

FLICREATE PROJECT



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**FINAL REPORT TO THE PARTNERSHIP
&**

**TEACHER HANDBOOK FOR
PARTICIPATING TEACHERS**

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PREFACE

The young generation in high schools today is not happy. They are afraid of the future. There is a shortage of jobs and there is a general pessimism in the society. Despite this, ambitious individuals are proving that you can succeed if you have a clear goal and work hard.

This generation is standing at the edge of a cliff. The world around them is completely different from the one in which their parents grew up. Success is determined by completely different things today than in the past. If it was enough to have knowledge about an area thirty years ago, today you need to create something new with the knowledge you have in order to be successful. If you could get a job twenty years ago by simply knowing the right person, today you need to show much more. If it was enough to invent something ten years ago, today one needs to sell this invention to prosper.

But if we take a step back, we can see that this generation has some incredible opportunities. An interconnected world that is made possible by new technology allows nearly anyone to find his or her place and contribute. It is completely possible to turn a hobby into a company today and earn a living by doing what you love.

Decades ago, the key thing holding the people who want to start a business back was a lack of capital. Today, things are different. A business can be started with a laptop and an internet connection. The main thing holding people back today is a lack of sales knowledge and business skills. This is why most people do not believe they can start a business.

Those who were fortunate enough to achieve their first success gained an experience that showed them things can be done. They will be willing to try again and have the courage to persevere.

The role of the teachers is to help them make this first step.

Matija Goljar
Founder and CEO
Ustvarjalnik



0. TABLE OF CONTENTS

This document consists of the following:

0. Table of contents	3
1. Teacher instructions	4
a. Part one: facilitating the lessons	4
b. Part two: how to be a great teacher	5
c. Part three: set very ambitious goals	8
d. Part four: personal mentorship in the context of a classroom	9
2. The designed lessons, their purpose and their rationale	16
a. Communication	16
b. Literacy	27
c. IT skills	40
d. Research and data presentation (concrete)	54
e. Critical thinking	70
f. Concreteness in presentations	80
3. Final project report on the activities	96
a. The lesson creation	96
b. Teacher training	97

1. TEACHER INSTRUCTIONS

PART ONE: FACILITATING THE LESSONS

Running an interactive class is very different from giving a lecture or traditional teaching. It requires a specific skillset and a different approach

LEARNING BY DOING IS THE MOST EFFECTIVE WAY OF IMPARTING KNOWLEDGE. THE JOB OF A FACILITATOR IS TO GUIDE THE PARTICIPANTS THROUGH AN EXPERIENCE THAT WILL LEAVE THEM WITH NEW INSIGHTS.

There are many workshop-type activities prepared for the mentors in the lesson plan. All of them require from the mentor to be a facilitator and guide the participants one step at a time through an experience that will leave them an insight about a particular aspect of business.

Know, that the experiences themselves do not teach anything. Only when they are put into context, when we ask ourselves "what have we learned" do we really learn.

It is the job of the facilitator to bring the participants to the desired insights. The activity should merely be something that kicks off a discussion about the subject and the students should come to new realizations and insights based on their real experience.

TIPS FOR GREAT FACILITATION:

- Give very clear instructions. Nothing ruins an activity quicker than participants not knowing what to do.
- After you gave the instructions, ask everyone questions like "do we understand each other?" "do you know what you need to do?" "are we ready?" to make sure everyone is on the same page.
- Explain the reason for this activity. Sometimes participants will feel this is a game, so you should set the context.
- Be very mindful of time. If you run out of time, the activity will not make sense. Come prepared with a stopwatch.
- Any activity is worthless without a discussion afterwards, because learning only happens later
- At the end of the discussion it is the job of the facilitator to wrap things up and re-state the important learnings. This should be done using the words: "we have come to a conclusion" - acknowledge that this was a shared learning experience.

PART TWO: HOW TO BE A GREAT TEACHER

Advice is like snow; the softer it falls, the longer it dwells upon, and the deeper it sinks into the mind

- Samuel Taylor Coleridge

THE USTVARJALNIK TEACHING PHILOSOPHY: THE BEST MENTOR LIGHTS A SPARK IN THE STUDENT'S EYES

Step One: Don't panic, you know enough

If you think who is the better basketball player, Michael Jordan or his coach Phil Jackson, the answer is very obvious. Still, the coach can teach the player a lot of things. Don't worry if you don't have all the answers or are not a master in storytelling - that is not your job. Your job is to be the person who guides the future changemaker through his or her next steps. So literally the only thing you should know is the next couple of steps. In fact, we see that the best mentors are not those whose minds are bogged with all the details and complications that come from running a complex business, but someone who can still appreciate the humble beginnings - because that is precisely where he/she is right now.

Step Two: Believe in the youngsters

Your only obligation is to truly believe in the potential and the capability of the youngsters you are dealing with. They do not see the potential and capabilities they have, so you need to show them. Build their confidence! Take them on a journey and let them gain their first experience - that is something they will always be able to fall back on.

Step Three: Guide the process of discovery

Your job is to be a curator of experiences. The youngsters are able to learn a lot, but do not yet know what is truly important. Take them one step at a time and show them the basic principles first and let them explore the details later, when they need them. Do not go too deep at first as that will only overcomplicate matters. Remember that it is always better to feel and experience something than to learn about it - first show, then explain.

Step Four: Follow a path

Professional success is hard. Really hard. But the students should not know this at first, as it would destroy the motivation. Start by guiding the students to their first success and build their naive hype and joy. Let them believe they can do this. Then, when they start facing real roadblocks, take the time and explain the reality: that persistence trumps talent and that hard work is usually the only right answer. Remember that your goal is to show them the way, how to start at something. Sometimes they will decide this is not for them, which is completely okay. But no matter what, they will learn the process and will be prepared for the future.

Step Five: Build self-confidence before you start talking about ideas

Usually, the thing which prevents us from following our dreams is our own head. We do not believe we are capable, so we do not even try. Your first job as a mentor is to build the students' self-confidence. Only then you can start talking about ideas, projects and other things. That way there will be no internal filter.

Step Six: Create an open space

You should strive to create an open, accepting environment. The classroom is a place where ideas can be shared freely, and students do not judge each other. The students must know that they can confide in the mentor and that the team will help each other to success. It is important to spread this ideal to everyone attending the club.

Step Seven: Be strict

It is not your job to always say the students are great and their ideas are wonderful. On the contrary, you must be very strict when it comes to judging the students' efforts: the market will not be any kinder towards them. The key is to be demanding but also to tell them that you know they are capable of many things. The same thing applies to project ideas and decisions. Don't let them follow an idea that is doomed for failure, instead guide them towards success.

Step Eight: A good mentor asks the right questions

The best way to balance being supportive and being strict is by adopting the socratic method of asking questions. That way you will guide their thinking so they come up with their own answers and learnings. They should think for themselves instead of waiting for you to think instead of them.

