STIFTERVERBAND

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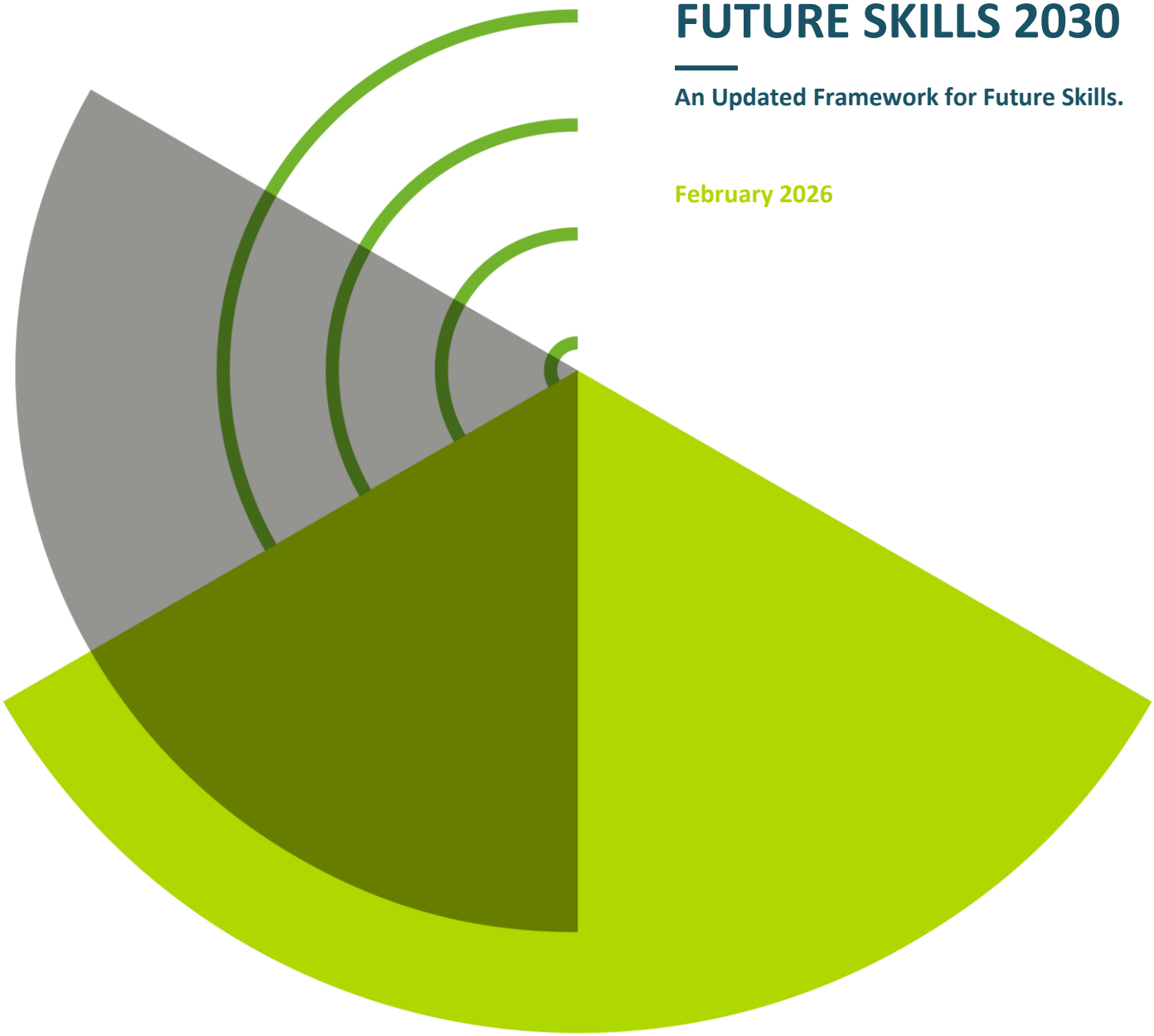
FUTURE SKILLS 2030

An Updated Framework for Future Skills.

February 2026



ZUKUNFTSMISSION
BILDUNG

CONTENTS

FUTURE MISSION EDUCATION

With its Future Mission Education ("Zukunfts-mission Bildung"), the Stifterverband aims to help shape an education system for a changing world – one that can quickly support more people with the skills they need for the future.

As part of this initiative, the Alliance for Future Skills seeks to ensure that Future Skills are firmly embedded across the educational provision of all higher education institutions.

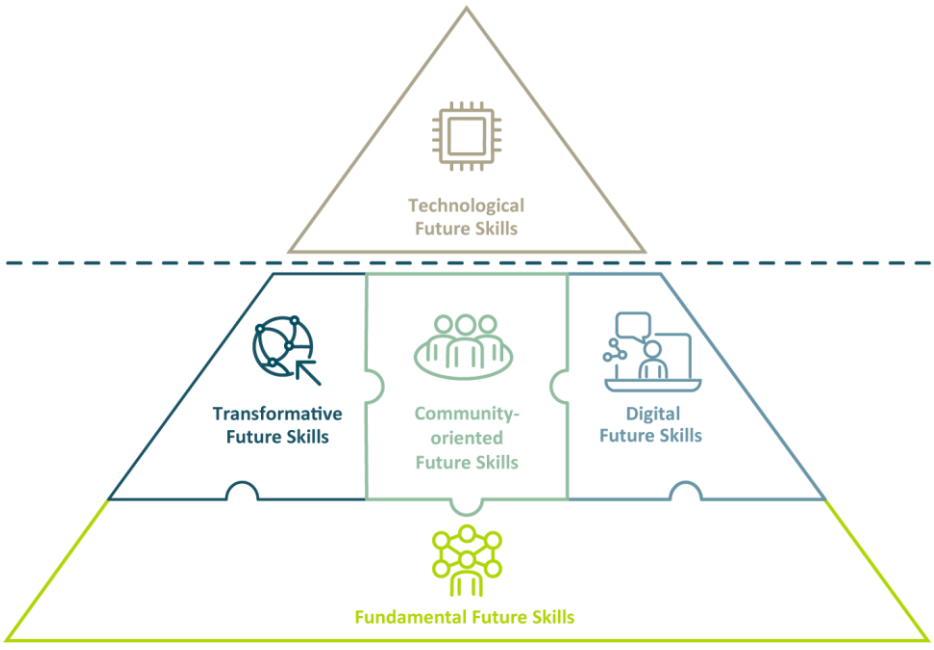
zukunftsmission-bildung.de/future-skills

