D3.1 Resources for enhancing RRI understanding and prompting debate on societal issues in the curriculum for early stage students

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Introduction

EnRRICH is a Horizon2020 project with 13 partners across 10 countries. The purpose of EnRRICH is to raise awareness of Responsible Research and Innovation (RRI) within higher education and to assist academics, students, and researchers to become RRI proficient. A research project that fulfils RRI criteria is one that actively involves a variety of stakeholders. RRI should be understood as:

*a strategy of stakeholders to become mutually responsive to each other and anticipate research and innovation outcomes underpinning the “grand challenges” of our time for which they share responsibility* (Von Schomberg, 2013: 1).

*RRI entails a dynamic and iterative process by which all the stakeholders involved in the research and innovation practice become mutually responsive and share responsibility regarding both outcomes and process requirements so as to align research and innovation agendas with societal needs and concerns* (Heras and Ruiz-Mallén, 2017: 1-2).

A key objective of the EnRRICH project is to improve the capacity of students and staff in higher education to develop knowledge, skills and attitudes to support the embedding of RRI in curricula by responding to the research needs of society as expressed by civil society organisations. Work package 3 was responsible for developing and piloting RRI educational materials to support academic staff to integrate RRI in their disciplines and to produce a range of resources to sustainably embed RRI in curricula.

If you are new to Responsible Research and Innovation but are keen to learn more and subsequently introduce the concept in the classroom, there are a number of websites and resources that develop your understanding of RRI. Becoming familiar with RRI terminology and theory will help you get the most out of this document and the enclosed case studies. These sites and resources form part of the selected reading list towards the end of this document. In particular, readers are encouraged to familiarise themselves with the EnRRICH Tool for Educators (Tassone and Eppink, 2016), which provides readers with an overview of RRI terminology and the development of the RRI policy agendas as well as introducing *RRI in higher education design principles*:

- **Principle 1 Education for Society**
- **Principle 2 Education with Society**
- **Principle 3 Education to whole persons**

The information provided in this document is primarily linked to Principle 1, Education for Society. These three principles provide guidance on how to resign assessments, activities, courses and programmes in order to develop students’ RRI competences. Students participating in courses that utilise the following cases studies will be supported to consider the broader issues and concerns faced by society and how their discipline might address these.

Responsible research and innovation (RRI) is, for the most part, new to early-stage students. Students, through their studies and research dissertations, will perhaps be familiar with concepts such as ethics, research integrity, gender equality, open access, sustainability, science education, and social justice. However, some students may not be yet have been exposed to RRI during their learning and need to have their introduction to RRI scaffolded. The case studies in this deliverable were used by partners to
help students reflexively engage with RRI, and on how research and practice within their discipline could incorporate openness and transparency, anticipation and reflection with the research design and innovations processes. Working with students who are entirely new to RRI can be both challenging and rewarding for both students and educators! To help pique students’ interests and to make connections between RRI and their discipline, research and their practice, it is important that students are incrementally exposed to RRI and are provided with stimulating examples to which they can respond and discuss the relevance and applicability of RRI.

To this end, the case studies profiled in this deliverable, have been trialled and refined by members of the EnRRICH project to help scaffold students’ learning and development. Through the use of examples, exercises and techniques that are, for example, gripping, contentious and colourful, we have been able to encourage students to debate and negotiate the complexities of research, innovation and development and to wider policy and political initiatives. For example, EnRRICH members built links between RRI and the European Commission’s Grand Societal Challenges, the United Nation’s Sustainable Development Goals and national policies on community-university engagement.

These case studies are featured because of their applicability and because they feature a range of provocative topics. Some of these resources will be more appropriate for one-off RRI workshops with students (e.g. Case Study 1) where the educator has limited time to gain an understanding of RRI. Other resources may work best if introduced as part of a wider module or programme where the educator wants to explore topics such as policy development (e.g. Case Study 3), or to open dialogue on complex societal challenges (e.g. Case Study 4).