Step Nine: Keep the motivation strong

One year is a lot of time in the life of a high school student. Additionally, starting a business is a long and difficult process. Very probably, this will be the first time for most of your students that they have committed so much time in one single project. It is your job to provide the motivation and hype. The best way to do this is to show you are genuinely interested in the students' projects and their accomplishments, as well as keeping them accountable to the timeline they have set. You should celebrate their successes with them and comfort them when they failed at something.

Step Ten: You are not alone, connect with other mentors

It is normal that you will face many difficulties while teaching. Sometimes your students will ask questions you cannot answer. Sometimes they will know more about a technical field than you. Remember that there are many other mentors in the same situation, so you should connect with them and help each other. You should also know that the entire teaching is here to help. Those students that show the most promise should definitely be introduced to more specialized teachers or experts in their fields, so they can be given extra support.

Bonus: Remember you are a role model

Students will get their first view into the business world through you. Whatever you do, they will consider the norm, because you are their mentor. This is both a blessing and a curse, so be responsible.

PART THREE: SET VERY AMBITIOUS GOALS

"Aim for the moon. If you miss, you will land among stars."

- W. Clement Stone

STUDENTS ARE CAPABLE OF MUCH BIGGER THINGS THAN THEY IMAGINE. IT IS THE GOAL OF THE MENTOR TO PROVIDE INSPIRATION AND SUPPORT ALONG THE WAY.

In the past we have seen that students have completed extremely ambitious projects. Project-based teaching does not have age limits and we should dare to pick up ambitious projects and be unreasonable about our goals.

The students are not aware what are their capabilities. Usually they are much, much higher than they think. A big part of this learning approach is helping them see that they are capable and giving them the confidence to start.

When deciding on an idea and setting your goals early on, you should show ambition and provide the hype. The entrepreneurship club is a perfect environment for the students to make a huge leap forward.

PART FOUR: PERSONAL MENTORSHIP IN THE CONTEXT OF THE CLASSROOM

“What is a teacher? I'll tell you: it isn't someone who teaches something, but someone who inspires the student to give of her best in order to discover what she already knows.”

- Paolo Coelho

PERHAPS THE BIGGEST IMPACT HAPPENS WHEN THE TEACHER INVESTS TIME TO KNOW THE STUDENTS ON A PERSONAL LEVEL AND COACHES THEM TO SUCCESS AS A MENTOR

To support students we should be mentors, we should be older brothers and sisters, we should be friends, and sometimes we may even act as parents. For all of these, the domain of coaching can offer some very useful insights.

This will be a short overview of some tried-and-tested coaching techniques, which was taken from the Coach.me knowledge files and adapted to fit the high school context.

THE MOMENTUM FRAMEWORK

Usually the biggest issues students need support with are:

- Settling on a goal or finding a purpose
- Personal discipline to execute it

The basic principle of coaching is to coach the habit first, and then to coach for growth later. This pattern of habit-first coaching is the best fit for all your general interactions with the students - in the clubs or outside.

This is called the Momentum Framework. Use this as a foundation that you can tweak when students are asking you for advice or you feel you need to give them support.

Once a week, in class, you can't do the same deep-dive discussion that you'd do in person. Focus on immediate action instead. This builds trust and opens the door for continuous assessment and ongoing re-evaluation.

Using the framework, you cycle a student through four phases. Most ambitious mentors can streamline this practice so that students are spending as much time making progress as possible. Often that means transitioning from Phase 1 (Assessment) to Phase 2 (Habituation) in just 2 or 3 messages. But we are getting ahead of ourselves...

Phase 1: Assessment. What is their goal?

Start with Assessment. What is the person's larger goal and why? What do they expect from their mentor? You need this assessment in order to identify an initial practice and to be able to personalize your coaching.

Phase 2: Habituation. Build the Habit.

Use the assessment to move on to Habituation. Find a regular practice that supports your student's larger goal. Focus on building consistency.

MENTOR NOTE: A very good exercise is to invite the students to send you daily update emails with the subject line: "What I have accomplished today." This is a polite invitation that you sell to the students by saying "this is something to build consistency."

What's important is that every day you do something for your project. So, this email is mainly to make you feel a little bad before you go to sleep, so in the worst case, you think of something really small to do and do that for 10 minutes before you go to sleep. It's not much, but at least it's some small progress."

You can also say that this is a perfect way for you to stay informed so you can help the student better and encourage him/her to write any questions in that email too. Several of our students have been doing this for over a year and we saw great results.

Phase 3: Growth. Build Skills & Increase Difficulty.

Once there is consistency, you can work on growth. You can expand the difficulty of the practice, build skills, identify and solve challenges, and/or introduce optimizations.

Phase 4: Graduation. Celebrate and Revise the Goal Based on Milestones.

You and your student should look for graduation milestones where you can re-assess and restart the momentum cycle based on what you have learned together. Don't forget to celebrate the success too!

This is something that builds motivation and gives clarity of vision to our students. The competition at the end of the year is designed to provide a milestone on a bigger scale and just such a graduation moment.

Let's look at some example scripts for each phase.

PHASE ONE: ASSESMENT

At the beginning of your relationship, you'll want to get to know your students by asking questions in order to perform a simple assessment.

Typically, this assessment comes in the form of a set of one to five short questions.

The right questions will:

1. Reveal the bigger picture. When you know why the student has joined a club and how they expect it to change their life, you have more context for how to adjust and personalize your mentorship during the rest of the year.
2. Identify blockers. You'll know the obstacles to expect and be able to coach towards removing them.
3. Identify your student's expectations. Some personas need to be mentored with different techniques, including setting clear expectations. You'll learn to spot these situations and correct expectations right away. Nothing ruins attendance of the clubs faster than mismatched expectations.

Here are a few typical questions the coaches use to kick off the process:

1. What goal do you want to achieve and why?
2. What would your life be like if you achieved this goal?
3. Describe your perfect day.
4. Describe your typical (not perfect) day. What's stopping you from achieving your goal?
5. How do you hope my coaching will help you? If you've been coached before, do you have any preferences about how I should coach you?

In these conversations, after the students answer your questions, it is crucial that you summarize and repeat back your student's goal so that they know you are paying attention. (Many students think that their job is to provide expert advice, but most often it's to be an **expert listener**)

PHASE TWO: HABITUATION. BUILD THE HABIT.

Momentum only works if the student has identified a daily practice.

Some people call this Baby Steps or Tiny Habits. We call it a minimum daily practice.

Coaches encourage clients in this direction by asking them to pick a specific goal when they hire their coach.

In most cases, you should be able to identify and jump right to a regular practice. If your student wants to run a marathon, then they need to build the habit of running. Often, your student will

even suggest a first step—but be on the lookout for a practice that's too big. When this happens, you can reframe the habit as something much smaller.

Below is an example of a coach's response to a client who had the goal to finish their dissertation. They thought they were struggling with procrastination and stated that they "just can't focus on writing for 8 hours at a time."