I. EXECUTIVE SUMMARY

- Whether in the context of artificial intelligence, climate change or democracy, a world in transformation will require a clear focus on Future Skills across all sectors of education in the coming years – from schools and higher education to vocational training and continuing education.
- To advance both the content and methodology of the Stifterverband's 2021 framework, the organisation established an academic task force entitled Future Skills 2030. The task force aimed not only to update the set of skills, but also to strengthen and expand the methodological foundations of the analysis.
- The updated Future Skills 2030 framework identifies 30 core Future Skills.
- The Future Skills 2030 framework builds on a stable foundation of Fundamental Future Skills, unfolds across three broad competence areas – transformation, community and digitalisation – and culminates in expert-level competences related to technological excellence.
- More than 50 experts contributed to the development of the new framework and the formulation of competence descriptions, while over 1,000 respondents from all stakeholder groups confirmed the high relevance of the identified Future Skills for the next five years.
- Fundamental Future Skills, such as *critical thinking* and *communication*, act as key cross-cutting competences and form the foundation for the other Future Skills in the framework.
- Transformation is becoming the norm. As a result, Transformative Future Skills, such as *innovation* and *sustainability competence*, remain highly relevant.
- The megatrend of artificial intelligence requires all learners to develop Fundamental and Digital Future Skills, including *AI literacy* and *data literacy*, alongside specialised AI skills at the expert level.
- Active engagement with democratic culture is becoming increasingly essential, along with the corresponding Community-Oriented Future Skills such as *dialogue competence* and *responsibility & accountability*.
- At the expert level of technological competence, *cybersecurity* plays an increasingly important role. Organisations need to expand expertise in this area, particularly in the context of generative AI.
- Depending on their sector, institutional profile and strategic priorities, institutions may assign different weights to individual Future Skills when developing curricula.

Figure 1: Future Skills 2030

Specialist skills in key technologies are needed in all industries and are a scarce resource on the job market



A changing world requires Fundamental, Transformative, Community-oriented and Digital Future Skills for everyone

II. FUTURE SKILLS 2030: WHY WE NEED FUTURE SKILLS

1. Future Skills for a Changing World

Our world is undeniably undergoing profound change – perhaps more so than ever before. The pace of technological development has increased significantly in recent years, and digitalisation and AI continue to reshape fundamental competence requirements in everyday life and the world of work (OECD, 2024). Artificial intelligence has become pervasive across all areas of life, while climate change challenges and threats to democratic systems are intensifying. Together, these dynamics underline the need to continuously reassess the competences required in the context of constant change.

With this publication, the Stifterverband presents an update of its Future Skills 2021 framework, offering a forward-looking perspective for the next five years, up to 2030. This study addresses current dynamics, identifies key megatrends and derives future competence requirements from them. At its core lies the guiding question of which Future Skills will be particularly important over the coming five years.

Future Skills Definition

In this framework, Future Skills are understood as the action-oriented competences that will be particularly important in a changing world over the next five years.

At a broad level, Future Skills refer to cross-cutting competences related to personality, work and society that are relevant to all individuals. They are complemented by Future Skills at the expert level, which reflect the technological and specialist skills required by companies. Future Skills enable individuals, society, and the economy to shape change confidently, responsibly and collaboratively, thereby strengthening society's overall capacity for innovation. Future Skills encompass knowledge, skills, and attitudes.

The key Future Skills identified for the next five years do not necessarily have to be entirely new. What matters is their relevance for the future within a clearly defined time period (2026–2030) and their importance for competent action in professional and social contexts. The framework therefore addresses challenges on two levels:

- At a broad level, all individuals require future competences to navigate a world shaped by multiple transformation processes, both in professional life and in everyday contexts.
- At the expert level, the framework describes competence requirements for specialists who will be in particularly high demand in the German economy over the next five years. One focus is on new key technologies.

The identified Future Skills provide an updated orientation framework for both levels. While highly relevant, the framework does not claim universal validity. Instead, it represents a starting point developed with the involvement of stakeholders from academia, business, civil society and politics. Its aim is to help institutions prioritise future-skills-related activities, adapt them to specific institutional profiles and embed them systematically and sustainably in appropriate content and formats.

The Future Skills 2030 framework thus supports the development of adapted curricula, innovative programmes and the strategic institutional development aimed at strengthening Future Skills for a changing world. Institutions may choose to address all 30 Future Skills, or focus on selected Future Skills and competence categories, depending on their needs.

2. Target Groups & Possible Applications

The updated framework is the result of a year-long development and consultation process carried out within the Alliance for Future Skills. Together with an academic task force appointed for 2025, the Stifterverband organised a series of qualitative and quantitative surveys as well as exchange and feedback formats with stakeholders from business, academia, education, civil society and politics. In total, more than 1,500 people contributed to the process.

The Future Skills 2030 Academic Task Force

To provide technical and methodological support for the framework update, the Stifterverband established the academic task force Future Skills 2030 in January 2025. The task force played a key role in throughout the development process. It comprised three representatives of the Stifterverband and 15 external members, selected from more than 500 members of the Alliance for Future Skills based on their expertise. The members hold a range of positions within higher education and research institutions. In addition to this report, the task force published a comprehensive scientific report (available in German only), which outlines relevant technical references, methodological approaches and the individual steps of the development process.

The framework has been updated through extensive stakeholder engagement, incorporating a wide range of perspectives. It aims to provide clear orientation for interventions designed to strengthen essential competences. One central objective of this publication is to ensure that the framework remains timely, relevant and accessible for stakeholders in business, academia, education, civil society and politics.

"By integrating Future Skills into their curricula, universities can modernise their provision and offer students a more future-ready learning environment."

