

1.3.2019

Schools

children and young people

eds.

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Welcome to exploring futures!

Welcome to Futures Day! We're delighted that you have decided to join us on this journey of exploration into alternative futures!

The future is constantly present in our daily life, influencing our actions and our decisions, whether consciously or subconsciously. For this reason it's important that we keep an open mind when imagining the future and that we critically follow the public debate about the future and prevailing images of the future.

The Futures Day provides useful tools for the development of *personal futures awareness and futures literacy*. These cards are intended as classroom aids for teachers, helping you to design your very own Futures Day. They provide guidance and direction in imagining and visualising different kinds of futures or in organising a classroom discussion about some specific theme, such as the ethics of artificial intelligence. From the teacher's point of view the study of futures can indeed be seen as a game of possibilities and probabilities where young people's imagination and creativity are allowed to run free.

The Futures Day is a global event and therefore we hope you will share your impressions and experiences on social media under the hashtag *#futuresday*.

We hope you have an interesting and inspiring Futures Day!

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How to use the Futures Day cards

We have produced this set of cards to support your work in the classroom and to make your journey of exploration into futures as successful as possible. This does not mean to say that you have to follow these cards literally, or that there is just one right way to organise your Futures Day. On the contrary, you can and should use all the Futures Day materials based on your own needs and interests.

The cards are divided into **four** categories and **colour coded** as follows:

The orange cards give an introductory welcome to the Futures Day, explaining how the cards work and giving tips on constructive futures dialogue.

The pink cards provide an introduction to the basics of futures thinking, which lies at the heart of futures learning and teaching.

The blue cards will run you through the process of studying futures, from scanning the horizon to creating a vision. You should dedicate at least 2–4 lessons to introducing and discussing this process. However you can also choose to focus on individual methods.

The green cards provide an introduction to five different future phenomena. You can use these cards in shorter term work, for instance during one lesson. The methods described in the blue cards are useful for a more in-depth exploration of these green-card phenomena, but there are also set classroom assignments that you can use in whatever manner that suits you best.

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Tips for exploring futures

Classroom explorations of futures should bear in mind the following principles of constructive futures work:

- * It's both possible and worthwhile to study futures because it's easy and great fun.
- * There's no such thing as right and wrong in futures thinking, and therefore there's no need to worry about making mistakes.
- * A climate of trust and confidence, playfulness, a sense of fun and humour, and experimenting and blundering are all central to exploring futures.
- * The future is open to countless possibilities, so there should be no restrictions on the imagination.
- * The exploration of futures is very much about personal experience and insight.
- * One size does not fit all: freely apply the methods of futures thinking according to your own needs and interests.

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Tips for futures dialogue

Classroom discussions about the future should also bear in mind the following principles of constructive futures dialogue:

- * It's also important to share and exchange views and experiences, otherwise thinking about the future may seem all too overwhelming.
- * The purpose is not to debate, persuade or win others over about one's own views, but to give equal space to different points of view and to build new understandings about the matter in hand.
- * Futures thinking is not based on hard facts alone, but emotions, tacit knowledge and intuition have an equally important role.
- * Respect each other and show equal appreciation for everyone's futures thinking.
- * Don't shy away from addressing emerging conflicts and try to search out issues that remain hidden.
- * A good way to conclude might be to discuss the thoughts and insights elicited by futures thinking in each participant.

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Why is futures thinking so challenging?

We humans are not, by nature, very good at imagining the future. We tend to predict our own immediate future based on our immediate past. Our capacity for futures thinking is furthermore often constrained by various latent thought distortions and often unconsciously held images and perceptions about the future and about what is possible and probable in the present and the future. Indeed the way we think about the future is typically too vague and too limited to be useful. As futures scholar Noel Gough has suggested, we often consider futures in terms of:

- * tacit inferences: we don't actually discuss the future, but assume that it will just appear all by itself;
- * token invocations: we discuss the future in terms of stereotypes and clichés, but these have very little real detailed content; and
- * taken for granted assumptions: we discuss the future or a few alternative futures as if they were matters of course, as if there were no other options.