This is what I'm hearing. You want to write every day in order to make faster progress on your dissertation. When you try to spend 8 hours writing, you feel like you mostly end up procrastinating. Is that right?

So, the way I work is to use a momentum-based methodology. The idea is to focus on consistency first so that we can build momentum. And then once there is consistency, we can work on quality and quantity. In your case, that second phase would include assessing how much time you spend writing, how you feel about the quality of the writing, and (maybe) how many words did you write. But for now, let's just work on consistency.

For tomorrow, what do you think about really focusing on sitting down and getting right to work? Can you time yourself and tell me how long it takes between the time you sit down at your desk and the time you've finished writing your first sentence?

Notice how this response also makes great use of active listening techniques (the first paragraph), using exact words and phrases from the client's last message.

Once you've identified a minimum daily practice, you need to make sure that practice is truly consistent.

Most of the time you will have more than enough ideas how to support the students to achieve their goals. Apart from this, there are several strategies and scripts available online for building habits. You don't need to memorize them—you just need to know that they exist.

Goal definition: try the anchoring and goal statement exercises in order to clarify the how and when of the habit.

Habit building basics: habits work best when you scope them down to a minimum daily practice, anchor them to existing habits, and treat different contexts (work, home, travel) as separate habits.

Environmental design: one-time decisions that make the habit easier to achieve.

Accountability and positive reinforcement: these strategies help reinforce and motivate your client until their habit is consistent.

If the student already has the habit, then it should take 1 to 2 days for you to verify that.

If the student is starting from scratch, then it will take 1 to 2 weeks for the habit to take hold. They don't have a permanent habit formed at two weeks, but they'll have enough consistency to move on to the next phase.

PHASE THREE: GROWTH

Once you have consistency, you can work on helping the student increase their skills to handle greater difficulty. If they're just working on a habit, then you'll work on making the habit permanent. But usually, the goal also has a skill or volume component.

There are a variety of things coaches do here and a lot of them are specific to the goal that they are trying to achieve. A running coach might work the client through a progressively harder training load. A productivity coach might help their client identify patterns and design processes for handling them—for example, how to quickly process expense reports.

These are the main tactics:

1. **Spotlighting questions:** you can help the students plan, examine and optimize their own goal. In this mode, you use questions to spotlight areas for improvement and the student provides the answers.
2. **Skill progression:** this is where you can use your expertise to improve the student's performance one element at a time.

This phase can go on indefinitely, especially if your student is leaning on you for accountability. However, it's always better to be on the lookout for a milestone where you can claim success and then start a new trip through the Momentum Cycle.

PHASE FOUR: GRADUATION

When your student has completed a goal or an important task or milestone, you should work with them through a graduation step with the goal of revising, re-evaluating or truly graduating.

These are the main potential outcomes:

1. Go through the Momentum Cycle again, starting with a re-assessment to see how to be even better. For example, you could train for one client meeting, consider that a graduation moment, and then reassess in order to do even better next time.
2. Move to an adjacent goal and start the Momentum Cycle for that goal. For example, a productivity coach working on prioritization might follow up with Inbox Zero.
3. Go into maintenance mode. In this period, 90% of your value will be in holding the student accountable. Occasionally you may spot room for improvements, but mostly you'll just be an external source of motivation.

ACTIVE LISTENING

This is perhaps the most important fundamental skill for coaching and it applies to mentorship in many ways.

New mentors are the most likely to overlook this skill. Don't think that your job is to simply tell someone what to do. It's not. We can't stress that enough.

Mentorship is a collaboration. Your ability to be a good listener is a prerequisite for engaging your student.

Active listening lets your student know that they're being heard and that they're not just getting boilerplate copy-and-paste from you.

It's especially important to connect the dots between what the student is telling you and what you're advising them to do.

Active listening can be as simple as just repeating back what you've heard. This really important, even if it seems repetitive since their response happened only moments ago.

By repeating what you've said to the student, they feel heard.

You create three problems in your relationship with your student if you don't use active listening strategies.

1. You will give incorrect advice without realizing it. This is because you literally didn't hear your student's problems (because you're not making listening a priority) or because your student doesn't *think* you're listening (so they don't feel like it's worth correcting you).
2. Your student will put less effort into their answers to your questions because they don't feel like that effort will be acknowledged.
3. Your student will lose trust in your advice because they don't feel that they were heard.

You probably already think you are a good listener, but do your students?

Repeating back to someone is the minimum level of active listening. If you want a way to improve this skill fast, look for keywords that they use and reuse them in your reply.

What would be the most appropriate response to the following statement:

*Hi mentor, you know, I want to find a way to **control** my **fears** of **public speaking**. For example, sometimes when I'm talking, I start to think about my audience **watching** me, rather than just **focusing** in on my talk. This comes up in **school** too, especially when I am **called on**.*

An answer might look like this:

I'm hearing that you want to be able to focus and have control over your mind in situations when people are watching you like when you have to speak publicly. If we can reduce fear and anxiety in those situations, then you'll be able to improve your performance.

This method is a variation on a technique from NLP (Neuro Linguistic Programming) called "keyword backtracking".

That's a fancy way to say that active listening involves noting important keywords that your student uses and then repeating those keywords back to them. It is very effective in creating a trusting relationship.

2. THE DESIGNED LESSONS, THEIR PURPOSE AND RATIONALE LESSON

ONE: COMMUNICATION

LESSON PLAN: Curse of knowledge and effective communication

SKILL AREA: Communication

GOALS AND OBJECTIVES

Students will be able to understand the common pitfalls and difficulties for effective communication. They will be reminded of the need for empathy and effort in effective everyday communication as well as given some very useful suggestions for public speaking and presentations

APPLYING THIS LESSON

This lesson can fit into several core or elective subjects: **Languages** (essay writing, oral presentations), **Sociology** (group dynamics, intercultural communication), **Psychology** (empathy), **Civics** (public speaking),... With slight adaptations to the content it may apply to any course where presentations are required and should be delivered to every class prior to their first public speaking assignment.

METHOD OF INSTRUCTION AND VOCABULARY

The teacher will lead the class to participate in an activity and will be a facilitator, rather than lecturer. He/she will attempt to always defer judgement and instead give space to the students to voice their opinion and come to conclusions through discussion. Afterwards, the teacher will be in a role of demonstrator and should show in practice all the content suggested in this guide.

RESOURCES NEEDED

- **A large number of pictures** taken out of magazines or newspaper (see lesson plan for more suggestions)
- Pieces of **paper** and **pens** for participants (regular, students may use their own)

- Access to a **whiteboard** (or similar) to track the discussion (see lesson plan for instructions)
- A **classroom that allows for moving of chairs and potential removal of tables** for the students (see lesson plan for preparation instructions)

THE LESSON

What is the purpose of this lesson?

What does the teacher want to achieve in this session? What educational outcome is expected?