President, Higher Education Institution

The Future Skills 2030 framework offers a wide range of applications across different sectors:

- **Higher education institutions (HEIs)** can use the framework to enrich teaching, develop new formats, support strategic programme and curriculum development, and strengthen their institutional profile.
- **Companies** can integrate new content and formats into reskilling and upskilling initiatives and use the framework to guide HR and organisational development.
- **Policymakers** and **public-sector administrators** can use the framework as a guide for education and labour market strategies, education programmes, and personnel development in the public sector.
- **Civil society organisations** can use the framework to align educational provision, engagement formats and projects with future-oriented objectives, and to foster social innovation.

Figure 2: Possible Applications for Higher Education Institutions and Companies

HIGHER EDUCATION INSTITUTIONS	COMPANIES
Higher Education Institution A: An HEI develops new interdisciplinary modules on Digital Future Skills based on the framework.	**Company A:** An industrial company sets up an internal training programme specifically designed to strengthen employees' Transformative Future Skills.
Higher Education Institution B: An HEI embeds Future Skills as a guiding principle in its institutional development plan, using them to drive innovation in teaching and staff development and to ensure that graduates acquire sustainable, future-oriented competence profiles.	**Company B:** A medium-sized company uses the framework to adapt competence profiles in recruitment, enabling it to attract new employees with future-oriented competence profiles.

3. Analytical Framework & Methodology

3.1. Future Skills 2021

In 2018, the Stifterverband, in collaboration with McKinsey & Company, published an initial Future Skills framework, which was last updated in 2021 (Süßenbach et al., 2021). In recent years, this framework has become a widely recognised and widely used – though at times critically discussed – orientation framework within higher education and the business sector, not least due to its clear and structured design. Many higher education institutions, companies and other education providers have used the framework as a basis for developing concrete measures and programmes. The previous framework forms the basis for the updated version presented here.

3.2. Current Studies and Publications

In addition to the Stifterverband and its partners, a wide range of stakeholders from academia, business, politics and civil society in Germany and across Europe are actively engaged with Future Skills and future-oriented competence requirements. As a first step towards updating the framework, the task force identified relevant publications from recent years and incorporated them into each stage of the methodological process.

Academia: There is a broad international academic discourse on Future Skills. An overview is provided by Kotsiou et al. (2022), who present a scoping review of 99 frameworks. The authors identified more than 340 future-oriented skills and clustered them into nine categories, incorporating not only Future Skills but also concepts such as "21st century skills" and the "4C model". In the German-language research landscape, the Fraunhofer Institute for Industrial Engineering (IAO) plays a key role in examining Future Skills, with a particular focus on the world of work. It recently published a meta-study reviewing 29 Future Skills studies from the DACH region and aggregating 39 Future Skills from the results (Dworschak et al., 2025).[1] The NextEducation research group led by Ehlers et al. (2020, 2023) has also published extensively in recent years on Future Skills concepts, comparative analyses and Future Skills in the context of AI.

Business: In Germany, business-focused perspectives on Future Skills are gathered, among others, by AgenturQ, a joint initiative of Südwestmetall and IG Metall Baden-Württemberg. In collaboration with the German Economic Institute (IW), AgenturQ identified "success-critical competences" for the metal and electrical industry in 2024, based on a cluster analysis of online job advertisements (AgenturQ, 2024). With a specific focus on the megatrend of AI, the Stifterverband and McKinsey published a framework on AI skills in German companies (Rampelt et al., 2025), while the Bertelsmann Stiftung released a framework focusing on AI in public administration (Fischer, 2025). McKinsey & Company's annual Technology Trends Outlook (Yee et al., 2025) provides an important reference point for discussions of future technological competences at the expert level.

Politics: A range of political actors are actively engaging with the topic of Future Skills. The OECD is particularly prominent internationally, for example through its Future of Education & Skills 2030/40 programme and the associated OECD Learning Compass 2030 (2019). In 2025, the European Commission published its updated framework for digital competences, DigComp 3.0 (Cosgrove & Cachia, 2025), and, together with the OECD, a draft AI Literacy Framework. GreenComp, a European competence framework for sustainability was published in 2022 (Bianchi et al., 2022).

Civil society: In Germany, a wide range of civil society actors continue to contribute actively to discussions about future competence requirements. These contributions are documented, among others, in Spiegel et al. (2021). Many of these actors are also involved in the Germany-wide Future Skills Alliance.

[1] Since 2025, Fraunhofer IAO and Fraunhofer IRB have been consolidating their Future Skills research activities within the jointly established Heilbronn Research and Innovation Centre for Future Skills: https://www.hnfiz.fraunhofer.de/de/leistungen/fiz-future-skills.html

3.3. Methodological Approach

Methodological steps for developing the updated framework

1.	Desk research (from January 2025)	*Academic task force*
2.	Megatrends survey (April 2025)	*525 people surveyed online*
3.	Expert workshops (May/June 2025)	*Fraunhofer IAO & 27 experts*
4.	Expert interviews (August/September 2025)	*Stifterverband & 12 companies*
5.	Draft Future Skills 2030 framework (September 2025)	*Academic task force*
6.	Future Skills survey (September/October 2025)	*1,004 people surveyed online*
7.	Finalisation of Future Skills 2030 framework (November 2025)	*Academic task force*

To adequately capture the diversity of relevant perspectives on social and economic transformation, the update process involved a wide range of stakeholder groups and employed a mixed-methods approach. This made it possible to identify Future Skills that are relevant both broadly and at the expert level.

Starting in January 2025, the task force conducted a comprehensive review of the current research landscape. The task force then discussed the strengths and limitations of different approaches. These discussions informed decisions on the key topics, methodological choices and the procedure outlined above.

In addition to analysing the content of existing studies and frameworks, the task force conducted a megatrends survey with more than 500 respondents to prioritise overarching social, economic, political and technological developments expected up to 2035. On the basis of these findings, the Stifterverband commissioned Fraunhofer CeRRI, a research unit of the Fraunhofer IAO, to work with the task force and selected experts to derive competence requirements from the identified megatrends. During these expert workshops, almost 500 individual statements were collected, which the academic task force then clustered into competence categories and, where possible, linked to existing Future Skills.