It is important to be aware of one's own assumptions about the future, to bring them out in the open and to review them critically. It's also good to recognize that we easily tend to ignore things in which we are not interested, which we don't understand or which are not socially acceptable. Indeed in futures thinking it is important to recognize the systemic nature of the world around us: everything is interconnected and nothing happens in a vacuum.

The aim in developing our futures thinking is to learn how to stretch our thinking, to take a broader view on the future and to exercise our capacity for imagining the future based on decisions that are made in the current moment. After all it is these decisions that create the future, so it is important that we can imagine the future with true openness rather than lock our future into the constraints of our own mind.

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Principles of studying futures

From an education standpoint the future is a fascinating subject. Both students and teachers can engage and immerse themselves in the exciting world of futures thinking. There are no rights and wrongs in futures thinking. All that is required is to keep in mind the key three key principles advanced by pioneer of futures research Roy Amara:

1. The future cannot be predicted because there does not exist any one specific future, but there are countless alternative futures.
2. The future is not a predetermined, fixed or inevitable fate – even when we are unable to see any alternatives to that future.
3. The future can be influenced because it is shaped by our acts and choices in the current moment.

The future does not arrive ready-made, instead we make the future. What have you done today and how will it shape the future?

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Alternative futures

Futures research is not about predicting the future, but about trying to find out

1. What is possible,
2. What is probable, and
3. What is desirable and undesirable in the future.

The exploration of **possible futures** is by nature an open-ended exercise. The purpose is to break loose from the constraints of the current moment and to creatively and imaginarily explore what possibilities are open in the future. In the case of **probable** futures the focus is turned to examining which of the futures identified as possible are in fact probable. The next step is to discuss the values on the basis of which the future is defined as **desirable** or **undesirable**.

The utility of exploring futures is determined not on the basis of the “accuracy” of future predictions. Instead, the exploration of alternative futures can help to identify a wider range of possibilities in the present time, to seize these possibilities and to work for a better future. The exploration of alternative futures will also make us better prepared to meet the future because it will no longer take us by surprise to the same extent.

What kind of futures are possible? Why is some future impossible? What futures are probable? Why is some future probable or improbable? What kind of future is desirable? Why? For whom?

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Introducing futures

10 %
of total
allocated
time

Aim After the warm-up discussion, the next step is to set the general framework, i.e. to define the focal theme, future horizon and level of analysis

Grouping Small groups or whole class

Materials required Notebook if considered necessary

Examples of how to arrange class

- Have a discussion in class or set up an assignment
- Choose a focal theme, level of analysis and future horizon

A good way to start the process is by attuning students to the subject of futures. Engage your students in a discussion about: How can we know about the future? Is it possible to shape and influence the future? Which aspects of the future can be shaped and influenced and which cannot? How do students orient to the future? Are they interested, scared, apprehensive about the future? How does this personal relationship to the future affect them in the current moment? Once the students are attuned to the futures frequency, the next step is to choose a specific phenomenon and to consider the future of that phenomenon. You can utilize the green cards in choosing a focal theme.

1 Choose a focal theme or phenomenon

Students should ideally have a personal relationship to the focal theme. For younger students in particular it's easier to imagine the future through their own selves and the immediate environment, whereas older students already have the capacity to take a global view on the subject.

2 Choose a level of analysis

- Own, personal future
- Future of immediate community and environment
- Future of the world and humankind

Choosing a level of analysis will help to narrow down the subject. In practice different levels intersect and overlap: after all we're part of the world and the world is part of us.

3 Choose a time horizon

All that has not yet happened belongs to the future. However it's quite a different matter to discuss what is going to happen 1, 10 or 100 years from now.

Perhaps the best way to gain a sense of the future horizon is to think back in time: to consider what the world was like 1, 10 or 100 years ago.

