areas. The background for this decision is the ongoing teacher shortage and the desire of the German federal states to create more flexible pathways to the teaching profession. The resolution now allows the states to qualify single-subject teachers, introduce dual teacher training programs, and offer master's programs for lateral entrants (KMK 2024). Furthermore, to meet the current demand for teachers in schools, many teacher apprentices are being employed as substitute teachers. In the present issue, the empirical study titled "Students as substitute teachers - An empirical survey on the status quo in the technology teaching study programme" is presented, where Martin Lang and Marcel Pelz investigate the scope and design of the substitute teacher roles among teacher apprentices in the general subject of technology (Lang & Pelz 2025).

6 Conclusion

The various research focuses in technology education demonstrate that digital competencies have become more prominent in both general and vocational education. The significance of digital competencies in education was officially proclaimed with the strategy „Bildung in der digitalen Welt" by the Conference of Ministers of Education and Cultural Affairs (KMK 2021). Following the recommendations of the Permanent Scientific Commission of the Conference of Ministers of Education and Cultural Affairs (SWK), computer science is to be introduced as an independent subject in both lower and upper secondary education. Furthermore, computer science is to be assigned to the STEM subject group in the context of state requirements for the Abitur examination, and the educational content is to align with the educational standards for computer science as defined by the Society for Computer Science (SWK 2022).

The introduction of computer science as a compulsory subject in the canon of general education subjects is clearly essential for a future-oriented technical education and can be justified in several ways. First, by the changes in the working environment, as digitalization is transforming every sector of professional life. Many technical professions and activities require basic knowledge in computer science, whether in software development, data analysis, or the use of automated systems. Those who are not knowledgeable in computer science run the risk of being left behind by developments. Second, the promotion of problem-solving skills is another justification, as computer science fosters logical thinking and the ability to solve problems. Working with algorithms, structuring tasks, and developing solutions are skills that are useful not only in computer science but also in many other personal, social, and professional technical fields. Third, the growing importance of data handling competencies comes into play. In many technical disciplines, the analysis and processing of data play a central role. Computer science provides the necessary tools and concepts for managing large amounts of data in engineering, medicine, and business, for example. Fourth, with a grounding in computer science, the understanding of modern technologies is made possible. From the Internet of Things to Artificial Intelligence to robotics, modern technologies that influence our lives and work are based on computer science. A basic understanding of these is important not only for technological professionals but also for everyone who interacts with these technologies in society. Fifth, the interdisciplinary application of computer science competencies forms a central justification. Computer science is no longer an isolated field that essentially emerged from electrical engineering and mathematics and is often associated with certain branches of engineering (Schubert & Schwill 2011). It influences many disciplines such as mechanical engineering, electrical engineering, biotechnology, natural sciences, and medicine, to name just a few examples. Those working in these fields must possess a certain level of computer science competencies. Sixth, computer science can promote creativity and innovation. It enables creative and structured problem-solving. The development of new software, apps, and technical systems often requires innovative thinking. Those working in technology or technical professions today must view computer science more than ever as a tool for fostering creativity and innovation. Knowledge and skills in computer science will therefore become a key competency for both general technical and vocational technical education in the future.

Bibliography

Alt, P. A. (2025). Die Welt in Versionen entwerfen. Bildung an Universitäten – gestern und heute. Forschung & Lehre, 32. Jahrgang, S. 8 – 11.

Bahr, T. (2024). Designing a Computational Thinking Intervention for Kindergarten Students. 17th International Conference on Informatics in Schools: Situation, Evolution and Perspectives, ISSEP 2024, Local Proceedings, Budapest, Hungary. http://dx.doi.org/10.18419/opus-15218

Bahr, T. (2025). Das interdisziplinäre Profilfach Informatik, Mathematik, Physik (IMP) – Eine explorative Forschungsstudie zur unterrichtsfachlichen Umsetzung, den Lehrenden und Lernenden des Profilfachs (Universität Stuttgart, Dissertation) http://elib.uni-stuttgart.de/handle/11682/15536

Bahr, T. (2025a). Interdisziplinärer Informatikunterricht – zwischen Chance und Herausforderung. Journal of Technical Education (JOTED), 13(1), 144–166.

