

FUTURES LITERACY AS AN INCLUSIVE CONCEPT

Ariane Steuber

Leibniz University Hannover (Germany)

Abstract

The contribution takes a theoretical and conceptual perspective. First, the learning requirements associated with social innovations and crisis events are examined in order to clarify the challenges they pose for individuals and society. In the next step the concept of Futures Literacy (UNESCO, 2021; 2026) will be introduced, which is considered as a central concept for dealing with complex, uncertain and dynamic situations. However, promoting Futures Literacy presents a number of educational challenges: On the one hand, the future is a difficult subject to grasp. On the other hand, developing future scenarios requires certain skills that some learners have yet to acquire. Since the concept is fundamentally relevant to all people, the article explores the overarching question of the extent to which Futures Literacy is an inclusive approach that also enables disadvantaged individuals to participate in the process of shaping the future. For this purpose, contemporary didactic approaches to promoting Futures Literacy are presented and discussed from an inclusive education perspective.

Keywords: *Didactics, future, futures literacy, future skills, inclusive education.*

1. Introduction and problem definition

The present is characterized by rapid technological progress and numerous crisis events that require innovative action in all areas of society and are accompanied by new learning requirements for society and individuals. The numerous current processes of change cannot be comprehensively described here. Examples include global megatrends such as “digitalization, internationalization, individualization, and demographic change” (Kauffeld & Albrecht, 2021, p. 4) as well as “global economic and financial interdependence, migration, and climate change” (Schüller, Busch & Hindinger, 2019, p. 15).

Against the backdrop of current social change dynamics and, in some cases, crisis-ridden developments, the concept Futures Literacy (UNESCO, 2021; 2026) provides a key framework for developing future-shaping skills in complex, dynamic, and uncertain situations. It is considered a central approach to enabling individuals to better shape the future.

As all members of society are fundamentally affected by the social transformation processes mentioned above, Futures Literacy has to be considered as an inclusive approach. According to Allabauer (2022, p. 40) every individual is involved in the development of future-shaping skills. Sippl et al. (2023) point out that “futures literacy should enable each individual to develop strategies for coping with an uncertain future [...]. It encompasses an expanded perception and the ability to imagine alternative futures, the acceptance of complexity, and a new understanding of our capacity for action” (p. 9). In a broad understanding of inclusion Futures Literacy should incorporate social diversity and also give a voice to minorities, dissenting opinions, and critical voices (Bergheim, 2022, p. 278).

This article therefore explores the overarching question of the extent to which current didactic approaches to promoting Futures Literacy are suitable for meeting the requirements of inclusive and barrier-free education. The following section first examines the competence dimensions of Futures Literacy in order to identify starting points for competence acquisition on the one hand and pedagogical challenges on the other (chapter 2). Subsequently, exemplary didactic approaches for promoting Futures Literacy are presented and discussed in terms of inclusive education (chapter 3). The article concludes with suggestions for designing learning arrangements that are more strongly geared toward the needs of learners with special learning needs than has been the case to date (chapter 4).

2. Futures literacy: Competence dimensions and educational challenges

The concept Futures Literacy was developed by UNESCO. It is defined as “a capability to help people understand how and why we use the future to prepare, plan and interact with complexity and novelty in our societies.” (UNESCO, 2026). The skills it refers to are intended to enable people to stimulate their own imagination and thus improve their ability to recognise the significance of the future for their own lives, embrace change and shape social change (cf. UNESCO, 2021; 2026). The concept is considered to be a key approach to empowering individuals to shape the future more effectively (Allabauer, 2022, p. 39).

This is not an entirely new approach. Learning how to deal with change has long been a central topic e.g. in vocational training and education (Wittwer, 2011, p. 128f.). Back in 2011, Wittwer defined nine characteristics of *Change Competence*: commitment, curiosity, socially integrative behaviour, strategy, experience, composure, thoughtfulness, socially communicative action and willingness to change (p. 119f.).

Despite the central importance of the skills or competences addressed by Futures Literacy for dealing with social change and crisis phenomena, there is currently no uniform and binding understanding of this concept (Walter, 2024). Research literature has so far presented an inconsistent picture with regard to the definition of the competence dimensions associated with Futures Literacy. The concept encompasses different concepts of competence. This is reflected, for example, in the terms *skills* and *literacy*. These terms are mostly used synonymously in current research literature. In the following, the competence dimensions contained in the concept will be elaborated in more detail in order to derive conclusions for pedagogical and didactic questions and in order to be able to determine more precisely didactic starting points for the design of future-oriented teaching-learning settings.