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Exploring futures

Aim: To introduce the concepts of weak signal, trend, megatrend and black swan and to discuss these forces of change

Grouping Individual work, small groups or whole class

Materials required Own choice of method for identifying forces of change, Horizon scanning wheel -worksheet, post-it stickers

Examples of how to arrange class

- Introduce different forces of change and ways of identifying them to students
- Spend enough time searching for forces of change
- Compile forces of change into Horizon scanning wheel -worksheet

35 %
of total
allocated
time

Once you have chosen a focal theme, the next step is to **scan the horizon:** to identify the forces of change that are impacting the focal theme at the current moment and that will shape it in the future. These forces of change include weak signals, trends, megatrends and black swans. Forces of change can be identified by observing one's own living environment and the current debate on what is happening in society and the wider world.

Megatrend = a major path of development, an identifiable cluster of phenomena with a clear direction of development

Trend = long-term change moving in a clearly identifiable direction

Weak signal = event or phenomenon that can be considered a first expression of change or a new trend in development

Black swan = an unexpected and unlikely factor of change that has significant effects and that suddenly pushes a chain of events onto an uncertain path

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Interpretation of futures

Aim To identify desirable, undesirable and probable futures based on the collected factors of change

Grouping Small groups

Materials required Futures table worksheet

Examples of how to arrange class

- See the reverse side of the card, e.g. futures table
- Together with your students, go over the concepts of desirable, undesirable and probable future
- Introduce the futures table to your students
- Fill in the futures table worksheet one row at a time, considering the desirable, undesirable and probable futures of your focal theme

35 %
of total
allocated
time

Once you have scanned the operating environment it is time to move on to consider the implications of the change factors identified for the future of your focal theme. Use the futures table to help with interpreting the change factors. The table is used as a matrix in which to enter alternative images of the future.

For simplicity the alternative futures are here limited to a desirable, undesirable and probable future. The futures table makes it easier to examine these futures from different angles, in this case from the point of view society, the economy, people, technology and the environment.

For instance, the future of school in 2030 cannot be understood just by looking at the physical school building (environment), but it's also necessary to consider what is taught at school (society), what teaching methods are used (technology), who are being taught (people) and what teaching resources are available (economy).

Once the futures table has been filled in, select from each row one alternative future and combine them into a common image of future.

What kind of alternative futures are possible? Are some futures more probable than others? Which image of the future is the most desirable? Why and from whose point of view?

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Making futures

20 %
of total
allocated
time

Aim To create a common vision of a desirable future for a group, the class or the whole school and to consider how individuals can contribute to the attainment of that vision

Grouping Small groups or whole class

Materials required Depending on the method chosen for representing the vision

Examples of how to arrange class Together with your students, go over the concept of vision

- Compile your visions in the manner chosen
- Consider what concrete steps are needed to set this vision into motion
- Share the visions on social media under the hashtag #futuresday

A vision can be represented in any format, for instance by using artistic, dramatic or audiovisual means – or a combination of all these. In conclusion, you can discuss what kinds of steps and actions are needed in the current moment in order to set the vision into motion.

Once you have filled in the futures table worksheets and crafted different images of the future, it is time to develop a common vision based on the images. A vision is a description of a common desired state (e.g. a small group, the class or the whole school) one wants to reach by the end of a selected future horizon, for instance in 2030.

Vision checklist:

- a vision is concrete and descriptive but not too detailed and prescriptive
- a vision is coherent, logical and realistic articulation
- a vision allows for rapid flexibility in a changing world
- a vision inspires everyone to push in the desired direction

How can the vision be turned into reality? What steps are needed in the current situation in order to move towards your vision – at the individual level, at school level, and more widely in society? What actions and choices can you make even today in order to promote the attainment of the vision? What kind of obstacles might there be to the realisation of your vision?

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Future of work and skills

Work and skills requirements are in a constant state of flux in our society. Key drivers of this change include artificial intelligence, robotisation, automation and sharing and platform economies. Other underlying megatrends include climate change and population ageing. Some old jobs and occupations will change significantly, some will disappear altogether, and new ones will emerge to take their place.

Advances in technology are bound to reduce the number of routine jobs. People will be able to spend more time on creative problem-solving and collaboration with other people – whether via machines or without them. Rather than working for a traditional employer, people will increasingly share their skills and expertise via international digital platforms.