PRIMARY GOAL: To demonstrate how attention and effort must always be given to achieve effective communication. To show how quickly one can be led astray when not focusing on the communication process and to introduce the concept of the **curse of knowledge** to the students.

SECONDARY GOAL: To provide some practical and applicable advice on using nonverbal communication and speechmaking tricks for improving the effectiveness of student's communication skills.

What is needed to deliver this lesson?

Instructions for teachers on things to set up before entering the classroom.

At least one picture per student in the class. The pictures will serve as prompts for the communication exercise. Best pictures are those that are generic and do not have a particular subject in it, and do not include well-known landmarks, persons or other items that can be easily named (and explained). But ultimately any picture will do. They may be torn out of a current newspaper or magazine, neither the size or their quality matters.

For the first activity the chairs students sit in should be rearranged so they are paired up by placing the chairs opposite, with the students' backs facing each other (as indicated) so they do not see each other nor what they are writing.

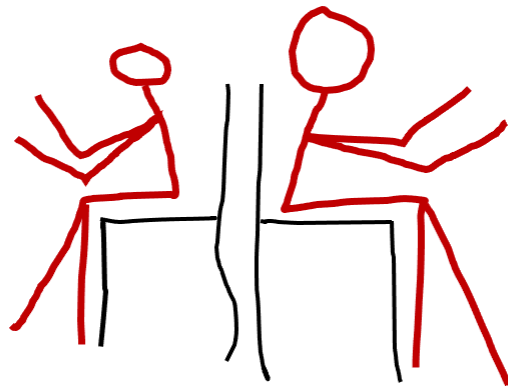
Outline of the lesson

Instructions on how to deliver the lesson and how to run the activities.

LESSON INTRODUCTION (ANTICIPATORY HOOK/ACCESSING PRIOR KNOWLEDGE): The students should be instructed that this lesson will be about the communication skills that are always useful to have. Initially, the teacher should only do a brief introduction to the topic and mention that »**the best idea is**

worthless if you are not able to communicate it effectively« - after that, the students should be immediately invited to take part in an interactive activity.

THE DISCUSSION GAME: Prior to the start of the activity, the students should be invited to spread out through the classroom. They should also form pairs. Ideally, they should take their (movable) chairs and sit opposite one another with their backs together. If the chairs are not movable, they should just sit on the floor or on the tables and form so that they are facing opposite sides and are unable to see what the other person in the pair is writing down or looking at.



The teacher should tell the students this activity will take place in two steps and that the pair will alternate in different roles. One of the two will be the communicator and the other will be the listener, and then the roles will be reversed. In both cases, the steps for this activity will be the same.

Step one: The teacher should first instruct the students to decide who will take each role. One should be the communicator, and the other should be the listener. The pair is instructed to sit down facing opposite sides and **not to look towards each other throughout this activity**.

The listeners should take a few moments to get ready a pen and a paper for this activity and place both in their laps.

Step two: The teacher explains that the purpose of this activity is to test how the pair is able to communicate and expose the difficulties inherent in every communication. This is not a competition, however all the students should make an honest attempt at the activity that will follow.

Step three: The teacher tells the students that the communicators will receive a picture from the teacher. They must not show this picture to their partner. Their job will be to describe this image verbally so their partners will be able to reproduce it by drawing. They may talk to each other in any way they want, as much as they want, and both may speak and ask questions (including the listener). The only thing not allowed is to show the picture to the other person. They will have **10 minutes** for this task.

Step four: The teacher should instruct the students that after the activity is over, the student pairs will show the class the original picture and the drawing meant to reproduce it. The results will be discussed later.

Step five: The teacher should at this point deliver the pictures to all the communicators in a way that their partners do not see them. Then the students are to be instructed to begin the drawing.

During this time the teacher should circle around the classroom making observations but not commenting on the progress of the students.

Step six: Once the time expires, the teachers should ask the students to show the end results among themselves. Laughter should ensue. The teacher should congratulate them and then ask the pairs to lift their images up and show them to the other students.

Step seven: The teacher should ask if this is what the students expected. They should be congratulated on their efforts and be told this is a very normal result – it is quite hard to reproduce an image in this way. The teacher should ask the class if they expected this to be so difficult. A short **discussion** can be held.

Step eight: The teacher then suggests that the pair discuss the technique and approach they have used to communicate prior to them switching. A **few minutes** is given to the class to do this.

Step nine: The roles are reversed and the teacher distributes a new set of pictures to the pairs, this time ensuring the other student takes the role of communicator. Again the students should be given **10 minutes** for this task.

During this time the teacher should circle around the classroom making observations but not commenting on the progress of the students.

Step ten: Once the time expires, the teachers should ask the students to show the end results among themselves. The teacher should congratulate them and again ask the pairs to lift their images up and show them to the other students.

Step eleven: The teacher should comment briefly on the results and again start a **discussion** about this activity.

DISCUSSION PROMPTS:

(The teacher may choose as many or as few as he/she requires for the session)

- Why was this so difficult?
- What approaches and methods did you use to accomplish this task?
- What did you change the second time
- Which pairs feel they did a particularly good job? What did you do that gave you an advantage?
- Which pairs found this to be particularly hard? Why?
- Are there any differences between approaches of the two extremes?
- Are there some general rules for communication that can be taken out of this exercise?
- What suggestions would be most appropriate for future communication?

It is the primary role of the teacher to encourage a discussion and give voice to different opinions. **The teacher will refrain from contributing his or her own personal views during the student discussion** (there will be time for this in the conclusion of the lesson, should the teacher feel this is necessary).

At this point, the teacher will draw attention to the complexity of particular situations and concede that it may never be possible to create a golden set of rules for every communication situation, however one important point should be mentioned – a key reason why this is a difficult task is because often times people who communicate have a hard time putting themselves into the shoes of those for whom a particular piece of information is new and because of this they do not explain things thoroughly enough. This is referred to by experts as **the curse of knowledge**.

At this stage the teacher will write the key insights from the discussion on the whiteboard and lead the students in forming conclusions. Only at this stage may the teacher offer his/her opinions and summarize the discussion pointing attention to arguments he/she deems most significant.

In his/her own remarks, the teacher may choose to give his/her own opinion and pointers for better communication, but this should only complement the suggestions students themselves have made.

TEACHER NOTE: An excellent resource for more information on the Curse of Knowledge is work done by Chip and Dan Heath of Stanford University – which is summarized in a Harvard Business Review article available here: <https://hbr.org/2006/12/the-curse-of-knowledge>.

The teacher may mention that whatever else might be suggested by the students, one key thing can be agreed by all: **effective communication is always the primary responsibility of the communicator, not the listener**. He/she should therefore make all the efforts to communicate in the clearest possible way.