Bahr, T., Brändle, M. & Zinn, B. (2024). STEM Career Choices for K–12 Students and the Influencing Factors - A Comparison of Students in Different Support Programs. Journal for STEM Educ Res. https://doi.org/10.1007/s41979-024-00129-w

Borgenheimer, B. & Stemmann, J. (2025). Validität virtueller Technikfachräume in Bezug auf den Wissenserwerb bei Studierenden des Faches Technik. Journal of Technical Education (JOTED), 13(1), 116–143.

Brändle, M. (2024). Lerngelegenheiten für den natur- und technikwissenschaftlichen Unterricht im Kontext von Data Literacy und maschinellem Lernen http://dx.doi.org/10.13140/RG.2.2.24826.91842

Foster, N. & M. Piacentini (eds.) (2023). Innovating Assessments to Measure and Support Complex Skills, OECD Publishing, Paris, https://doi.org/10.1787/e5f3e341-en

Frye, S. & Haertel, T. (2024). Technik und Nachhaltigkeit – Förderung nachhaltigkeitsorientierter Kompetenzen. Journal of Technical Education (JOTED), 12(2), 10–28. https://www.journal-of-technical-education.de/index.php/joted/article/view/282

Grunwald, A. & Hillerbrand, R. (Hrsg.) (2021). Handbuch Technikethik, 2., aktualisierte und erweiterte Auflage. Heidelberg, Berlin: J. B. Metzler Verlag.

Hallenberger, T. & Ziegler, B. (2025). Fachdidaktisches Projektstudium Digitalisierung in Arbeit und Beruf im Master of Education für berufliche Schulen an der TU Darmstadt – Evaluation eines Praxisprojekts. Journal of Technical Education (JOTED), 13(1), 55–81.

JOTED Sonderausgabe Bd. 6 Nr. 2 (2018). https://www.journal-of-technical-education.de/index.php/joted/issue/view/11

Kunz, K., Brändle, M., Zinn, B. & Hirsch, S. (2025). Moments of Stress in the Virtual Classroom - How Do Future Vocational Teachers Experience Stress Through 360° Classroom Videos in Virtual Reality? Journal of Technical Education (JOTED), 13(1), 82–115.

Lang, M. & Pelz, M. (2025). Studierende als Vertretungslehrkräfte – Eine empirische Erhebung zum Status Quo im Lehramt Technik. Journal of Technical Education (JOTED), 13(1), 167–181.

Maaz, K. (2025). Am Anschlag und unter großem Anpassungsdruck – Konzeptionelle Ansatzpunkte für eine Weiterentwicklung des Bildungssystems. Forschung & Lehre, 32. Jahrgang, S. 12 – 14.

McKenney, S. & Pareja Roblin, N. (2019). Connecting Research and Practice: Teacher Inquiry and Design-Based Research. In R. Latiner Raby & E. J. Valeau (Eds.), Handbook of Comparative Studies on Community Colleges and Global Counterparts. Cham: Springer. https://doi.org/10.1007/978-3-319-53803-7_30-2

McKenney, S. & Reeves, T. C. (2019). Conducting educational design research (Second edition). London, New York: Routledge.

Reinders, H., Bergs-Winkels, D., Prochnow, A. & Post, I. (2022). Empirische Bildungsforschung Eine elementare Einführung. Wiesbaden: Springer VS.

Ropohl, G. (1976). Technik als Bildungsaufgabe allgemeinbildender Schulen. In W. Traebert & R. Spiegel (Hrsg.), Technik als Schulfach. Band 1, Düsseldorf. S. 7-25.

Schmid, A. M., Rehm, M. & Brovelli, D. (2025). Ein multidimensionaler Blick auf Technikeinstellungen von Schüler:innen mit dem PATT-SQ-Messinstrument. Journal of Technical Education (JOTED), 13(1), 28-54.

Schubert, S. & Schwill, A. (2011). Didaktik der Informatik. 2. Auflage. Spektrum.

