TOTEMK REPORT – Futures Workshop 7th May 2024 in Closing Seminar at Strathmore University, Nairobi, Kenya

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1. Introduction

Education should always look towards the future. Therefore, it is essential to look beyond the current situation. This is particularly crucial when designing new curricula in Kenya HEIs towards competency-based education (CBE). To support this overarching aim of curriculum development we held a Workshop of ´Futures orientation to Education´ during TOTEMK Closing Seminar at Strathmore University, Nairobi on 7th May 2024. We designed the workshop based on Futures Workshop held by Finland Futures Research Centre (FFRC, University of Turku, Finland) at University of Nairobi in October 2023. The 2023 workshop was part of the REFORD project that refers to research-based and future-oriented curriculum review in teacher education in Kenya. These two projects, TOTEMK and REFORD, are supporting each other's programs. To extend the outcomes of REFORD's project, we decided to take the results gained from Futures Workshop in October 2023 as a starting point and explore them further in the workshop organized during TOTEMK Closing Seminar in May 2024.

Our aim in ´Futures orientation to Education´ workshop in May 2024 was to discuss and deepen our understanding about futures of education in teacher education with the following issues: What is futures research? How can we embed futures in education? What were the outcomes of the futures workshop in education (October 2023)? What can we make of the results of future analysis?

2. Foundation of future studies

As Juha Kaskinen and Joni Karjalainen (from FFRC) declared in their talk in REFORD Futures Workshop in 2023, looking for foresights to the future is not about predicting future (based on the future perspectives applied by Roy Amara (Kaskinen & Karjalainen, 2023; Karjalainen et al., 2024; Amara 1991)). One of the core principles of futures studies is that there is not only one future, instead there are many alternative futures: possible, probable, and preferable futures that can be explored for (Amara, 1991; Karjalainen et al., 2024). If we choose a narrow focus, we only think of probable futures to the disadvantage of overlooking what is possible and anticipated. However, we have "no crystal ball" to ask. Rather it is about the systematic study of futures (Kaskinen & Karjalainen 2023) that brings information about the future. We can create images, illusions, visions, and thoughts about what the future can provide us or how it looks like, but the future is not preordained (Amara, 1991). We can assume what might happen and consider the level of probability for different futures. However, by our decisions and choices we can affect the future. After all, it is significant to know what a probable, desirable, conditional, threatening, and avoidable signal is to be able to make relevant decisions at the society and local level (Amara, 1991). This also claims for knowledge and discussion about values, as Dr Alfred Kitawi persuaded the audience to think in the TOTEMK Futures Workshop in 2024.

To understand and influence the future, it is needed to explore the past as Edward de Bono says, "You can analyze the past, but you need to design the future" (de Bono, n.d.). Also, to influence the future you need to see and reflect on the present situation. And it is always good to have a plan B –

Instead of seeing one future, it is important to explore and consider many alternative possible futures.

As we can influence futures by our present decisions and choices, we can differ varied strategics to use in practice: 1) *Pragmatic foresight* gives promises for better future, like implementing tomorrows' teaching better (Hamel 2000, Hamel and Prahalad 1994). 2) *Progressive foresight* reflects on present challenges and asks for going beyond conventional thinking (out-of-the-box-thinking) and redesigning processes, products, and services using quite different assumptions. 3) *Civilisational foresight* tries to understand cross over the next generation (Slaughter 2004, 217 by Kaskinen & Karjalanen, 2023). That would be crucial to be able to think about what today's wars, pandemics, and climate changes mean for the next generations. As Wendell Bell (1997) claims that most futures scholars are critical realists, which means that "although some features of our surrounding world are almost immutable, the world is constantly shaped and framed by our actions, intentions and perceptions that are, to a degree, socially constructed".

Foresights to the future. What kind of skills will be useful in the future? The world is in continuous change that sets range of attention. Rapid changes in social, societal, cultural, economic, and working life context raise challenges, but also possibilities for human life and actions. Kaskinen and Karjalainen (2023) presented two types of skills, *future skills* and *futures skills* and how they are framing the needs towards futures. *Future skills* are skills that are necessary in certain kinds of world and demanded mainly by the industries, economy, and labor market in the future. For example, digitalization made ICT-skills important, but how long are those skills needed? *Futures skills* are skills such as "knowhow" and are needed for building up a sustainable and functional future and can be used in any type of future. Those skills are specific skills needed by those working with future orientation, like in education.