The following case studies are distilled, summative versions of the prompts used by EnRRICH members and their colleagues. The Appendix section provides more comprehensive information to aid readers to adapt and trial the tools in their own settings.
How-To Guide

To prompt debate and to enhance knowledge on societal issues and RRI, the following table presents a suggested blue-print for educators when introducing prompts featured in case studies 1 – 5. The how-to guide is intended to guide educators to understand how these prompts fit within, and are useful for, exploring RRI in the classroom. You will also see that several of the case studies provide how-to guides that are specific to prompts featured in the case studies.

Table 1.

1. **Organise the students into groups of 5-6 and arrange the room layout for optimal group discussion.** Where class size or the learning space does not support small group discussion alternative approaches can be utilised as detailed in the ‘Key Learning’ section.

2. **Use an ice-breaker to get students talking to each other.** This signposts to the students the need to engage in the discussion.

3. **Acquire an understanding of the groups’ knowledge of RRI through a Classroom Assessment Technique (CAT) (Angelo and Cross, 1993), e.g. a Background Knowledge Probe.** These can be completed silently on paper and then shared with neighbour or posted on the wall. This approach enables more introvert students to provide feedback.
   - If RRI knowledge is limited, make a connection to areas where students are more confident, such as ethics and research integrity.

4. **Introduce RRI**
   - Provide a definition(s) of RRI
   - Identify topics or news stories that demonstrate the need for an RRI framework
   - Ask students to put forward examples from their own discipline or from their personal and professional life

5. **Introduce the prompt/resource**
   - Lead students through the case study
   - Use the discussion points provided to stimulate interaction and enhance understanding

6. **Scaffold and synthetize students’ understanding of RRI**
   - Explore more advanced RRI discussions, e.g. RRI process requirements and policy agendas (see RRI Tools; von Schomberg, 2013)
   - Use RRI as a framework to examine elements of the case study that students:
     - Most strongly connected to
     - Found challenging to grasp

7. **Evaluate and further students’ understanding of RRI by introducing a Classroom Assessment Techniques, e.g. “The One-Minute Paper” (see Angelo and Cross, 1993).**

8. **Direct students to resources and links**
   - RRI websites and journal articles
   - The University’s Science Shop (or equivalent, if applicable)
   - Local and national community–university engaged research activities, policies and projects
RRI Resources from Prompting Debate
Case Study 1 material provided by University College Cork, Ireland

iPal – A Robot for Children
A topical news item on a technological development connected to a societal concern

This resource has cross-discipline appeal because it connects with students and researchers from disciplines such as computer science, data science and analytics, early childhood, psychology, electronic engineering, law, marketing and communications, social work and related disciplines.

This case scenario exemplifies how RRI can be used to illustrate the RRI process requirements and policy agendas (www.rri-tools.eu).

Background
An article was published in The Guardian newspaper on 29 September 2016 titled ‘This is awful: robot can keep children occupied for hours without supervision’. The article explores the launch of the iPal, a robot for children, at a prominent robotics exhibition in San Jose, California. The iPal creator, attracted controversy by suggested that the robot could keep children (as young as aged 3) occupied for a period of time, unsupervised, and would complement existing child-care models for parents.

Competencies explored using this scenario
You can create a multi-stakeholder debate by using the exercise provided in Appendix A. Alternatively, you could circulate the article to students and guide an in-class discussion of RRI-related themes relevant to your discipline. This resource is effective in enhancing understanding as participants can weigh-in with contextual and situational considerations from their respective disciplines which can, in turn, expose participants to the complexities of real world challenges and underline the necessity for multi-stakeholder approaches. It is particularly useful for early stage students as disciplinary expertise is not necessarily required; students can engage in the discussion with their ‘citizen hat’ on.

RRI Prompts for educators:
- Identify stakeholders connected to this development
- Anticipate potential implications of the iPal for children
- Discuss potential economic and policy implications
- What are the gender considerations in this scenario?