Building on these results, the Stifterverband conducted interviews with company executives to discuss the Future Skills already identified at the broad level and to identify key Future Skills at the expert level, with a particular focus on technological change. A total of twelve people in leadership positions took part in semi-structured interviews on future technological competences. They represented a range of industries, including technology and automation, telecommunications and IT, manufacturing and engineering, consumer goods and retail, pharmaceuticals, insurance and consulting, as well as continuing education.

In autumn 2025, the academic task force conducted a comprehensive online survey with more than 1,000 participants to assess the relevance of the proposed Future Skills among a broad audience.[2] Respondents were asked to rate the Future Skills both in general and in relation to individual megatrends. In addition, participants were able to provide feedback on the competences and suggest additional Future Skills for inclusion in the framework.

The German-language version of this framework was published in December 2025 (Rampelt et al., 2025b, Gehrs et al., 2025). The English translation was carried out in January and February 2026, drawing on established terminology and reference frameworks – including Kotsiou et al. (2022), OECD (2025), DigComp 3.0 (2025), Ehlers et al. (2022) – and with support from DeepL's AI translation tool, English native speakers, and members of the academic task force.

[2] Of the almost 1,300 survey participants, 1,004 were included in the analysis. These respondents had answered at least the questions assessing the general relevance of the Future Skills presented. The analysed sample comprised 737 respondents from education and academia, 144 from business, 81 from civil society and 41 from policy and public administration. A total of 545 respondents reported having managerial responsibility, including 41 who were responsible for more than 250 employees.

4. Megatrends Until 2035

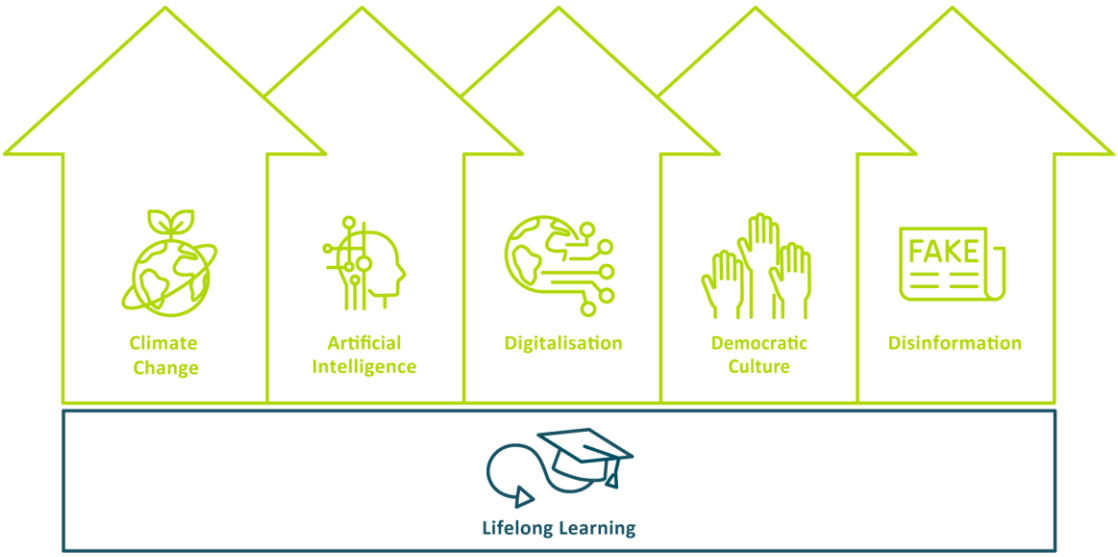
As a concept, Future Skills address competence requirements for futures that remain, to varying degrees, uncertain. A particular challenge lies in predicting the dynamics that will fundamentally shape these futures. For this reason, the update reintroduced the concept of megatrends as a core element of the development process. Megatrends serve as an important orientation framework for revising the Future Skills framework and focus on developments over the next ten years. They describe profound social, economic, political and technological changes that evolve gradually but exert influence over extended periods – usually seven to ten years or longer (Naisbitt & Aburdene, 1990).

Based on extensive literature reviews, the academic task force identified 17 megatrends that were repeatedly described as particularly significant (including by the Zukunftsinstitut and BMFTR). Their relevance was assessed via a German-language online survey of 525 participants in April 2025. Five key megatrends emerged as having the highest perceived relevance:

1. **CLIMATE CHANGE**
2. **ARTIFICIAL INTELLIGENCE**
3. **DIGITALISATION**
4. **DEMOCRATIC CULTURE**
5. **DISINFORMATION**

In addition, respondents – particularly from the business sector - identified lifelong learning as a cross-cutting megatrend of particular importance in the April 2025 survey.

Figure 3: Key Megatrends Until 2035



These megatrends provided the basis for the next stage of the revision process, from which future competence requirements were derived. Compared to the megatrends themselves, the Future Skills identified are aligned with a shorter timeframe to better capture the strong dynamics within individual trends.

To support this process, the Fraunhofer IAO – Centre for Responsible Research and Innovation (CeRRI) provided an appropriate methodological framework for further discussion and for deriving competence requirements based on the megatrends.[3] The expert workshops took place in close cooperation with the academic task force.

[3] Using the "futures wheel" method, concrete competence requirements were gradually derived in co-creative settings for defined future scenarios. These scenarios were based on the megatrends identified in the preceding survey.

III. THE FUTURE SKILLS 2030 FRAMEWORK

1. Five Overarching Future Skills Categories

Recent years have been marked by profound social and technological transformations, reflected in the megatrends identified for the coming decade. At the time the Future Skills 2021 framework survey was conducted, many still viewed artificial intelligence – both in economic and academic contexts – as a specialist topic rather than a mainstream concern. This changed rapidly with the emergence of generative AI. Likewise, democratic culture appeared considerably more stable than it does today, and than it is likely to be in the years ahead. Technological developments are now amplifying disinformation and increasing cybersecurity risks. Against this backdrop, updating skill and competence requirements is both necessary and timely.