Future literacy was presented as a new civic skill (Miller, 2018) or competency (UNESCO) to see multiple futures. That is a capability that supports people to better understand the role of the future in what they see and do (UNESCO, 2012). Future literacy helps in imagination and enhances our ability to prepare, recover, and invent as changes occur. Why is this skill needed? The future is unpredictable. Without imagination of the future that encourages hope and foster collaboration and problem solving there is a high risk of despair.

Futures knowledge is a combination of facts and insightful information, where systematic thinking, intuition and imagination are intervened and that helps observation of futures signals. Those signals could be trends, megatrends, weak signals, non-linear developments, like wild cards, black swans, and purely surprises. Futures thinking makes some things visible: Prophecy and visionary thinking, forecasting (like extrapolation, prediction), futures studies, strategic planning, scenario planning, indicative national planning, prospective analyses. Foresight is always action-oriented, participatory and focused on alternative futures. The basis is on the present knowledge about future options that are collected and dignified with different future-oriented methods. By understanding the present knowledge about the future gives us a tool the future can be modified and changed. (Havas et al., 2010.)

How can we embed futures in education?

OECD (2019) has tried to formulate the expectation of future education by claiming "how can we prepare students for jobs that have not yet been created, to tackle societal challenges that we cannot yet imagine, and to use technologies that have not yet been invented? How can we equip them to thrive in an interconnected world where they need to understand and appreciate different

perspectives and worldviews, interact respectfully with others, and take responsible action toward sustainability and collective well-being?“ (OECD, 2019)

In education we all are struggling in searching for foresights to future curricula. The future is unpredictable. However, by being alert to some of the trends and weak signals now raising across the world (OECD, 2019) we can learn – and help our children learn – to adapt to and shape whatever the future holds. Students need support in developing not only knowledge and skills but also attitudes and values, which can guide them towards ethical and responsible actions. At the same time, they need opportunities to develop their creative ingenuity to help propel humanity towards a bright future. (OECD, 2019.)

An ability to see and observe gives tools to recognize different possibilities to participate in future-oriented activities, develop your own world view and how to interpret the surrounding world. Attitude, self-knowledge and recognizing and employing one’s know-hows (i.e. learning futures skills) are basic elements in education.

Competencies for the future

OECD report of Learning Compass 2030 (OECD, 2019) highlights futures competencies people need in their future life and in rapidly changing labor market as follows:

1. **Ability to use different tools interactively**: language, knowledge, technology (knowledge abilities, critical and creative thinking)

2. **Interacting with different groups of people**: compassion, ability to collaborate, conflict resolution skills (social and emotional skills)

3. **Independent agency**: grasping the big picture, setting goals and boundaries (practical and technical abilities and utilizing knowledge)

The OECD Learning Compass 2030 (2019) also defines “transformative competencies” that combines knowledge, skills, attitudes, and values students need to transform society and shape the future for better lives. These three transformative competencies are identified as:

1) **Creating new values**. When creating new value, students ask questions, collaborate with others, and try to think “outside the box” (OECD, 2019) and “inside the box” to invent and find innovative solutions.

2) **Resolving tensions and dilemmas**. Students must balance contradictory and incompatible demands that require empathy and respect of diversity to manage in a complex and ambiguous world.

3) **Taking responsibility**. When students take responsibility for their actions, they have a strong moral compass to consider reflection, working with others and respecting the planet. (OECD, 2019.)

These transformative competencies can be used across a wide range of contexts and situations – they are uniquely human (OECD, 2019). They could be termed as non-academic (cf. OECD, 2019 / Steinberg, 2017) not related to any school discipline, but instead they are general capacities cultivated. All three transformative competencies can be seen as higher-level competencies that help learners navigate across a range of different situations and experiences (Grayling, 2017). They are highly transferable and thus these competencies can be used throughout a lifetime (OECD, 2019).