These changes in the world of work are not going to happen overnight: this is a long-term process of technological, economic, social and human change. But the need and demand for different skill sets may change quite rapidly. For individuals caught up in the whirlwind of change, the best source of security is provided by lifelong education, learning and skills development.

CLASSROOM ASSIGNMENTS

- Work has always changed. Have a discussion with your students about what kind of jobs there were earlier. Ask them to interview their parents and grandparents. Do these jobs still exist? How have they changed? And what might they look like in 2030 or 2050?

- Work is about solving other people's problems. Based on an examination of current megatrends, what kinds of problems can be expected in the future? How can these problems be solved? In other words, what kind of work will be needed in the future?

- In the future skills and know-how will gain increasing importance at the expense of degrees and certificates. Encourage your students to consider their own skills identity: what does their own skills profile look like and in what fields might there be a demand for these sets of skills in the future? One way to start this assignment is to get your students to ask their friends in class about their own strengths.

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Democracy and future generations

*Content in co-operation
with PALO research project*

The principles of democracy include the equality of all individuals and the right to self-determination. For this reason every citizen must have equal opportunity to influence decisions concerning themselves, for instance in the form of universal suffrage. This means that all citizens above a certain age have the right to vote in elections and that their votes have equal weight.

But what about future generations? Many political decisions taken today concern future generations, yet these people have no way to participate in these decisions. For example, decisions that are taken now about how to combat climate change will affect generations for hundreds of years to come. It is extremely difficult for political decision-makers and ordinary voters to imagine who will be alive then and what kind of world they will inhabit.

Future generations will suffer or benefit from the decisions that are made today. However the democratic ideal includes the notion that everyone affected should have a say in decision-making. How could the interests of future generations be better reflected in decision-making?

CLASSROOM ASSIGNMENTS

- Engage your students in a discussion about how they could influence decision-making concerning themselves, for instance in their school, community and family. In what matters would they want to have a say?

- Write letters about the future. Ask your students to imagine they are representing a future generation in 2090, for instance. What would this person want to say to today's decision-makers and people?

- Work together to come up with ideas for how decision-making could better reflect the interests of future generations. Should it be obligatory to evaluate "consequences for future" of each big societal decision? Should young people's involvement in society be promoted by lowering the voting age? Should a certain number of seats in parliament or local councils be allocated to younger people? What other ideas can you think of?

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Climate anxiety and hope

*Content in co-operation with
Environmental Researcher Panu Pihkala*

The global temperature has risen by one degree Celsius compared to the preindustrial era (1850–1900). Global warming cannot be halted, but the rise in temperatures can be limited to what is accepted as the critical threshold of 1.5 degrees. This requires that global emissions are sharply reduced by 2020 and that the world is emissions-free by 2050.

Climate change is such a major problem that it understandably raises many emotions. It is not always easy to talk about these emotions with other people, yet it is important for all of us to have some way of processing difficult emotions, otherwise the negative emotional energy may spill over and lead to depression and other problems. Retaining hope is crucial to one's own health and well-being.

Emotions can be processed in various ways. Often just giving verbal expression to what one is feeling can help to ease the emotional burden. Anxieties can also be alleviated by taking concrete action to address the problem concerned. Everyone can do something, but because no one can do everything, it's important to maintain a balance. There is no point draining yourself physically or overwhelming yourself with feelings of guilt and inadequacy.

CLASSROOM ASSIGNMENTS

- Engage your students in a discussion about the feelings they have about climate change. What feelings have you observed in one another? Do you want to talk about your feelings? You can work together to make paintings or collages expressing your feelings. Finally, you could exchange views on different ways in which to channel your emotional energies.

- Bad news are more likely to make the headlines. There is hope that the advance of climate change can be slowed, but we must be able to find the signs that this is happening. Scan the horizon (see card no. 11) to identify positive signals. What did you find? Summarise your observations in your class's own futures table worksheet.

- Climate change is a huge problem, but it can be solved. Select one hopeful signal (see the assignment above) and imagine a future where it has grown into a trend or megatrend. You can present the results in the form of future news headlines, for instance.