HOW TO IMPROVE COMMUNICATION WHILE SPEAKING (DEMONSTRATION):

For the last part of this lesson, the teacher should give the students some practical advice how to improve their oral communication using tricks employed by actors and presenters. They are extremely simple, but typically nobody mentions them explicitly to students and so few people actually use them. They cover two areas: speech delivery and nonverbal communication.

TEACHER NOTE: The teacher should absolutely demonstrate these himself/herself. The following exercises are so simple, everyone should be able to do it, even if they consider themselves poor public speakers. Only going through these in theory without demonstration will not be effective.

The teacher should explain there are **five simple »tricks«** he/she will now demonstrate that will help everyone, even the most uncomfortable speaker, to be significantly better while doing oral presentations. All of these are straight from the acting school, but they can and should be employed by anyone. As almost nobody is paying attention to these points, it is safe to assume students that embrace these suggestions will immediately become much better communicators.

Suggestion #1: Dynamic tonality

The teacher should start off by reciting a poem in a satirically dull monotonous way, without any pitch or cadence changes. Then the teacher should ask the students if this was pleasant. After that, the teacher should ask the students if they remember any cartoon or movie that depicted a military drill sergeant saying

»Attention!«. This word is always shouted in three different pitches: AAAA-

TEEEEEEEEN-TIOOOON, where the first part is quite neutral in tonality (aaaaaaa), the middle part is extremely low (teeeeeen), and the ending of the word is very high (tiooon). The teacher should demonstrate and use the English word even if delivering this lesson in another language. This should be used as an example to explain that it is preferable to use dynamic tonality to monotonous droning. If the teacher is a strong speaker (most are), he/she should finish this part by reciting the same poem in a much more engaging way.

The students should be directed to not be afraid to show energy and speak in an engaging way.

Suggestion #2: Emphasis and rhetoric pauses

The teacher should point out that public speaking gets its colour and flair by using two building blocks of dramatic interpretation. The first is emphasis. The teacher should pick a single sentence, like: **Today is a beautiful sunny day in <town name>**. Then, the teacher should demonstrate by repeating this sentence changing the verbal emphasis of every single word:

Today is a beautiful day in <town name>. – emphasising that today is a nice day Today is a beautiful day in <town name>. – emphasising the affirmative

Today is a beautiful day in <town name>. – emphasising the beauty of the day Today is a beautiful day in <town name>. – emphasising the day itself

Today is a beautiful day in <town name>. – emphasising the town

The students should be directed towards actively thinking what is the most important in every particular message, or even sentence. As they prepare their texts, they should underline the emphasis and deliver it accordingly.

The second building block is the dramatic pause. The teacher should just simply say: »And now I will demonstrate the second.... <pause>.... very important trick,... <pause> that is perhaps the easiest to use, but has the most significance. This is.... <long pause> the dramatic pause.

After this demonstration, the teacher should point out that people have a hard time internalizing new information if it is delivered too quickly and they find it much easier to pay close attention to something the speaker says if he/she stops at the appropriate place to create tension or drama. For this reason, the pause is highly effective if used properly.

The students should be directed towards actively thinking at which places should pauses be used. As they prepare their texts, they should make a mark where they should make a pause and deliver it accordingly.

Suggestion #3: Enthusiasm

Perhaps the easiest trick to fake charisma is to show enthusiasm or high energy. Perhaps the first thing every television presenter is told is to show extra enthusiasm and to go over the top – to be much more excited in front of the camera than in real life.

The teacher should simply start speaking about this point and be deliberately MUCH MUCH MORE EXCITED AND FAKE ENTHUSIASM WITH OVER THE TOP GESTUREEEEEES AND TONALITY.

TEACHER NOTE: This is not an easy lesson for teachers to demonstrate as you will be extremely afraid to appear silly – but the lesson is simple: When you think you show 50% more enthusiasm in front of the class, you are actually showing 5% more. Overemphasise this.

The teacher should be daring enough to demonstrate this as well, but if not (not recommended) he/she should point out the most outgoing person in class and ask the students why that person is considered charismatic. Most often than not, that will be because that person is not afraid to be more expressive and more loud than the average person.

The students should be informed that in a presentation situation it is preferable to be about 30% louder, speak about 20% slower and show about 50% more enthusiasm than in real life. And that »fake it till you make it« is a good lesson for such situations so the students should not be afraid to do so.

Suggestion #4: Gestures

The teacher should start by talking that gestures are something that a lot of people have a problem with, as they are unsure what to do with their hands, or just feel very nervous or self-conscious about doing anything at all. **As this is being explained** the teacher should start waving their hands in small circles in the level of his/her hips. The waving should be completely **uncoordinated** to the words being said.

The explanation of the teacher continues: »but the trick about gestures is actually really simple. First you should notice that right now I am simply waving my hands in a weird and possibly stupid way and the majority of you have a really, really hard time paying attention to me as you are being distracted by the silly gesture.«

The teacher stops making funny movements.

The teacher explains that the simple trick about gestures is that more or less anything goes, as long as this is congruent and in sync with what is being spoken. For the most part, people have their own styles of gestures and whatever they do is fine. **Again, as this is explained**, the teacher starts making exaggerated gestures but this time synchronized with whatever is being said.

The explanation of the teacher continues: »so you see, I can actually do a lot of really stupid things now (extends hands wide like a football player celebrating a goal), but they appear rather normal even if they are extreme (points straight up in the sky), because they emphasise my point (makes a big gesture bringing the fist into the other hand).«

The teacher explains that students should feel relaxed with whatever they normally do, just pay attention that it is congruent with their message, does not become repetitive and is not offensive (any profanity or covering of body parts with hands that we typically do not cover is weird). As before, typically people make the mistake of not being expressive enough instead of being too expressive.

Suggestion #5: Facial expressions

For the final suggestion the teacher should point out that the human face is a communication tool. The reason for so many muscles and microexpressions is because this is a way for people to provide emotional context in their daily interaction and communication. It is not particularly necessary for the teacher to do a big demonstration, but he/she should point out that charismatic presenters pay attention to smile when they are making a point, show a determined or sad face when it is appropriate in their story, and that once again, the simple trick is to be more expressive than what you think is appropriate.

The general note that should be made to the students is that **for the most part we feel we are expressive enough, when in fact we are really not**. So for 95% of people the advice here is to dare to be more expressive, and they will instantly become better communicators – in public or private.

Bonus suggestion #6: Smile

The teacher should point out that a key trick in everything is to always underpromise and overdeliver, therefore he/she has a bonus, 6th, suggestion that is a bit more »fluffy« but still highly effective. Smile! Despite the fact that nobody sees them, radio speakers are always taught to smile while they are speaking to the microphone. This is because the human voice has a different pitch when a person is

speaking. Furthermore, when talking to an audience a positive and happy demeanor will always produce a better effect than a frown.

TEACHER NOTE: Whenever you demonstrate a skill it is always useful to exaggerate it so what you are doing is easily discernible and visible. Therefore you should overemphasize every single lesson in your demonstration almost to the point of absurdity.