3. Method and outcomes of the Futures Workshops (2023, 2024) and their further implications

There are several ways to approach futures perspectives. Kaskinen and Karjalainen introduced the following methods to study futures perspectives in the Workshop (2023): Trend analyses, Weak signals, Scenarios, Delphi-questionnaires, Workshops, group dynamics, Big data analyses, AI, algorithms, Modelling, simulations, Futures Wheel, and Pestec-analysis. The last two were also used in the Workshop (2023). However, in the Workshop in 2024 we utilized only Futures Wheel. Futures Wheel, invented by Jerome C. Glenn in 1971, is a method for graphical visualization of direct and indirect future consequences of a particular change or development**.** It consists of circles of changes and their consequences. It is a way to organize thinking and questioning about the future in a way of structured brainstorming (Jerome C. Glenn, 1994). It is best intended for joint ideation and open exploration of changing settings and new, emerging topics or weak signals. Weak signals are intuitions. We start thinking about changes much earlier than they are recognized and actualized.

Figure 1. Futures wheel by Jerome C. Glenn (1994). (The figure retrieved from https://www.mindtools.com/a3w9aym/the-futures-wheel)

In the workshops (2023 and 2024) groups of participants discussed the future on a theme ´Future of education and learning 2050´. Outcomes of the workshop in 2023 were the basis for workshop in 2024. The results of the first workshop (2023) discussions about future of education are following:

A) Educational system encouraging creativity
B) Teachers as therapists
C) Technology
D) Change of learning environment
E) Nature of future learners

In the workshop (2024) each of the five groups (of 4-6 persons/group) selected one of the above listed topics (A – E). One group chose the theme "Technology", another discussed the theme "Nature of future learners", and the other three groups discussed the theme "Teachers as a therapist". Each group discussed their topic from three points of view with the help of the following questions:

1. What are the kind of working-life, generic or academic competencies **student teachers** need in their future work and life? (inner circle)
2. What are the kind of competencies/methods **teacher trainers** need to equip future teachers? (second circle)
3. How do you think Competency-based Curriculum (CBC) in **higher education** should react to these potential expectations and changes? (outer circle)

The following chapter describes the results of the participants' discussions.

4. Findings

Technology

The first group considered what kind of generic or academic competencies related to "Technology" the teacher students will need in their future work and life. In addition to competences directly related to technology such as technology integration skills, digital pedagogy skills, data and digital literacy skills and online teaching skills, other skills for example, problem-solving skills, collaborative skills and the ability to act ethically emerged in the discussions. Next, the group reflected on the skills needed by the teacher trainer in relation to the technology theme. Now, pedagogical skills that are not directly related to technology were emphasized in the competences. For instance, the ability to make pedagogical innovations, coaching and mentoring skills, pedagogical competence, cooperation and communication skills, assessment and feedback skills, and cultural competence were mentioned. In addition, the group considered that teacher trainers need technological skills in research and evaluation. Finally, there was the question of how CBC of higher education should react to these expectations and changes. The answer was, among other things, the integration of the use of technology into the curriculum, the acquisition of the necessary infrastructure, new tools for trainers, the formation of policies, and research and evaluation on the subject.

Nature of future learners

The second group discussed the skills needed by teacher students in relation to the theme "Nature of future learners". The reflections revealed a vision that teachers guiding future learners need more innovativeness, flexibility, adaptability, creativity, independence and self-efficacy. These reflections convey the idea that the future learner will also differ significantly from current learners. In the second phase, it was again discussed what the corresponding skills needed by the teacher trainer would be like. Now digital literacy, open-mindedness, learner-centeredness, as well as competence in modern teaching methods such as flipped learning and case-based learning emerged. Communication skills such as active listening and verbal and nonverbal skills were also mentioned. The competence of inclusiveness, problem-solving skills, environmental awareness and soft skills, were also seen as important. In addition, the group saw financial literacy and awareness of legal issues as salient competencies of teacher trainers. These reflections also anticipate future changes in both the learner and the teaching. Finally, the group also thought about how CBC in higher education should respond to these expectations and changes. The solutions proposed included reform of university curricula, staff training, infrastructure improvement, increased cooperation on many levels, management of change, quality management and financial literacy.