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Circular economy

*Content in co-operation with
Economic Information Office TAT*

We are living in a linear economy where we are continually extracting natural resources, turning them into products and then discarding them. Our economy is based on the overconsumption of natural resources. If consumption patterns throughout the world were the same as in Finland, we would need 3.6 worlds to meet the global consumption of natural resources. In order to slow the rate of global warming to the critical threshold of 1.5 degrees, it's essential that steps are taken to improve the efficiency of materials use.

It is clear then that there is a need for systemic change in our society so that economic welfare can be separated from the overconsumption of natural resources. The materials and energy extracted from nature can be put to more efficient use – and this would have both economic and environmental benefits.

Circular economy is based not on linear but cyclical thinking: on the long-term circulation of resources and materials in the economy. In circular economy, consumption is based not on the ownership of products but rather on using, sharing, renting and recycling services. This calls for a change of attitudes: rather than owners, we have to become users. Products and services have to be designed so that they can be repaired and re-used, using renewable and recyclable materials wherever possible.

CLASSROOM ASSIGNMENTS

- Select a product that is familiar to your students (e.g. a smart phone, a pair of jeans). Work together to find out what raw materials have gone into these products and how much. Can the product be repaired or re-used? Can the product be recycled, and is this happening?

- Observe the environment (e.g. school, home, city) and identify goods, products or facilities that are underutilised or causing unnecessary waste or loss. What did you find? Work on an idea for a product, service or solution that would make the use of these resources more efficient.

- Engage your students in a discussion about circular economy from the point of view of societal change more broadly. Who or which groups in society can most strongly contribute to the promotion of circular economy? What can you do personally? What have you done already?

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Artificial intelligence and ethics

Content in co-operation with
Guidance Specialist Sara Peltola

Artificial intelligence is computer software that is capable of performing tasks that may be considered intelligent, such as driving a car in traffic. AI is not created in a vacuum, but developed by humans for a specific purpose. Some AIs are based on machine learning, i.e. they are capable of making not only pre-programmed decisions but also independent solutions based on given mass of data.

The rapid development and diffusion of AI raises many ethical issues. For instance, the critical point has been made that many recommendation algorithms that shape our everyday lives tend to create bubbles of likeminded people and to drive people ever further apart. If in my social media feed I only get access to content that appeals to me or that I agree with, how well can I learn to understand people who take a different view? Indeed one crucial skill of the future is data literacy: a knowledge and understanding of how data is collected and utilised.

The development of AI can be regulated by legislation, but this is slow compared to the rate at which technology is advancing. On the other hand, notions of what is wrong and what is right may vary widely from one individual and one country to another. For instance, how would you feel about being monitored by AI in class or in your job, or your boss receiving reports about your level of activity or alertness? This is already happening in China. The development of AI challenges us to reassess our values and to consider what kind of society we want to build.

CLASSROOM ASSIGNMENTS

- Engage your students in a discussion about the areas in which they interface with AI in their own lives. What examples come to mind? What kind of decisions does AI make on their behalf?

- Divide the class into small groups with assignments to explore the meaning of "AI", "machine learning", "big data", "algorithm", "neural network" and "deep learning". Have each group explain these meanings to class in their own words.

- In the future we will have increasing interaction with AI and robots. But can AI have emotions? And is it okay to bully a robot? Watch the Youtube video The Robot Bully of Boston Dynamics and talk with your students about the feelings it arouses in them.

Thursday

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We hope you have an inspiring Futures Day!

Don't forget to share your experiences in social media with **#futuresday**

If you have any questions please get in touch at info@tulevaisuuspaiva.fi

These materials are developed by the Finnish team of Tulevaisuuskoulu, Finland Futures Research Centre, Futures Specialist of Helsinki.
Thanks for sharing!

The English translation of this material is provided by UNESCO Chair in Learning Society and Futures of Education -project at Finland Futures Research Centre, University of Turku.

Translated by David Kivinen, Transmasters Ky

The translation of these materials into other languages has been done by members of the Teach the Future community.

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