See Appendix A for iPal links and multi-stakeholder role-play exercise
Policymaking Simulation Exercise
A simulation exercise to emphasize how policy decisions are made

This resource exemplifies the necessity to understand and include stakeholder perspectives when making policy decisions. It encourages participants to reflect on RRI considerations such as the potential implications of decisions and to plan for outcomes that uphold the values of wider society. A variety of different contexts and conditions can form the backdrop to the exercise to illuminate the complexities and processes associated with public policy development.

Description of resource and competencies explored
This exercise creates a realistic environment where the frustrations and constraints of real world policymaking are experienced. Students are allocated into groups; each group represents a different stakeholder. Ideally at least one person from the relevant stakeholder background joins the group and contributes context from their professional practice. Students are given a short case study and some background information about the problem. There is a facilitated discussion at the end of the session encouraging students to reflect on the process of policymaking. Sectors involved can include Business and Economic Development, Health and Social Care, Planning, Housing and Environment and Law.

This tool is designed to help students with an interest in decision making better understand the forces and drivers for change operating in a typical system and how the many different interests involved interact, and to exchange knowledge from their own discipline and practice. It helps students to understand the relationship between policymaking and RRI, in particular, that effective policymaking processes are an essential element in accomplishing desirable future outcomes for society.

Sample text from policymaking simulation exercise:
Stakeholders are meeting to draw up a management strategy for your area, which needs to take in to account:

- Threats from environmental conditions and changes;
- The need for jobs and housing for local people;
- A poor infrastructure including roads, bridges and sewerage;
- Retaining and enhancing the area as good place to live, work, study and visit;
- The impact of Brexit because of area’s proximity to the border, and
- Finite public-sector resources.

See Appendix B for links and Policymaking simulation exercise
Case Study 3 material provided by University College Cork, Ireland

**Botanical Sexism linked to increased asthma levels**
A cautionary tale of how poor planning in urban landscaping led to increased allergies

The Botanical Sexism scenario examines a period of time when a course of action was set in motion which altered the Californian eco-system considerably. It churns up burning (RRI-related) questions. This tool highlights the significant consequences of inadequate stakeholder engagement and the fallout arising from poor anticipation and reflection. Although the content is primarily rooted in the botanical sciences, this resource has universal relevance.

**Background Information**
In the 1949, the U.S. Dept. of Agriculture published the following statement: “When used for street plantings, only male trees should be selected, to avoid the nuisance from the seed (from female trees).” This resulted in an abundance of male trees being planted. Fast forward a few years and these male trees start to disperse more pollen into the atmosphere, contributing to a sharp spike in allergy and asthma levels. Ogren (2015: 1), writing in Scientific American, argued that:

*Female trees, even if they make seeds or pods, have much to offer. A female tree may have millions of individual flowers as she blooms. These flowers are slightly sticky and feathery, and they produce a small negative electrical impulse. Pollen from male trees tumbles about in the air and picks up a positive electrical impulse. When you have negative and positive the result is mutual attraction. The pollen grains do not get to the female trees by accident; rather they are drawn there by this mutual attraction.*

**How-to guide**
Introduce the scenario to students by explaining what occurred. Encourage students to discuss the elements that led to this situation and to problematize what could have been done differently. Introduce the RRI process requirements and encourage students to reflect on how anticipation, diversity and inclusion etc. could have resulted in more desirable outcomes.

**Competencies Explored**
No prior knowledge of botanical sciences is required; early stage students are encouraged to participate using their own world views and experiences. Students learn to understand effective decision-making and policy-making processes and to reflect on how present actions alter future scenarios. Students build their knowledge of RRI theory in an accessible and interactive way.

**Potential Discussion Questions:**

- In your discipline, can you point to any projects that has or could have adverse outcomes?
- How could an RRI approach generate alternative outcomes?
- Identify stakeholders that should be involved for socially desirable outcomes

See Appendix C for Botanical Sexism links and exercise
Heightening Understanding of HIV Prevention
A debating game to discuss HIV prevention and treatment

In this debating game, learners get the chance to discuss ways to prevent HIV, question who has access to treatment and discuss how to overcome the stigma and discrimination of people with a HIV diagnosis. This activity is designed to facilitate dialogue about the ethical, legal and social aspects of research into HIV and AIDS. This tool stimulates in-depth discussion on topics less understood by the public and highlights the negotiation process necessary to grasp complex social health developments.