Teacher as a therapist

The last three groups discussed the theme of "Teacher as a therapist". In the discussions, empathy, emotional intelligence, good listening skills, motivation, responsibility, ethics, respect and cultural sensitivity, among other things, became important skills needed by the teacher student in their

future work. Critical thinking, problem solving, and creativity skills were also mentioned. The reflections reveal the need to expand the role of the teacher in the future, as factors influencing learning are viewed more broadly. As for the skills a teacher trainer will need in the future, role modeling for future teachers was highlighted. In addition, the discussion participants particularly saw 4C skills, i.e. creativity, communication skills, critical thinking skills and collaborative skills as important to the teacher trainer. Furthermore, a teacher trainer, as well as a teacher student, were also thought to need skills to take a wider role as a teacher. This became visible in many reflections on the skills needed in the future, such as listening skills, empathy, flexibility, motivation skills, skills to prevent bullying, and inclusion skills. On the other hand, even with this theme, the teacher trainer was expected to need a lot of digital teaching skills as well as extensive pedagogical skills.

How, then, should the CBC of higher education respond to these expectations and changes? There was a lot of discussion in the groups about the need for different resources, including funding for all students, and support for higher education infrastructure was required. In addition, there would be a need for additional staff training, and the CBC of HE should be reviewed, as well as guidelines should also be drawn up for higher education institutions in relation to the theme. Furthermore, parents should be better involved in supporting and monitoring students' studies, and more open and prompt communication was hoped.

In summary, all small groups, regardless of their initial prompt, came up with similar, overarching ideas of what skills both the student teachers and teacher trainers need (Table 1 below). For instance, both need technology relates skills, problem solving skills, good interaction skills, pedagogical skills. In addition, the teacher trainers need to be able to see the wider context in which teachers work. The CBC, on the other hand, needs to be able to handle and lead the change and is expected to support the reform of policies and infrastructure that supports the change.

Table 1. A summary of the results from the workshop (2024)

Skills needed by the teacher students	Skills needed by the teacher trainer	What is needed from CBC of higher education
Technology related skills • technology integration skills • digital pedagogy skills • data and digital literacy skills • online teaching skills Problem-solving skills, flexibility • innovativeness • flexibility • adaptability • creativity Interaction skills • collaborative skills • empathy • emotional intelligence • good listening skills Ethical skills • the ability to act ethically • respect and cultural sensitivity Professionalism • critical thinking • motivation • responsibility • Independence • self-efficacy • skills to take a wider role as a teacher	Technology related skills • technological skills in research and evaluation • digital literacy • digital teaching skills Problem-solving skills, flexibility • creativity • flexibility Interaction skills • collaborative, cooperation, and communication skills • cultural competence • open-mindedness • soft skills • listening skills • empathy Pedagogical skills • pedagogical competence, competence in modern teaching methods • ability to make pedagogical innovations, • coaching and mentoring skills, • assessment and feedback skills • learner-centeredness • motivation skills • inclusion skills, skills to prevent bullying • role modeling for future teachers • skills to take a wider role as a teacher Awareness of a wider context • environmental awareness • awareness of legal issues • financial literacy	• management of change, cooperation on many levels • the formation of policies • the integration of the use of technology into the curriculum • the acquisition of and support for the necessary infrastructure • curriculum reform • support for staff: tools for trainers, staff training • research and evaluation on the subject • quality management • financial literacy • funding for all students • review of the CBC of HE and creation of guidelines • better parent involvement • open and prompt communication

Conclusion

The discussions in the groups drew a picture of the changing role of technology in teaching, the nature of the future learner, and the widening role of the teacher in the direction of the therapist. All these changes also reflect the skills needed by student teachers and teacher educators, and the need for higher education curriculum to respond to expectations and changes. The discussions highlighted the growing need for technological skills, understanding of learner-centeredness, social skills, and the need for resources, training and guidance, among other things. The groups' reflections are in line with the future skills listed in the OECD Learning Compass 2030 (2019), including technological skills, knowledge capabilities, as well as critical and creative thinking. The much-thought-out "teacher as a therapist" aspects emphasized the growing need for social and emotional skills in the future that are also supported by the OECD report. In addition, the need for problem-solving skills in the future anticipated by the debaters with the ability to resolve tensions and dilemmas mentioned in the OECD report's transformative competencies.

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