The new Future Skills 2030 framework builds on the existing competence categories, updating and extending their content where required. In addition, it introduces a new competence category: Community-Oriented Future Skills. This category reflects the growing significance of the megatrends of democratic culture and disinformation, as well as recent studies on social cohesion and cooperation in everyday life and work (including Zick et al., 2025; Teichler et al., 2023, 2025) and the resulting need to strengthen collective capacities. The updated framework therefore comprises four competence categories that are broadly relevant to everyone: Fundamental Future Skills, Transformative Future Skills, Community-Oriented Future Skills and Digital Future Skills. These are complemented by Technological Future Skills which address expert-level competence requirements linked to critical technological challenges expected in the coming years.

FUNDAMENTAL FUTURE SKILLS form a comprehensive foundation of enduring competences on which all other Future Skills are built. They enable individuals to communicate effectively, learn continuously, think critically and act creatively and reflectively.

TRANSFORMATIVE FUTURE SKILLS are particularly focused on actively shaping change, innovation and sustainability. They enable individuals to understand complex systems, cope with uncertainty and develop sustainable, visionary solutions to future challenges.

> *"We must learn to understand change as something normal, rather than something exceptional."*
> **Manager, Kärcher**

COMMUNITY-ORIENTED FUTURE SKILLS describe the competences required to address challenges collaboratively and to participate responsibly in a diverse, democratic and interconnected society. They emphasise dialogue, participation and responsibility as foundations of social cohesion.

DIGITAL FUTURE SKILLS refer to competences related to the confident and critical use of digital technologies, information and data. They enable individuals to use digital media confidently, assess information and data securely, and use artificial intelligence in an informed, responsible and ethical manner.

TECHNOLOGICAL FUTURE SKILLS are specialised competences at the expert level related to key technologies that are critical for economic development, security and competitiveness. They enable the development, governance and responsible use of complex technological systems, as well as the active shaping of technological innovations – from data science and autonomous systems to AI engineering and cybersecurity.

2. The 30 Future Skills

The Future Skills included in this framework were identified through a step-by-step clustering process based on more than 100 proposed skills. Some build directly on the previous framework with only minor adaptations, while others reflect insights from current research and were newly introduced. A subsequent Future Skills survey assessed the relevance of the selected Future Skills from the perspective of various stakeholder groups. On this basis, *resilience* was added as a Transformative Future Skill. A combination of desk research and expert interviews was used to identify the Technological Future Skills at the expert level.

The Fundamental Future Skills comprise eight competences: *critical thinking*, *communication*, *cooperation*, *problem solving*, *learning to learn*, *ethical reasoning*, *self--management*, and *creativity*.

The Transformative Future Skills comprise six competences: *tolerance of ambiguity*, *sustainability competence*, *systems thinking*, *innovation*, *vision competence*, and *resilience*. In the survey assessing the relevance of the proposed Future Skills across the wider population (N = 1,004), participants were asked whether any important Future Skills were missing. By a clear margin, respondents most frequently mentioned *resilience* (58 mentions out of a total of 759 qualitative responses). Based on this feedback, the framework includes resilience as a Transformative Future Skill.[4]

The new category of Community-oriented Future Skills includes five competences: *dialogue competence*, *democratic competence*, *responsibility & accountability*, *participation competence*, and *diversity competence*. Some of these were taken from other Future Skills categories, while others are new.-

The Digital Future Skills have been updated to reflect the requirements of a world undergoing rapid digital transformation. They now include competences across five key areas: *information literacy*, *AI literacy*, *digital literacy*, *media literacy*, and *data literacy*. Depending on the area of application, these Future Skills may involve multiple dimensions and practical competences and may, in some cases, require further differentiation through dedicated frameworks (cf. OECD & European Commission, 2025).

Looking ahead to the next five years, the Technological Future Skills place particular emphasis on developments in AI and cloud infrastructures. They comprise competences in six areas: *data science & analytics*, *autonomous systems & robotics*, *cloud development & operations*, *cybersecurity*, *AI engineering*, and *change management & AI leadership*.

> *"Expert-level AI skills [mean] building your own LLMs, connecting closed LLM systems – and ensuring the necessary cybersecurity."*
> **Partner, Kienbaum**

These Technological Future Skills at the expert level were identified based on previous studies and expert interviews with individuals in leadership positions in companies from the Stifterverband network. During these interviews, the company representatives placed particular emphasis on various aspects of AI development, which the framework reflects accordingly among the Future Skills at the expert level. They also highlighted autonomous systems and cybersecurity as areas that will require specialised expertise for the majority of organisations in the coming years.

[4] After an in-depth discussion with the academic task force, it was decided to reintroduce *resilience* into the updated framework. *Resilience* had already been included in the Future Skills 2021 framework. A closer examination of the concept shows that empirical studies reach partly contradictory conclusions regarding whether certain constructs described as competences can, in fact, be learned (cf. Fletcher & Sakar, 2013; Soucek et al., 2018; Leys et al., 2020). At the same time, *resilience* features prominently in relevant studies (e.g. Kotsiou et al., 2022), and both AgenturQ and the German Economic Institute (IW Cologne) predict particularly strong growth rates for resilience as a" cross-cutting competence" by 2030 (AgenturQ, 2024). In the prioritisation process, "empathy" ranked second (24 mentions), followed by "intercultural competence" in third place (23 mentions). "Empathy" was therefore integrated into *dialogue competence*, while "intercultural communication" was added as a complementary element to *communication*.