How-to guide
In this resource, learners are presented with statements about HIV and AIDS. Once individuals have thought about their particular statement, they must place the statement along the agree/disagree continuum. Students then collectively engage in a cycle of discussion and reflection in response to the statements. At the end of the discussion, each group should have a continuum which they mostly agree with. Students bring their own discipline and ‘other life’ lenses to the game and thereby further each other’s understanding through constructive debate.

Competencies Explored
This resource facilitates students to debate ethical issues and make research-based decisions, through engaging with robust, current scientific knowledge. More widely, games such as these can help build a scientific culture among students, educators and researchers.

The exercise illuminates the necessity to share and discuss public health developments regularly, in an inclusive manner, and for stakeholders to exercise reflexivity with regard to society’s most pressing health concerns.

Sample discussion cards:

Discussion Card 1
“Men who have sex with men should not be allowed to donate blood, to minimise the risk of HIV transmission”

Discussion Card 3
“When applying for a job as a doctor or nurse, no-one should be obliged to disclose their HIV status, even if their work involves risk of transmission”

See Appendix D for links to HIV debating game and many other games
Time-Scale Exercise to Explore Future Scenarios
Arranging activities in chronological order to obtain a desirable future

In this interactive exercise, students are provided with a series of actions, decisions and developments that took place over a number of years which led to a positive change. These actions are presented as statements and students are challenged to identify the chronological sequence of the actions that will lead to the desired goal. Through this RRI prompt, students gain an appreciation of the deliberate, well-timed and considered actions necessary to create desirable futures.

Exercise description and how-to guide

This exercise uses time-scales to illustrate the journey towards accomplishing a positive future outcome (e.g. the transition (town) initiative). To use, educators acquire an existing case study connected to their discipline where a group has set out a number of sequential steps that take place over a period of time. Use a large blank surface, such as a wall, to create a time continuum, 2000 to 2010 for example. Present the individual steps, as written statements, to students in an illogical order and give them time to negotiate each step’s position along the continuum. The exercise is completed when all statements are placed in the correct logical order.

Prompts for educators

What influenced your decision to place this event at this point in the continuum?
Why is it important for this activity to take place at start/middle/end?
Identify and discuss current examples where a group/area is trying to accomplish a desirable future outcome?

Competencies explored

Students explore the complexities of accomplishing societally beneficial outcomes and the myriad considerations that need to be taken into account. They are exposed to the wide range of stakeholders involved in creating positive changes and get an appreciation for the time it takes to produce tangible, sustainable outcomes. It touches on many elements of Responsible Research and Innovation, such as: governance, public engagement, diversity and inclusion, and responsiveness and adaptive change.

See Appendix E for links to Time-Scale Exercise and Resources
Key Learning

The case studies profiled here have been developed, trialed and refined by members of the EnRRICH project team. They provide a range of resources, ideas and tools for engaging early-stage students in discussions around provocative societal challenges and the related implications for responsible and socially responsive research and innovation. The preliminary findings of the EnRRICH project indicate that educators value teaching resources that move RRI from an abstract, distant concept to a lively, real-world scenario. These case studies enable students to define RRI and describe its relevance to their discipline, their research and future careers as well as argue the necessity for research and innovation developments to have more socially desirable outcomes.

There are several considerations around the use of these resources and these are captured under the following headings:

Classroom logistics

- The case studies have been trialed successfully in research methods courses, ethics courses, professional training courses and seminars on the frontiers of knowledge. They can be used to frame the learning from the outset of a module or period of learning, or as a summative activity.
- The case study methodology is best suited to classrooms of 30-40 students (max.). In larger classrooms students would require additional prompts and the relaying of a group response rather than individual responses.
- Active learning approaches such as the use of case studies work best in more flexible classroom settings, which allow students to work in groups. Fixed seating and inflexible classroom settings can be transcended by use of pair-share discussions or by organizing students into smaller groups in clusters throughout the room.
- The case studies can also be used in online or blended learning, however synchronous discussion boards or the use of live chats would ensure greater engagement with the subject matter.