REFLECTION/DEBRIEF OF THE LESSON:

The teacher should mention communication is a **learnable skill** for everyone. If students are afraid of public speaking or believe they are bad at it, the teacher should gently mention that **nobody was born knowing how to talk**, therefore this is certainly a question of practice and effort. Most people who feel they are not good speakers have had little experience in this field (or bad prior experience) and certainly no training. This lesson should therefore be a reminder and simple tutorial on some things everyone can do to become a little better speaker.

CONCLUSION AND ASSIGNMENTS:

The teacher may choose to assign reading on this topic or assign a paper about the reflection of the students following this activity.

Tips for the instructor

What are the key things to be aware of when conducting this lesson so it will be successful?

It is highly recommended for the teacher to make the classroom experiments engaging by announcing the steps in a gameshow-like manner. For best delivery, the teacher should introduce the game, then only take the students through one step at a time, not revealing what is going to happen in the next step. It is recommended to use a timer for this activity.

ACCOMODATIONS FOR LANGUAGE LEARNERS, STRIVING READERS AND STUDENTS WITH SPECIAL NEEDS

The group activity setting will take away the pressure of following a lecture and the ability for the students to work with a partner will help introduce key learning lessons of the unit in a practical way that is not dependent on learning ability. Since a lot of people are very afraid of public speaking, this lesson will be particularly helpful since the students will be given concrete pointers how to do a public presentation which should give them more confidence.

During the unstructured debate part of the activity, the teacher should be mindful to less outspoken students and prompt them to take part in the conversation as well.

ASSESSMENTS (FORMATIVE AND SUMMATIVE)

The teacher will circulate the classroom as he/she facilitate the activity and moderate the ensuing discussions and thus assess student progress. The teacher may consider taking written notes summarising the group consensus during debriefing discussion on the whiteboard and use that to assess to what level the students grasped the final concept.

INTERCULTURAL CONSIDERATIONS

This activity is an open discussion and therefore may lead to a topical discussion on particular skills of different students in the classroom. The teacher should consider in advance if and how to react if comments are made about individual students.

It is of particular importance for the teacher to intervene if the ensuing discussion turns against particular students and/or their particular skill in communication in order to have a civilized and open discussion.

Consideration should be taken before delivering this lesson about students for whom the language of instruction is not their mother tongue.

LESSON TWO: LITERACY

LESSON PLAN: **Analysis and Lateral Thinking**

SKILL AREA: **Literacy**

GOALS AND OBJECTIVES

While this lesson deals with literacy and comprehension of written information, it also serves a purpose to introduce creative thinking, also called »Lateral thinking«. Its' goal is to encourage students to read deeper and consider how they might always be able to read more from a particular piece of information if they apply more analysis to it.

APPLYING THIS LESSON

This lesson can fit into several core or elective subjects like **Sciences** (the scientific method, deductive reasoning), **Languages** (reading comprehension, literary analysis) or **History** (understanding historical sources). It can also be used for any subject where students are required to think independently.

METHOD OF INSTRUCTION AND VOCABULARY

The teacher will lead the class in a gameshow-like activity and will expect students to take part in a simple competition. The teacher will act as a moderator and facilitator and is expected to refrain from all commentary until the final debriefing.

RESOURCES NEEDED

- **Questions for lateral thinking puzzles in envelopes for every group** (the actual form of presentation can be adapted to the teacher's needs as he/she sees fit)
- **Prepared slips of paper with hints for every group** (as students in other groups must not see the hints one group receives – see lesson plan for instructions)
- **Pieces of paper for groups to write answers on** (every group should have at least 5-10 pieces of paper per question, as they will be submitting multiple possible answers)

- Access to a **whiteboard** (or similar) to track the results (see lesson plan for instructions)
- **A classroom set up for group work** (to enable groups to converse without other groups overhearing them)

THE LESSON

What is the purpose of this lesson?

What does the teacher want to achieve in this session? What educational outcome is expected?

PRIMARY GOAL: To encourage students to pay attention to what is written and try to »read deeper« into everything they read.

SECONDARY GOAL: To encourage students to think creatively, outside-the-box and »laterally« as they are completing this lesson and in the future.

What is needed to deliver this lesson?

Instructions for teachers on things to set up before entering the classroom.

For this lesson, the teacher needs to prepare questions and hints for the game to be played in class ahead of time. For every group of students, he/she needs to prepare:

- Five envelopes with a question in each one per group
- Stacks of hints written on slips of paper (all three hints for all five questions for all the groups: 15 hints per group), stacked so that he/she is able to give right hints on the right questions in the right order
- The scoring chart on the whiteboard (as indicated in the appendix) All the

questions, hints and answers are available in the appendix.

A way to keep track of time, as student groups will be timed as they answer questions. The best way to do this is to use a countdown timer, but a simple stopwatch app on the phone can also be used.

Outline of the lesson

Instructions on how to deliver the lesson and how to run the activities.

LESSON INTRODUCTION (ANTICIPATORY HOOK/ACCESSING PRIOR

KNOWLEDGE): The students should be instructed that this lesson will take place in the form of a fun game, and they will be invited to form groups and compete among each other. There will be no need for them to take notes, instead they should only enjoy the activity.

Initially, the teacher should start off by telling them a famous story from ancient times:

Two women came to stand in front of a mighty King. They told him that both of them lived in the same house, alone. They both gave birth to a child around the same time, but sadly, some days later one of the babies died in the night. Allegedly, one of the women took the dead baby from his crib and carried him to the other crib, taking the live one – switching them in secret. The other mother saw the dead child in the crib in the morning, but she realized the child was not her own.

*And one woman said: »No, but the living child is my son, and the dead one is hers.«
And the other woman said. »The living child is *my* son, the dead one is hers!«*

*Then the King said: »This one says: 'it is my son that lives, and your son is dead,'
and that one says: 'it is my son that lives, and your son is dead.'« And the King said:
»Bring me my sword!« and they brought the sword before the King.*

*And the King said: »Divide the living child in two, and give one half to the one, and
half to the other!«*

*Then the woman whose child it was, spoke to the King, because she was afraid for
her son: »Oh, my Lord, give her the living child, and do not slay him!« But the other
said: »it shall be neither mine nor hers', divide it.«*

*And then the King answered, and said: »give her the living child and do not slay it,
for she is his mother!« Thus the wise judgement of King Solomon was heard
throughout Israel, for all the people saw that the wisdom to do justice was in him.*

The teacher should point out this story shows an example of **creative thinking** in solving problems, where the King was able to find an unexpected solution to a hard problem by approaching it from a novel perspective. This skill is particularly useful in real life and should be trained.

For this reason, the teacher should invite the class to explore this skill in more detail through a game he/she has prepared for this lesson.

INTRODUCING THE GAME: This game is meant to be fun and relaxing for the students, to provide them with some mental challenges in the hopes they will notice situations in real life where similar approaches might be used.