Sekretariat der Kultusministerkonferenz [KMK] (2021). Lehren und Lernen in der digitalen Welt Ergänzung zur Strategie der Kultusministerkonferenz „Bildung in der digitalen Welt“. (Beschluss der Kultusministerkonferenz vom 09.12.2021) https://www.kmk.org/fileadmin/veroeffentlichungen_beschluesse/2021/2021_12_09-Lehren-und-Lernen-Digi.pdf

Sekretariat der Kultusministerkonferenz [KMK] (2024). Maßnahmen zur Gewinnung zusätzlicher Lehrkräfte und zur strukturellen Ergänzung der Lehrkräftebildung. (Beschluss der Kultusministerkonferenz vom 14.03.2024) https://www.kmk.org/fileadmin/pdf/PresseUndAktuelles/2024/2024_03_14-Lehrkraeftebildung.pdf

Seufert, S. (2023). KI-basierte Anwendungsfälle für die Lernortkooperation Gestaltung eines digitalen Ökosystems in der Berufsbildung. Zeitschrift für Berufs- und Wirtschaftspädagogik, Band 119, Oktober 2023, Heft 2.

Stemmann, J., Schrickel, M. & Hahnel, C. (2025). Personen unterscheiden sich in ihren Kompetenzen, Probleme mit technischen Alltagsgeräten zu lösen - aber wie lässt es sich untersuchen? Ein Projektbericht. Journal of Technical Education (JOTED), 13(1), 9–27.

Ständige Wissenschaftliche Kommission der Kultusministerkonferenz [SWK] (2022). Digitalisierung im Bildungssystem: Handlungsempfehlungen von der Kita bis zur Hochschule. https://www.swk-bildung.org/content/uploads/2024/02/SWK-2022-Gutachten_Digitalisierung.pdf

Tippelt, R. & Schmidt-Hertha., B. (Hrsg.) (2018). Handbuch Bildungsforschung Wiesbaden: Springer Fachmedien.

Terhart, E., Bennewitz, H. & Rothland, M. (Hrsg.) (2014). Handbuch der Forschung zum Lehrerberuf. 2. überarbeitete und erweiterte Auflage. Münster: Waxmann Verlag

Van Ackeren, I., Aufenanger, S., Eickelmann, B., Friedrich, S., Kammerl, R., Knopf, J., Mayrberger, K., Scheika, H., Scheiter, K. & Schiefner-Rohs, M. (2019). Digitalisierung in der Lehrerbildung. Herausforderungen, Entwicklungsfelder und Förderung von Gesamtkonzepten. DDS – Die Deutsche Schule, 111(1), S. 103–119. https://doi.org/10.31244/dds.2019.01.10

Voogt, J. & Roblin, N. P. (2012). A comparative analysis of international frameworks for 21st century competences: Implications for national curriculum policies. Journal of Curriculum Studies, Volume 44, Issue 3.

Wissenschaftsrat (2020). Wissenschaft im Spannungsfeld von Disziplinarität und Interdisziplinarität Positionspapier, Köln 2020. https://www.wissenschaftsrat.de/download/2020/8694-20.pdf?__blob=publicationFile&v=3

Ziegler, B. (2021). Viele Wege führen nach Rom – Konstanten in der Vielfalt? Berufswahl von Lehrkräften im beruflichen Lehramt. In: Jan Pfetsch; Anne Stellmacher (Hrsg): Lerngelegenheiten und Berufswahlmotivation im beruflichen Lehramtsstudium. Münster: Waxmann. 97-114.

Zinn, B. (2021). Editorial: A Look at the Digitalisation of Education in the Context of Ethical, Legal, and Social Implications. Journal of Technical Education (JOTED), 9(2), 1-16.

PROF. DR. BERND ZINN
Universität Stuttgart, Institut für Erziehungswissenschaft, Abteilung Berufspädagogik mit Schwerpunkt Technikdidaktik
Azenbergstraße 12, 70174 Stuttgart
bernd.zinn@uni-stuttgart.de

Cite as:

Zinn, B. (2025). Editorial: The Future of Technical Education: Current Research Focuses on Educational Evaluation, Digitalization, Interdisciplinarity, and the Shortage of Educators. Journal of Technical Education (JOTED), 13(1), 1–8.