Assessment and feedback

- When addressing the responses to the case study prompts, educators are encouraged to use open questions to encourage further discussion and to align with higher order learning such as analysis and synthesis of knowledge.
- The classroom activities should be organized to allow students to respond in multiple ways. For example, they may write a short reflection (One-Minuter paper), answer an in-class poll or engage in a group discussion.
- Students may choose from a number of assignment options following the session such as reflective writing on the topic, or the development of an audio or video artefact to demonstrate their learning from the session. These outputs could be used as a prompt for the next session or as a summative assessment.

Extending the learning
• These case studies do not require a high level of knowledge and familiarity with the subject matter and consequently can be more attractive to early stage students. Educators can engage more experienced students in discussions that require a more technical understanding of the subject matter, or ask more challenging questions that relate to the students’ own research experiences.

• Educators could consider an alternative setting in which to explore the material. For example, if your organization has links with CSOs (civic society organizations) or local community groups, the case studies could be discussed off-campus with a range of stakeholders. Moving the lesson/workshop from the familiar classroom setting into a community/public setting may help students connect more with the material.
Appendix
Appendix A: Case Study 1– iPai – A Robot for Children

iPal – A Robot for Children
A topical news item on a technological development connected to a societal concern

Links:
The article referenced in Case Study 1:
The iPal robot website:
https://www.ipalrobot.com/

Exercise
iPal Multi-Stakeholder Role-Play Exercise (created by Dr Kenneth Burns, Dr Ruth Hally and Dr Catherine O’Mahony, University College Cork, Ireland).

Background and Timing
iPal robot brought to you by Robots4U Inc. This exercise will take 45– 60 minutes.

Instructions
1. Split group up into 4 groups of no larger than 4.
2. Introduce yourself to your peers:
   a. Group A: Robotic engineers (male), managers (1 male and 1 female) and software designers (male) – Your CEO’s ambition was to fill a niche in the market for parents who need children minded between the times of after school and when parents return from work. The CEO believes that robotics and Artificial Intelligence are a good fit. You were part of a special team that was brought together to design this robot. You have just completed the robot and are meeting to discuss its launch to the public.
   b. Group B: Social worker, occupational therapist, health care professional and teacher. The robot has now been designed and parents in your local community robots to support their childcare requirements. This development was raised by the social worker at a multi-professional meeting in your local health centre. What are the implications for you as professionals arising from this research “output”?
   c. Group C: Parent (who uses the robot), parent (who does not use the robot), child care minder and grandparent. The product has now been designed. You all meet at a family gathering and are discussing the new robot. Is this robot a legitimate/effective support to parents for child minding?
   d. Group D: Politician, journalist, policy-maker, and a representative from a civil society organisation (community group) addressing children’s issues. The journalist has phoned all of three of you to ask about this new product and its impact on communities and society. What is your response to the journalist and what are the immediate policy actions required?

Each group has x minutes to role-play and must make a short presentation (in role) to the wider group. All of the other groups are asked to discuss in role and write 3 points in response. They then give this feedback. Then group B present. Repeat. Each group (while staying in role) has an opportunity to respond to each presentation.

Wider RRI discussion questions
1. Inclusivity and diversity: what groups/individuals involved in the design of this product? Were public stakeholders provided meaningful opportunities to contribute and influence the robot’s design and development?
2. Ethics: what are the ethical consideration of this research project?
3. Anticipation: what are the anticipated implications for: the welfare of children; those employed in childcare roles and the childcare profession(s); and family life and cultural development from this research project?
4. Gender: what are the gender components to this research design project?
5. Openness and transparency: feedback to public / citizens etc.
6. Responsiveness and Adaptive Change: Is this robot a response to our changing needs and behaviours? How could the company behind the creation of the robot be responsive and adaptive to emerging knowledge, norms and behaviours of society?
7. Governance and Reform: What role do international governments have to play in developing policy and parameters to mitigate against possible negative outcomes?