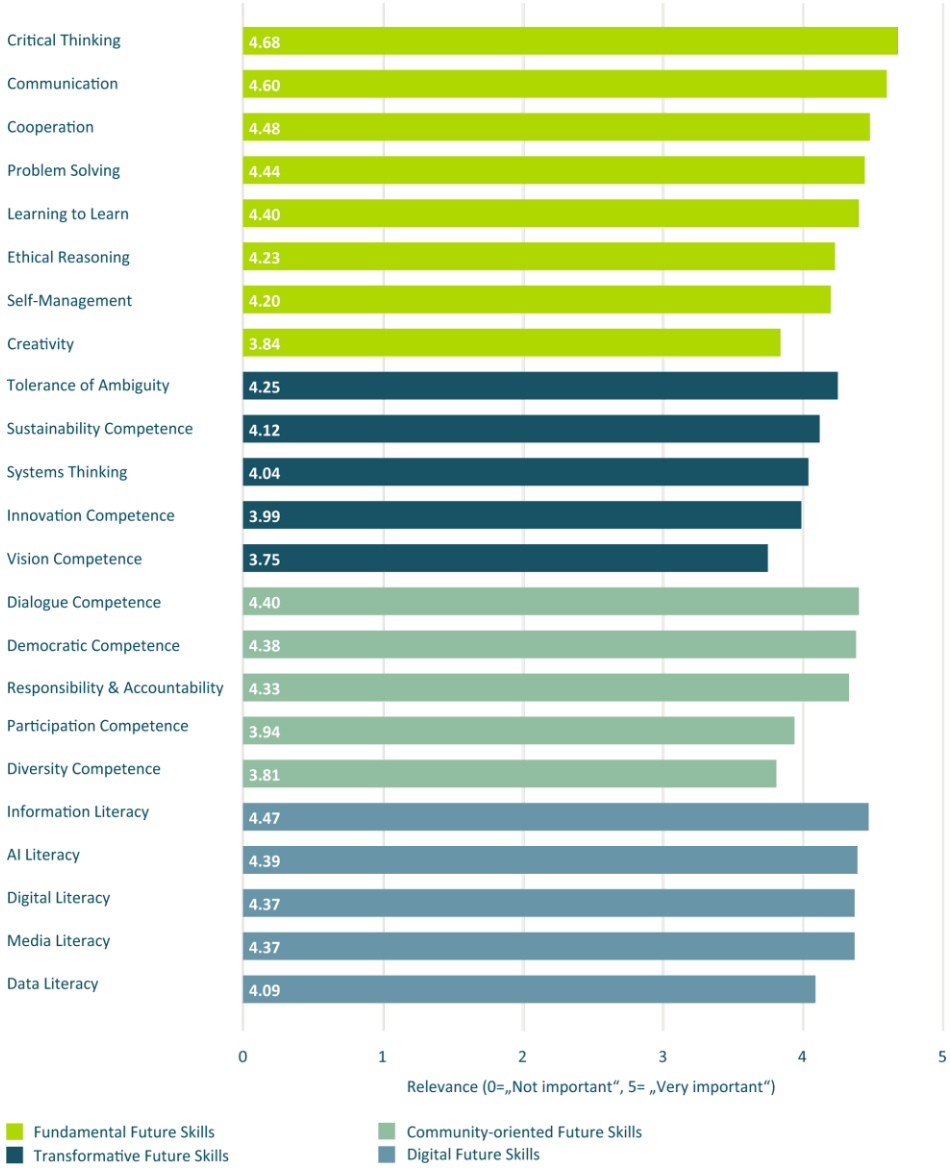
Figure 4: Future Skills 2030 with Brief Descriptions

CATEGORY	FUTURE SKILL	DESCRIPTION
Fundamental Future Skills	Critical Thinking	Systematically and constructively questioning and evaluating information and arguments to make well-reasoned judgements.
	Communication	Communicating clearly, in a dialogue-oriented and context-appropriate manner across different situations, including in intercultural settings.
	Cooperation	Working with others to shape cooperation and collaboration in order to integrate diverse perspectives into shared, sustainable approaches.
	Problem Solving	Recognising and understanding complex or novel problems, developing structured, collaborative and effective solutions, and contributing to their implementation.
	Learning to Learn	Independently organising and developing one's own learning, adapting it to new requirements, and using digital media and technologies effectively and autonomously.
	Ethical Reasoning	Recognising ethically relevant situations and decisions, weighing options and alternatives on an ethical basis, and aligning one's actions accordingly.
	Self-Management	Actively shaping one's own development through self-organisation, self-motivation and reflection, and consciously strengthening one's self-efficacy.
	Creativity	Developing original ideas, giving them form and substance, and refining existing approaches.
Transformative Future Skills	Tolerance of Ambiguity	Recognising ambiguity, heterogeneity, uncertainty and contradictions, dealing with them constructively and creatively, and reflecting on one's own role within them.
	Sustainability Competence	Aligning individual and collective actions with sustainable development, based on an understanding of ecological, social, political, and economic interrelationships, and contributing to the conditions necessary for sustainable change.
	Systems Thinking	Comprehensively understanding complex systems, interrelationships, and interactions, and basing action on systematic, rigorous analysis.
	Innovation Competence	Developing innovations in professional or private contexts and translating them into effective applications with clear added value.
	Vision Competence	Envisioning future scenarios, reflecting on their significance for (entrepreneurial) action in the present, and deriving a goal-oriented mission and initial measures. *[This competence is closely related to the concept of futures literacy.]*
	Resilience	Engaging constructively with stress and change, emerging stronger from challenging situations, and maintaining psychological, social, and organisational resilience.
Community-oriented Future Skills	Dialogue Competence	Engaging in respectful and empathetic dialogue, adopting other perspectives, constructively negotiating different positions, and resolving conflicts productively.
	Democratic Competence	Promoting the fundamental principles of democratic and solidarity-based coexistence through active political participation, commitment to protecting fundamental rights, and the conscious avoidance of disinformation.
	Responsibility & Accountability	Taking responsibility for oneself and others, identifying opportunities to assume responsibility, being accountable for one's actions and their consequences, and making decisions with an awareness of potential consequences.
	Participation Competence	Actively and responsibly participating in decision-making and design processes, initiating them, and enabling others to participate in different contexts.
	Diversity Competence	Engaging with diversity in an appreciative manner, creating an inclusive and diversity-sensitive working environment, and productively integrating differences in collaborative settings.
Digital Future Skills	Information Literacy	Recognising information needs and identifying, obtaining, organising and managing information, as well as evaluating it critically and using it effectively.
	AI Literacy	Understanding AI and its applications, using AI systems productively, and critically assessing opportunities and risks – enabling confident and responsible action in a world influenced by AI.
	Digital Literacy	Using digital technologies independently, combined with an understanding of basic online safety, knowledge of common tools and systems, and respectful, efficient communication and collaboration in digital channels.
	Media Literacy	Using, analysing, and creating media critically, creatively, safely, and responsibly in the digital age.
	Data Literacy	Collecting, managing, evaluating, and applying data in a critical and reflective manner.
Technological Future Skills	Data Science & Analytics	Systematically collecting, preparing, and analysing complex data, and deriving reliable insights for decision-making, innovation, and value creation.
	Autonomous Systems & Robotics	Developing and controlling intelligent, autonomous systems and robotics solutions, and integrating them responsibly into working and living environments to safely and efficiently augment human capabilities.
	Cloud Development & Operations	Securely developing, operating, and continuously optimising scalable cloud-based applications and infrastructures to ensure resilient and efficient digital service operations.
	Cybersecurity	Proactively protecting information and technological systems against threats, assessing security risks, and developing and implementing robust strategies for prevention, detection, and response.
	AI Engineering	Responsibly designing, developing, training, and integrating AI systems and models into productive application environments to enable data-driven value creation.
	Change Management & AI Leadership	Strategically designing AI-driven change processes, competently guiding people and organisations through transformation, and ensuring acceptance, benefits, and sustainable impact.