The teacher should **divide the class into small groups**. The number of groups depends on the wishes of the teacher and the size of the class, ideally the groups

should be small enough so everyone can engage in conversation, between 2 and 5 students.

The students should sit together in their groups before the game is revealed.

THE LATERAL THINKING GAME: The teacher should first introduce this game by telling the students about **lateral thinking**. This is not an exactly scientific term, but it has been popularized extensively by Edward DeBono in his books about creativity, and it means creative reasoning that is not immediately obvious. The teacher might start by saying something like:

In this game, I will be challenging you with strange dilemmas, similar to the one faced by King Solomon, and you will be invited in your groups to try and find a creative solution to the puzzles. All the puzzles will require something we might call »Lateral Thinking« - a process of looking outside of the obvious, that is quite distinct from traditional, logical, horizontal thinking you know (like deduction and analysis). While it is very hard to define this skill, it is not that difficult to notice it when you are actually faced with an interesting question, as we will later on.

For now, what you should know is that you should not jump to the first conclusion and try to deduct an answer only through the information visible on the surface level, quite like King Solomon, who based his reaction not on the facts of the case, which he could not know if they are true, but instead, creatively, on the reaction of the mothers, which cannot be faked.

TEACHER NOTE: If necessary, more information about this topic can be obtained in Edward DeBono's book »The Use of Lateral Thinking,« which also includes a number of practical exercises.

We will talk more about this in more formal terms later, but for now, I would like to explain how this game will work.

THE THINKING GAME: The teacher should now introduce the game and its' rules. He/she should tell the students the game will be played in five rounds, each round consisting of one logic puzzle in the form of a question. The teacher will be distributing the questions in envelopes, and all the groups will be opening them at the same time. Then, they will have **5 minutes** to give an answer to the question. They will be allowed to discuss the answer among the group.

When the group will come up with an answer they feel is correct, they will write it down on a small piece of paper and bring that to the teacher **at any point during the game**, not only after the time expires. The teacher will then answer »yes« or

»no« only – without further explanation. The groups may try answering as many times as they like, there is no limit.

TEACHER NOTE: The teacher and the groups should be mindful the answer slips remain hidden from the other groups.

The groups will also be able to ask for hints **three times per question**. The teacher will have those hints prepared in written form and the groups will be able to take them from the teacher at any time during the game. All the groups will have access to the same hints and the same questions.

SCORING OF THE GAME:

A correct answer to the question (as confirmed by the teacher) is worth 10 points. If the group asks for one hint, then the correct answer to that question will only be worth 5 points. If they ask for two hints but answer correctly, they will get 3 points. If they answer correctly after all three hints, they will receive 1 point. No points will be awarded if the group does not give a correct answer before the time runs out.

TEACHER NOTE: It is entirely possible the students come up with a different answer to the one indicated in the appendix of this lesson plan. This is an exercise in creativity so the students should not be penalized for a novel solution – it is the discretion of the teacher whether to award points for such answers.

The teacher should take note of how many hints each group received for scoring later. After each round is over, the scores are to be tallied on the whiteboard.

CLASSROOM SETUP: The teacher should position himself/herself in front of the class as every round is announced. Then, he/she should sit down behind her desk and have representatives of the groups approach him/her during the game with their answer sheets or requests for hints. Students from different groups should stand in line and approach one at a time with their answers. When the time runs out, all groups with students standing in the line at that time will have their answers counted even if they hand it to the teacher afterwards.

RUNNING OF THE GAME: The teacher should first ask if all the groups have understood the rules and are ready to start the first round of the game. The teacher should also make sure all the materials (questions and hints) are readily available for him/her to hand out.

A STANDARD ROUND OF THE GAME

STEP ONE: The teacher asks if the students are ready for the question. Then, he/she should circle around the groups and give out the question in an envelope or folded, so **they do not see it yet**. Then, he/she should get ready to start the clock for the answering session. He/she should remind the groups to avoid shouting out the answers but write them on a paper and bring it to him/her instead. The teacher should then sit down behind his/her desk and shout »GO«, start the clock and the students can then open the envelope and begin discussion.

STEP TWO: The teacher must be very quick with the students and avoid any discussions as representatives of the groups approach him/her. The only interaction is an answer in the form of a yes/no or to give them a hint if they ask for it. There are no penalties for wrong answers. **Only one person from a group at a time may approach the teacher.**

STEP THREE: The teacher calls out how much time is left **every minute**. During gameplay, the teacher should track how many hints each group got and if they answered correctly.

STEP FOUR: As the time runs out, the teacher will announce it loudly. After this, the teacher will give the correct answer to the class **and also mention any other interesting answers students proposed**. As this is a creativity exercise, it is useful to take time and acknowledge interesting trains of thought or potential solutions.

Then, he/she will proceed to the whiteboard and award points for every group so the whole class can keep track of the score. This can be done with some showmanship to encourage competition.

STEP FIVE: Prior to starting the next round of the game, the teacher should ask the groups to prepare additional pieces of paper for answers if they need to, so they can only focus on the game while the clock is running.

CONCLUSION OF THE GAME: After all the rounds have been played, the teacher should take the final score tally on the board and then announce the winning group. **Optionally, he/she may decide to give out a small prize (candy, etc...) to the winners.**

The teacher should congratulate all the students for participating and making an effort in thinking creatively.

REFLECTION/DEBRIEF OF THE ACTIVITY:

The teacher will start the discussion by pointing out these skills are widely applicable in the real world and that it is very important for students to be able to always look for opportunities where a more creative approach to a problem is possible.

At this stage the teacher will invite a discussion about the skills underlying this game.

These are some of the questions he/she may use to encourage debate:

- Which questions were the hardest/easiest?
- Why was that so?
- Was it as hard in the beginning as later on, and why?
- How did the groups approach these problems? Was there any strategy that proved effective?
- Can we generalize on the strategies heard here to come up with some **suggestions for students to use in the future?**

At this point the teacher may choose to write the summary of these suggestions on the whiteboard and work together with the class to come up with guidelines for creative lateral thinking.

Continuing the discussion, the teacher may conclude the discussion by asking:

- In what ways does this apply to everyday life and challenges in school?
- How can we use what was learned today in the future?

In his/her own remarks, the teacher may choose to emphasize that lateral thinking will often produce solutions whereby the problem appears as "obvious" in hindsight. That lateral thinking will often lead to problems that you never knew you had, or it will solve simple problems that have a huge potential. For example, if a production line produced 1000 books per hour, lateral thinking may suggest that a drop in output to 800 would lead to higher quality, and more motivated workers.

CONCLUSION AND ASSIGNMENTS:

The teacher may choose to conclude this lesson by providing resources to more lateral thinking questions that are readily available all over the internet (try Googling »Lateral thinking exercises«). The main assignment for the future is to invite students to always remind themselves to **dig deeper when analysing any written material** and to **constantly ask themselves if another approach exists** to solve their challenge.