For more information contact ruth.hally@ucc.ie
Appendix B: Case Study 2 – Policy-Making Simulation Exercise

**Policymaking Simulation Exercise**

A simulation exercise to emphasize how policy decisions are made.

Queen’s University Belfast recruited John Eversley and Jude Stephens, with support from their colleagues, to facilitate this policymaking simulation exercise.

**Links**

Details of the workshop are available here: https://www.qub.ac.uk/research-centres/TheInstituteofSpatialandEnvironmentalPlanning/Impact/CurrentNewsEvents/2014NewsArchive/

More on this methodology: http://webs.wichita.edu/depttools/depttoolsmemberfiles/carolynshaw/Shaw%20in%20Compendium.pdf

**Scenario**

X is located in the south of Northern Ireland, close to the border with the Irish republic. At the Southern end is the town of x. It is close to the Irish border. It is an expanding town and there is pressure on housing. Private developers are keen to build more houses for sale there and the Housing Executive want to build more social housing. The only available land of any size is on floodplains. Most of the shoreline is very attractive and there is a strong tourism sector based on fishing on the lough, ancient ruins, foot, cycle and bridle paths. Rising water levels could affect the fishing, especially if sewerage systems become inundated and pollute the lough. The ruins are close to the shoreline and could be submerged. Heavy rain regularly washes away the paths.

The river x would run into the lough at the top end of the lough but a dam was built over 100 years ago to supply a textile mill and forge in nearby x with water and power. The old water driven mill is still there but derelict. A charitable trust to repair and manage the mill and forge as a tourist attraction, possibly a social enterprise, has been proposed. The dam is believed to be in good condition but, were it to be breached, it would overrun a road, a small settlement and, potentially, the fields used by Veg Direct, a significant local employer. A four-acre lake formed behind the dam in a quarry. The Lough Wildfowling and Conservation Association manage the lake, woodland and a lower pond used for breeding fish and fowl. The site is only open to members currently because access is poor. The association would like to open it up to the public but would need capital and revenue to do so. The village of x is the site of both a twelfth century abbey and a fifth century monastery where the remains of what may be the oldest excavated tide mill anywhere in the world are. X now has a thriving antiques trade.

At the bottom end of the lough there is a very pretty, small village called X. An ancient bridge crosses the lough. In the summer, it is very heavily used and becomes a bottleneck. Rising water levels or floods could threaten the bridge. If the bridge were to be closed for any reason, it could mean a 75-mile detour round the lough affecting residents, businesses, and tourism enormously. X has a Marine Visitors Centre and Aquarium with a seal sanctuary which rescues injured seals for re-release into the wild. Pollution of the lough from flooding would cause the aquarium serious problems. Its viability is also affected by high energy costs involved in pumping fresh seawater in constantly. All around the lough is farmland. As well as a dairy and beef industry there are vegetable growers. Most of the output is processed is elsewhere but there is a one farm which is making high value yogurt and there is another business which is making ready meals using local produce.

Stakeholders are meeting to draw up a management strategy for the area which needs to take in to account:

- Threats from environmental conditions and changes
- The need for jobs and housing for local people
- A poor infrastructure including roads, bridges and sewerage
- Retaining and enhancing the area as good place to live, work, study and visit
- Brexit is likely to affect the area because of its proximity to the border
- Finite public-sector resources

For more information contact science.shop@qub.ac.uk
Appendix C: Case Study 3 – Botanical Sexism linked to Increased Asthma Levels

Botanical Sexism linked to Increased Asthma Levels
A cautionary tale of how poor planning in urban landscaping led to increased allergies

The case of Botanical Sexism in North America is a well-known international scenario within biology. These articles informed Case Study 3:

Links
http://www.edmontonjournal.com/health/Domination+male+trees+creates+sick+urban+society+says+horticultur
alist/6361120/story.html

Exercise
As an exercise to explore RRI in more detail, you can ask participants to explore what actions under each process requirement need to be carried out in order to stimulate alternative outcomes. Give participants a few minutes to identify and discuss potential actions under each heading and then talk through potential actions; suggestions are provided in the below image.