IV. STAKEHOLDER PERSPECTIVES ON THE RELEVANCE OF FUTURE SKILLS

In an online Future Skills survey, 1,004 participants assessed the relevance of the 23 Future Skills[5] included in the framework at the time. Across all stakeholder groups – academia and education, business, civil society, and politics – participants showed clear agreement on the perceived importance of Future Skills requirements. Respondents confirmed the relevance of all of the Future Skills proposed, with mean values ranging from 4.68 (*critical thinking*) to 3.75 (*vision competence*). Only *diversity competence* and *vision competence* received mean values below 4.0 across all stakeholder groups. Fundamental Future Skills such as *critical thinking* and *communication* ranked as essential for the coming years for the majority of respondents across all sectors. Participants also confirmed the relevance of the newly added Community-Oriented Future Skills - including, for example, *dialogue competence* and *democratic competence*. Within the competence category of Digital Future Skills, the emergence of *AI literacy* as a broadly recognised Future Skill may be contributing to a decline in the perceived relevance of *data literacy*, while *information literacy* and *media literacy* continue to rank highly across all stakeholder groups.

Figure 5: Relevance of Future Skills in General



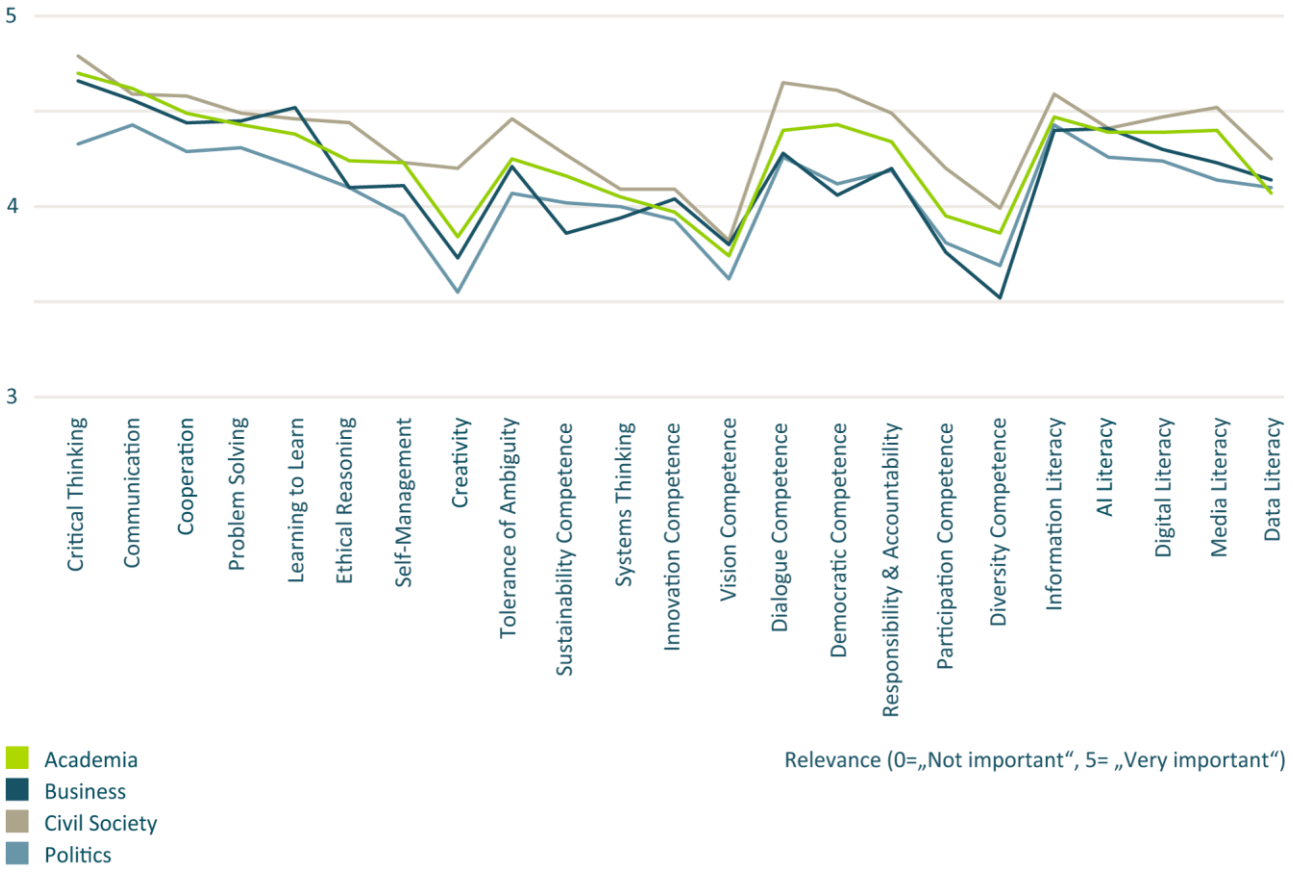
[5] As outlined above, resilience was included in the framework as a separate future skill only after the future skills survey. The technological future competences identified based on expert interviews were not part of the quantitative survey.