2.1. Future skills

Future Skills are defined as “skills that will become significantly more important for working life or social participation in the next five years” (Kirchherr et al., 2018, p. 2). These include, for example, “the design of transformative technologies (artificial intelligence, smart hardware, robotics) as well as key digital and non-digital skills (digital interaction, adaptability, entrepreneurial thinking)” (ibid.). According to Suessenbach et al. (2021, p. 2) e.g., so-called *transformative skills* play a central role for companies and educational institutions alongside *classic*, *technological* and *digital skills*. In a competency framework presented in 2018, Kirchherr et al. identified a total of 18 Future Skills, which were divided into three categories: technological skills, basic digital skills and traditional skills (p. 5). Technological skills include competences “that are necessary for the design of transformative technologies” (ibid.). These skills are primarily required by specialists (ibid., p. 4 f.). Possessing basic digital skills, such as digital learning or agile working, enables people to “find their way around a digitalised environment and actively participate in it” (ibid., p. 5). These skills will be necessary in the future for both professional life and social participation (“digital citizenship”). They should therefore be mastered by everyone. Classic skills refer to things like problem-solving ability, creativity and perseverance (ibid.). In an extension of this Future Skills Framework from 2021, transformative skills were added as a fourth category, as these are becoming particularly important for companies in view of the key social challenges and accelerated change of recent years (Suessenbach et al., 2021, p. 4).

In summary, it is clear that Future Skills are a rather open and dynamic concept that is closely linked to current (technological) developments and is constantly changing. Definitions of Future Skills currently exist primarily as domain- or subject-specific frameworks (i.e. competence frameworks) that need to be specified for the design of educational processes. To this end, learning objectives must first be derived and competence levels defined (cf. Schüller et al., 2019, p. 50). One criticism could be that Future Skills is merely a “list of skill sets” (Ehlers, 2019, p. 37) based on a rather functionalist understanding of education. Futures Literacy, on the other hand, refers to more far-reaching skills, which will be discussed below.

2.2. Futures literacy

The meaning of the term *Literacy* has changed over time. The original understanding of Literacy refers to the mastery of classical cultural techniques such as reading, writing and mathematical thinking (Peschl, 2022). However, mastery of the original cultural techniques is no longer sufficient in today's “real and virtual world in which we live” (Allabauer, 2022, p. 40). In addition to a reflective approach to media, other cultural techniques are necessary to cope with social change (ibid.). Newer forms of Literacy include “personal, social and learning skills” (ibid.) as well as “critical thinking, the use of technology, social skills and the ability to empathise” (Peschl, 2022). This illustrates that the concept of literacy encompasses not only the ability to use certain technologies, but also the competence to adopt a reflective attitude and ask in-depth questions. This approach thus goes beyond the previously explained concept of Future Skills.

According to Peschl (2022) Futures Literacy means “engaging in a process of co-becoming with an unfolding reality” (n. p.). Co-becoming means reflecting on our relationship with the world and questioning that relationship. It also means engaging in “an exchange-oriented, interactive, existential, and cooperative relationship with the world” (ibid.). As an interim conclusion, it can be stated that Futures Literacy is more comprehensive than skills or competences: The above analysis, which does not claim to be exhaustive, shows that the dimensions listed here form a *holistic set* of skills, competences, and attitudes that enable us to deal better with future challenges and opportunities, both individually and collectively.

Promoting Futures Literacy also presents certain educational challenges: The future is something that does not yet exist. Consequently, the future is not tangible, but can only be grasped linguistically (cf. Grunwald, 2009, p. 26). The future can be derived from the present and the past. Anyone who wants to predict the future must know as much as possible about the present and the past (Gehmacher, 1968, p. 63; cited in Opaschowski, 2009, p. 17). Due to the language skills and prior knowledge required, some learners may need a special level of support in order to develop Future Literacy. Since this concept is a complex construct of different skills and competences, it can also be useful to determine different levels in order to identify starting points for support.

Since Futures Literacy is fundamentally relevant to all people, the question arises as to what extent the currently available didactic and methodological approaches are suitable for addressing the social diversity of learners. This question will be explored in the following chapter.