For more information on using this prompt in the classroom contact ruth.hally@ucc.ie
Appendix D: Case Study 4 – Heightening Understanding of HIV Prevention

**Heightening Understanding of HIV Prevention**

A debating game to discuss HIV prevention and treatment

This game is a resource on the XploreHealth.eu website. XploreHealth is website and suite of resources developed by IrsiCaixa and “La Caixa” Foundation. The resources are in multiple languages. This debating game can be found here:

**Links**

HIV debating game


Main website, where you can access a plethora of educational resources:


**Exercise**

A sample of the HIV Debating game is provided below.

**Discussion Continuum**

This activity is designed to facilitate dialogue about the ethical, legal and social aspects of research into HIV and AIDS. Groups of 4-12 students discuss the issues raised by each statement and choose where each card should go between ‘agree’ and ‘disagree’.

**Contents:**

- An AGREE and a DISAGREE card
- 8 Discussion Cards, which include a statement on some aspect of HIV and AIDS

**Gameplay:**

1. Players form small groups, between 4 and 12 per group. Each group is given an AGREE and DISAGREE card and 8 discussion cards.
2. Within each group, the AGREE card and DISAGREE card are placed on the floor/table about one metre apart, to represent the two extremes of the continuum. The space in between is where the discussion cards will be placed.
3. The first player reads the first discussion card to the rest of the group. The player should check everyone understands the card, and use information from the introduction where necessary to ensure the group understands the statement.
4. The first player then decides to what extent they agree with the first card. They place the card face up, anywhere on the discussion continuum, closer to AGREE or DISAGREE as they choose. This is entirely the choice of the individual player, and is not discussed by the group. The player can give a reason, if they wish.
5. Each player in turn then reads a card, checks that everyone understands, and chooses individually where to place it on the continuum in a similar way.

For more information contact Rosina Malagrida rmalagrida@irsicaixa.es
Appendix E: Case Study 5 – Time-Scale to Explore Future Scenarios

Time-Scale Exercise to Explore Future Scenarios
Arranging activities in chronological order to obtain a desirable future

This exercise is strongly influenced by the Transition Movement (e.g. transition towns) where multiple individuals come together to imagine and set in motion desirable futures. A best practice example within the transitions movement centres around a town called Kinsale in Co. Cork, Ireland, the Kinsale 2021 Energy Descent Action Plan. If using this prompt, educators can adapt this or other published actions plans (with proper citation and permissions) to reflect their own regional context.

Links
Kinsale2012 Energy Descent Action Plan
Supporting websites
https://www.greenworldtrust.org.uk/Solutions/EDAP.htm
https://transitionnetwork.org/
Journal article about time-scale and futures research and forecasting

The below present a selection of some of the adapted (jumbled up) recommendations originally put forward in the Kinsale 2021 Energy Descent Action Plan (locations have been anonymised to help demonstrate how you could use this resource). Participants would then position each action along the continuum, ranging from 2000 to 2015, for example.

Identify a number of sites for orchards (fruit trees) around x, and plant them with local school children, using rare local varieties where available.

The Local Food Officer works with the local schools to change their procurement policies as regards food. Schools undertake to purchase 60% of their food from local producers, of which 40% is organic.

The Local Food Partnership forms a Steering Group to begin to move x towards being a Slow Food town. They arrange a trip to existing Slow Food towns elsewhere in Europe to get a feel for their experience.

The x Sustainability Centre appoints a Local Food Officer, with the job of promoting local food. His/her first job is to organise an Open Space Think Tank event, inviting all those involved in food in x to discuss the recommendations in this report and to add new ones.

For more information contact Marco Rieckmann marco.rieckmann@uni-vechta.de
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More Reading on RRI (see reference list also)


References