Although stakeholder groups generally agreed on the relevance of individual Future Skills, some smaller differences emerged. For example, academia and the education sector, as well as civil society, rated *sustainability competence* as more important than business, politics or public administration did. Civil society also assigned greater importance to *creativity* than any of the other groups surveyed. Respondents from civil society, education and academia also tended to give higher ratings to the Community-Oriented Future Skills than did the other groups surveyed, particularly business.

The business sector placed particular emphasis on *learning to learn*, reflecting its strong prioritisation of the megatrend of lifelong learning. It also prioritised digital and data-related skills – *AI literacy*, *digital literacy* and *data literacy* – more than other skills. At the same time, all stakeholder groups strongly prioritised *critical thinking* and digital technologies, with a particular focus on the interrelationship between the two. From an overarching cross-stakeholder perspective, keeping pace with technological change therefore requires not only stronger technological capabilities but also the integration of social considerations. Together, these elements support the development of sovereign, sustainable, and socially responsible technological innovation.

> *"We will not be able to develop further as a society if we rely solely on technologies without knowing and taking into account their social impact."*
>
> **Director Crossfunctional Projects, AbbVie Germany**

Figure 6: Relevance of Future Skills by Stakeholder Group



V. FUTURE SKILLS FOR INDIVIDUAL MEGATRENDS

In addition to assessing the overall relevance of Future Skills over the next five years, participants were also invited to identify which Future Skills they considered relevant for a specific megatrend. Each respondent was randomly assigned one megatrend.

Selected key findings for the megatrends of AI, climate change, and democratic culture are presented below. A comprehensive overview is provided in Figure 8.

For the megatrend of artificial intelligence, respondents clearly view *critical thinking* as the most important Future Skill. This is followed closely by the Digital Future Skills – *AI literacy*, *information literacy*, *media literacy*, *digital literacy*, and *data literacy* – as well as *ethical reasoning*, *learning to learn*, *responsibility & accountability,* and *problem solving*.

By contrast, respondents rank *sustainability competence* highest for the megatrend of climate change, followed closely by *responsibility & accountability* and *problem solving*. Particularly noteworthy is the comparatively high relevance attributed to *vision competence*. While respondents assess this skill as only moderately relevant in the general survey and across the other megatrends, it appears to be of considerable importance for shaping a sustainable future. A clear connection can be drawn here to the competence area *envisioning sustainable futures* in the European Union's GreenComp framework and the competence of *futures literacy* contained therein (Bianchi et al., 2022).[6]

In the context of the megatrend of democratic culture, respondents regard fundamental *democratic competence* as central, followed by *critical thinking*. *Dialogue competence* receives significantly greater importance here than in the other megatrends, as does *participation competence*.

Overall, the findings point to a dynamic interplay between technological adaptability and broad social responsibility. This interaction is likely to shape the future design of education and skills development, with each dimension mutually reinforcing the other.

At the same time, the perceived importance of individual Future Skills varies depending on the megatrend in question. This differentiated assessment is particularly relevant in relation to institutional priorities and profiles, and it offers higher education institutions, for example, the opportunity to develop context-specific Future Skills frameworks with clearly defined priorities. An institution focused on sustainability may therefore develop a Future Skills profile that differs from one that foregrounds artificial intelligence, or from a higher education institution planning to prioritise issues of disinformation in the years ahead.

[6] Interestingly, however, in the present Future Skills 2030 framework, the term is based, among other sources, on “vision competence” in the European Union’s Entrepreneurship Competence Framework (Bacigalupo et al., 2016).

Figure 7: Heat Map Showing the Relevance of Future Skills by Megatrend

VI. DISCUSSION & OUTLOOK

The Future Skills 2030 framework constitutes a necessary update and extension of the existing framework. It is grounded in a robust methodological approach and draws on the contributions of numerous recognised experts and HR professionals from a wide range of sectors, disciplines and industries. One key innovation lies in its focus on overarching, long-term megatrends, which makes discussions about possible futures substantially more concrete. At the same time, the updated framework preserves the strengths of the previous approach while introducing targeted adjustments to categories and competences where the highly dynamic developments of the past five years have made revisions essential.

What remains unchanged is the framework's clarity and accessibility. Structured around five overarching categories and 30 Future Skills, it offers a quick and easily accessible starting point for engaging with Future Skills across stakeholder groups. It is equally evident, however, that the framework achieves its greatest and most lasting impact when adapted to institutional profiles, priorities and challenges. These priorities may reflect disciplinary orientations, regional characteristics or broader strategic objectives. Only on this basis can institutions determine which of the 30 Future Skills to prioritise within specific educational programmes.

Megatrends can also serve as reference points for setting priorities when applying the framework. Institutions that focus on the megatrend of artificial intelligence, for example, will prioritise different Future Skills in their programmes and curricula than those whose strategic emphasis lies on climate change. This flexibility and adaptability are essential for integrating the framework effectively into educational programmes and for ensuring that Future Skills remain relevant to those the framework seeks to empower: individuals who need the competences required to navigate a rapidly changing world.

Within its programme activities, the Stifterverband places particular emphasis on higher education institutions. As central providers of education, they are expected to become proactive co-creators of a transforming society more rapidly than in the past, using education and research to strengthen a resilient, sovereign and innovative society. The new framework will provide a key foundation for the Stifterverband's future programme activities.

At the same time, the Stifterverband aims to use the framework to further strengthen dialogue between business and academia, between companies and higher education institutions. Building on the framework, it will create additional opportunities for exchange and discussion.

This exchange will be accompanied by ongoing monitoring and research. In the next phase, the 30 identified Future Skills can be further differentiated according to their relevance for specific academic disciplines or economic sectors. Where appropriate, the Stifterverband and the stakeholders involved in developing the framework will also contribute by supplementing individual Future Skills areas with targeted, topic-specific frameworks and learning objectives, and by supporting education providers in making suitable adaptations and refinements.-

These activities will be brought together within the Alliance for Future Skills, as part of the Future Mission Education ("Zukunftsmission Bildung") and will be incorporated into the international discourse, particularly at the European level. The Future Skills 2030 framework thus forms a new basis for a productive and sustainable discussion on future-oriented skill requirements over the next years.

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