3. Didactic approaches to promoting Futures Literacy in educational practice

There are various didactic approaches and methods for promoting futures literacy (Bergheim, 2025), some of which are presented here as examples:

- **Future Workshop:** The classic future workshop was developed in Germany in the 1960s by Robert Jungk – “at the time of the civil rights movement as a method for solving social problems” (Meyer, 2019, p. 50). It is suitable for both school and extracurricular settings and promotes critical thinking, creative idea development and the ability to create action plans. The learning process comprises three phases. In the first phase, future topics and trends, as well as uncertainties and concerns, are analysed together. In the second phase, learners are encouraged to develop unconventional ideas and visions for the future based on the previous analysis. In the third phase, a concrete implementation plan is developed to help gradually realise the visions developed previously (Reich, 2003). In terms of content, the method is suitable for a wide range of topics (Holzinger & Spielmann, 2016).
- **Futures Literacy Laboratory:** The Futures Literacy Lab (FLL) was developed by UNESCO (2021; 2026). This is a structured and participatory learning format designed according to the principle of learning by doing. The FLL consists of four consecutive phases: 1. *Reveal*: In this phase, participants explore their unconscious assumptions about the future, 2. *Reframe*: Subsequently, new visions for the future are developed through targeted provocations or a change of perspective. Methods such as role-playing, visualisation or creative techniques are used for this purpose, 3. *New Questions*: Based on the new visions of the future, questions about the present are reformulated, 4. *Next Steps*: The newly acquired knowledge and perspectives are applied to current challenges (Scheerer, 2025).
- **Backcasting:** As part of this method, a desirable future goal is first defined. It then looks back and describes the steps required to achieve this goal (Krebs, 2024). This makes it possible “to circumvent existing assumptions and limitations of the present [...] and to focus on what is necessary to achieve long-term goals” (ibid.). Backcasting is particularly suitable for complex problems where small changes are not enough to achieve significant improvements. The method aims both to anticipate future problems and to identify the steps that need to be taken from the present in order to achieve this goal (ibid.).
- **Futures-Realcasting with eKursion:** This didactic approach was conceptualized by Angelika Neudecker (2024) as a “globally oriented and spatially focused extension of the Futures Laboratory” (p. 1). The method of Futures-Realcasting was developed in analogy to the method of Backcasting. Realcasting assumes “that a large part of the imagined futures actually already exist in the world (or are currently being developed, built, tested, or researched)” (ibid.). The aim of an eKursion is to find out to what extent the futures imagined in a Future Lab already exist in the real world. This is achieved using the Futures-Realcasting-Method, i.e. comprehensive research into the actual existence of the future visions developed. The eKursion promotes both the Futures Literacy of the participants and their *Cosmopoliteracy*, which is a “central competence of Education for Sustainable Development (ESD) and Global Learning” (ibid.).

- **Serious Games:** Serious games are increasingly becoming the focus of educational discussions. These are primarily digital games that are used to impart knowledge or encourage learners to engage with socially relevant topics. They combine playful elements with serious topics or learning content (Deutsche Kinder- und Jugendstiftung, 2026). Serious board games, e.g. Horizon Makers, can be used to promote “creative imagination, storytelling, sense-making, critical thinking, and empathy” (Schönbohm, 2025, p. 285).
- **Digital Games:** According to Walter (2024), digital games are a medium that can empower people to deal with future uncertainty. In his view, the specific media characteristics of games are well suited to teaching selected sub-skills of Futures Literacy, e.g. promoting innovative thinking and problem-solving skills (cf. Mills, Unworth & Scholes 2023, p. 66 f.). In this context, he draws on Candy (2018, p. 242) to highlight the potential of games to reduce complexity. Games open up spaces for action and exploration in which learners or players can try out new ways of acting without having to fear real-world (and possibly negative) consequences. In terms of content, his considerations focus on the climate crisis, which he believes to be the longest-lasting crisis of the present.

The approaches presented offer different starting points for promoting specific sub-skills and/or sub-competences of Futures Literacy. The following section discusses what adjustments may be necessary to the presented didactic approaches for promoting Futures Literacy for vulnerable or disadvantaged learner groups.

4. Conclusions

Promoting Futures Literacy, especially through constructivist methods, offers great potential for addressing social challenges that affect everyone. The ability to deal with future opportunities and uncertainties is particularly crucial for disadvantaged groups. In vocational education and training, Futures Literacy enables an inclusive approach to addressing future-related topics in the context of work and careers. It is important to consider the following aspects:

The methods presented above encourage participation and creativity, but also require social and communication skills. This could be problematic for participants with language barriers and requires special support measures. The use of digital media is equally motivating, but carries the risk of marginalizing people with insufficient digital skills.

In order to make Futures Literacy accessible to disadvantaged groups, learning content should be designed to be relevant to everyday life and accompanying support measures such as language courses must be offered. Given the social diversity in vocational training and a consolidated transition system in Germany, it is essential to actively involve disadvantaged groups in the discourse on the future. Adaptive (further) education and training opportunities are necessary to ensure that Futures Literacy is not only accessible to those from more education-oriented backgrounds.

References

- Allabauer, K. (2022). Futures Literacy aus dem Blickwinkel der Pädagogik. # *schule schuleverantworten* 2022_2, 38-45. DOI: <https://doi.org/10.53349/sv.2022.i2.a208>
- Bergheim, S. (2022). Zukünftebildung. Neue Kompetenzen für den Umgang mit dem Später. In O. König (Ed.), *Inklusion und Transformation in Organisationen* (pp. 275-287). Bad Heilbrunn: Julius Klinkhardt.
- Bergheim, S. (2025). Über die Kompetenz der Zukünftebildung. Vorschläge für sechs Teilkompetenzen und vier Niveaus. In C. Sippl, I. Capatu, & R. E. Krebs (Eds.), „*Es wird einmal ...*“. *Wissen schaffen – Zukünfte erzählen* (pp. 275-287). Innsbruck, Wien: Studienverlag. <https://doi.org/10.53349/oa.2025.a1.170>
- Candy, S. (2018). Gaming Futures Literacy: The Thing from the Future. In R. Miller (Eds.), *Transforming the Future – Anticipation in the 21st Century* (pp. 233-246). New York: Routledge.
- Deutsche Kinder- und Jugendstiftung GmbH (2026). Serious Games – Spielerisch ernste Inhalte vermitteln. In *bildung.digital. Bildungsportal für Schulen*. Retrieved February 12, 2026, from: <https://www.bildung.digital/artikel/serious-games-spielerisch-ernste-inhalte-vermitteln>
- Ehlers, U.-D. (2019). Future Skills und Hochschulbildung. „Future Skill Readiness“. In J. Hafer, M. Mauch, & M. Schumann (Eds.), *Teilhabe in der digitalen Bildungswelt* (pp. 37-48). Münster. Retrieved August 3, 2023, from: https://www.pedocs.de/volltexte/2020/18007/pdf/MidW_75_Ehlers_Future_Skills_und_Hochschulbildung.pdf
- Gehmacher, E. (1968). *Report 1998. So leben wir in 30 Jahren*. Stuttgart.

- Grunwald, A. (2009). Wovon ist die Zukunftsforschung eine Wissenschaft? In R. Popp, & E. Schüll (Eds.), *Zukunftsforschung und Zukunftsgestaltung. Beiträge aus Wissenschaft und Praxis* (pp. 25-36). Wiesbaden.
- Holzinger, H., & Spielmann, W. (2016). *Die Zukunft demokratisieren. Einführung in die Methode Zukunftswerkstatt*. Retrieved February 12, 2026, from: <https://jungk-bibliothek.org/wp-content/uploads/2016/08/zw-einf3bchrung-hh-wsp.pdf>
- Kauffeld, S., & Albrecht, A. (2021). „Kompetenzen und ihre Entwicklung in der Arbeitswelt von Morgen: branchenunabhängig, individualisiert, verbunden, digitalisiert?“ *Gruppe. Interaktion. Organisation. Zeitschrift für Angewandte Organisationspsychologie (GIO)* Volume 52, 1-6. <https://doi.org/10.1007/s11612-021-00564-y>
- Kirchherr, J., Klier, J., Lehmann-Brauns, C., & Winde, M. (2023). *Future Skills. Welche Kompetenzen in Deutschland fehlen*. Published by Stifterverband Bildung. Wissenschaft. Innovation. Retrieved August 3, 2023, from: https://dspace.library.uu.nl/bitstream/handle/1874/370163/future_skills_diskussionspapier_01_welche_kompetenzen_fehlen.pdf?sequence=1
- Krebs, R. E. (2024). Backcasting. In *Methodenmosaik des UNESCO Chair in Learning and Teaching Futures Literacy in the Anthropocene*. Retrieved February 18, 2026, from: <https://www.ph-noe.ac.at/unesco-chair>
- Meyer, L. (2019). *Zukunft gestalten in demokratisch-solidarischer Verständigung. Von den Anfängen der Zukunftswerkstatt bis zur „Konstruktivistischen Werkstatt“* (Dissertation). Köln. Retrieved January 19, 2026, from: https://kups.ub.uni-koeln.de/9476/1/Konstruktivistische_Werkstatt.pdf
- Mills, K. A., Unsworth, L., & Scholes, N. (2023). *Literacy for digital futures. Mind, Body, Text*. New York: Routledge.
- Neudecker, A. (2024). *Futures Literacy: Zukünfte-Realcasting mit eKursionen als Erweiterung des ZukünfteLabors*. <https://doi.org/10.25656/01:31456>
- Opaschowski, H. (2009). Zukunft neu denken. In R. Popp, & E. Schüll (Eds.), *Zukunftsforschung und Zukunftsgestaltung. Beiträge aus Wissenschaft und Praxis* (pp. 17-24). Wiesbaden.
- Peschl, M. F. (2022). *Futures Literacy: Vom Lernen über die Welt zum „Co-becoming“ mit ihr*. Retrieved February 27, 2023, from: <https://www.thelivingcore.com/futures-literacy-vom-lernen-ueber-die-welt-zum-co-becoming-mit-ih/>
- Reich, K. (Ed.) (2003). Zukunftswerkstatt. In *Methodenpool der Universität zu Köln*. Retrieved February 12, 2026, from: <http://methodenpool.uni-koeln.de/download/zukunftswerkstatt.pdf>
- Scheerer, J. (2025). *Futures Literacy lab*. Retrieved February 18, 2026, from: <https://www.learningarchitects.de/futures-literacy-lab/>
- Schönbohm, A. (2025). Horizon Makers: A Serious Game for Activating Futures Literacy Skills. In A. Schönbohm, F. Bellotti, A. Bucchiarone, F. de Rosa, M. Ninaus, A. Wang, V. Wanick, & P. Dondio (Eds.), *Games and Learning Alliance. 13th International Conference, GALA 2024, Berlin, Germany, November 20-22, 2024, Proceedings* (285-294). Wiesbaden: Springer.
- Schüller, K., Busch, P., & Hindinger C. (2019). Future Skills: Ein Framework für Data Literacy. Kompetenzrahmen und Forschungsbericht. *Hochschulforum Digitalisierung Nr.47/August 2019*. Retrieved August 5, 2023, from: https://hochschulforumdigitalisierung.de/sites/default/files/dateien/HFD_AP_Nr_47_DALI_Kompetenzrahmen_WEB.pdf
- Sippl, C., Brandhofer, G., & Rauscher, E. (2023). Zu diesem Band. In C. Sippl, G. Brandhofer, & E. Rauscher (Eds.), *Futures Literacy. Zukunft lernen und lehren* (pp. 9-12). Innsbruck: Studienverlag. Retrieved February 20, 2026, from: https://www.researchgate.net/publication/373258086_Sippl_Carmen_Brandhofer_Gerhard_Rauscher_Erwin_Hrsg_2023_Futures_Literacy_Zukunft_lernen_und_lehren_Hrsg_von_Carmen_Sippl_Gerhard_Brandhofer_Erwin_Rauscher_Innsbruck_Wien_Studienverlag_Padagogik_fur_N
- Suessenbach, F., Winde, M., Klier, J., & Kirchherr, J. (2021). Diskussionspapier Nr.3. Future Skills 2021. 21 Kompetenzen für eine Welt im Wandel. *Stifterverband Bildung. Wissenschaft. Innovation*. Retrieved February 20, 2023, from: <https://www.stifterverband.org/medien/future-skills-2021>
- UNESCO (2021). *Futures Literacy. An essential competency for the 21st century*. Retrieved February 07, 2023, from: <https://en.unesco.org/futuresliteracy/about>
- UNESCO (2026). *Futures Literacy & Foresight*. Retrieved February 10, 2026, from: <https://www.unesco.org/en/futures-literacy>
- Walter, T. (2024). Einleitung ins Teildossier: *Games als Mittel zur Förderung von Futures Literacy*. Retrieved January 19, 2026, from: <https://www.bpb.de/themen/kultur/digitale-spiele/546928/einleitung-ins-teildossier-games-als-mittel-zur-foerderung-von-futures-literacy/>
- Wittwer, W. (2011). Diagnose der Veränderungskompetenz bei Auszubildenden. In M. Bethscheider, G. Höhns, & G. Münchhausen (Eds.), *Kompetenzorientierung in der beruflichen Bildung* (pp. 113-130). Bielefeld: wbv.