Tips for the instructor

What are the key things to be aware of when conducting this lesson so it will be successful?

It is highly recommended for the teacher to deliberately step into the role of a gameshow host with all the presentation flair – announcing the game activities and raising the tension during the activity. For best delivery, the teacher should read out the scores in a dramatic fashion after every round of questions.

ACCOMODATIONS FOR LANGUAGE LEARNERS, STRIVING READERS AND STUDENTS WITH SPECIAL NEEDS

The teacher should pay attention how groups are set up. As this is a competition, it may prove wise to influence group formation so that a balance is achieved.

If a particular student has already researched »lateral thinking exercises« on their own, they might have a huge advantage, as most of the questions used are quite »classic« in this field. If the teacher expects this, he/she should ask ahead of class if anyone has heard of the term and then invite such students to become »game masters« and deliver hints and keep the score.

ASSESSMENTS (FORMATIVE AND SUMMATIVE)

The teacher will circulate the classroom as he/she facilitate the activity and pay attention of the ensuing discussions and thus assess student progress. The teacher will be writing the scores of the game on the whiteboard – which is a concrete way that can be used for summative assesment of learning progress of the entire class.

INTERCULTURAL CONSIDERATIONS

This activity is meant to be competitive. If the teacher feels it necessary, he/she should emphasise in the debriefing this was meant to be a fun game where the ultimate outcome is to acknowledge the benefits of creative problem solving and critical thinking when listening to new information.

Just taking part is useful and this skill can and should be trained.

It is of particular importance for the teacher to intervene if the classroom becomes too competitive, particularly if there are students from different backgrounds or those who are not speaking their native language.



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APPENDIX: QUESTIONS FOR LATERAL THINKING

These questions should be written on individual pieces of paper and placed in separate envelopes, numbered in progression. One set of envelopes should be prepared for every group of students.

The hints for every questions should also be prepared in advance. They should be written on smaller pieces of paper, prepared so that every group can collect them from the teacher as needed (as instructed in the lesson plan). Every question has corresponding hints and the teacher should prepare so he/she can present them to the groups in such a way that only that group can get them.

QUESTION ONE

A man lives on the tenth floor of a building. Every day he takes the elevator to go down to the ground floor to go to work or to go shopping. When he returns he takes the elevator to the seventh floor and walks up the stairs to reach his apartment on the tenth floor. He hates walking so why does he do it?

HINTS FOR THE QUESTION

1. When it is raining, the man takes the elevator to the top floor without walking.

2. What kind of condition can the man be in that would prevent him from taking the elevator to the top even if he wants to?
3. Consider how the buttons on the elevator are placed and how this affects his decision to walk?

ANSWER TO THE QUESTION

The man is very short and cannot reach the button for the tenth floor.

QUESTION TWO

A man walks into a bar and asks the barman for a glass of water. The barman pulls out a gun and points it at the man. The man says 'Thank you' and walks out. How come?

HINTS FOR THE QUESTION

1. What do you feel if someone points a gun at you?
2. For what purposes would someone want a glass of water?
3. What condition is solved both by drinking and feeling a gun being pointed at you?

ANSWER TO THE QUESTION

The man had hiccups, and the barman frightened him so he stopped.

QUESTION THREE

There is a large wooden barn which is completely empty except for a dead man hanging from the middle of the central rafter. The rope around his neck is ten feet long and his feet are three feet off the ground. The nearest wall is 20 feet away from the man. It is not possible to climb up the walls or along the rafters. The man hanged himself. How did he do it?

HINTS FOR THE QUESTION

1. There is a puddle of water on the floor, below the man.
2. What could he have used to hoist himself up to reach the rope that would disappear on its' own?
3. What dissolves over time into water?

ANSWER TO THE QUESTION

The man stepped on a block of ice that melted over time.

QUESTION FOUR

Five pieces of coal, a carrot and a scarf are lying on the lawn. Nobody put them on the lawn but there is a perfectly logical reason why they should be there. What is it?

HINTS FOR THE QUESTION

1. What can be made using those exact objects?
2. Out of all the possible things that can be made using these materials, which are impermanent?
3. This question is much easier if you know it was winter.

ANSWER TO THE QUESTION

There was a snowman on the lawn. It melted.

QUESTION FIVE

A man came into town on Friday. He stayed there for three days and three nights and left, on Friday.

HINTS FOR THE QUESTION

1. The man actually came on Friday and left on Friday. There are no tricks using time.
2. The man did not use a vehicle, but he did not walk.
3. What was the name of Robinson Crusoe's friend?

ANSWER TO THE QUESTION

The man was a horseback rider. The horse's name was Friday.

APPENDIX: SCORESHEET

The scoresheet here is only provided as an example – the teacher should copy it on the whiteboard ahead of time and the scores should be tallied in front of the whole class as indicated below. If there are more groups, add more columns in the table.

AWARDING POINTS FOR QUESTIONS:

- ANSWER WITHOUT HINTS: **10 points**
- ANSWER AFTER ONE HINT: **5 points**
- ANSWER AFTER TWO HINTS: **3 points**
- ANSWER AFTER THREE HINTS: **1 point**
- NO CORRECT ANSWER: **0 points**

	GROUP 1	GROUP 2	GROUP 3	GROUP 4
QUESTION 1				
QUESTION 2				
QUESTION 3				
QUESTION 4				
QUESTION 5				
TOTAL SCORE				

LESSON THREE: IT SKILLS

LESSON PLAN: **Datasets in Excel and Covid**

SKILL AREA: **Digital skills**

GOALS AND OBJECTIVES

On the surface students will work on datasets using Microsoft Excel and gain proficiency and practice in using the software tool for statistical analysis, however the true purpose of the lesson is to understand basic statistical analysis in real life. This will be a practical exercise on how to take real-life data, understand it and analyze it. Additionally, the purpose of this lesson is to prompt a discussion about the effectiveness of various different approaches in mitigating the Covid-19 epidemic and to model them using the same statistical approaches. Thus, students will take out a fundamental understanding of the reasoning behind measures taken in response to the Covid-19 pandemic.

APPLYING THIS LESSON

This lesson can fit into several core or elective subjects, dealing with current affairs and particularly in **IT or computer science** (using Microsoft Excel) or **Mathematics** (statistics and probability). It is a lesson particularly prescient in the current situation.

METHOD OF INSTRUCTION AND VOCABULARY

The teacher will lead the class in a practical activity and will expect students to conduct a short statistical analysis observing a practical experiment in class. The teacher will guide students through the experiment, provide instruction for them to follow the activities using Microsoft Excel, but defer to the students as they come up with the deductions and interpretation of results.

RESOURCES NEEDED

- **A die** (preferably a large foam one, but any die may be used)
- **Dies for every student pair** (as students will be paired for a part of this activity – see lesson plan for instructions)
- Access to a **whiteboard** (or similar) to track the discussion (see lesson plan for instructions)
- **A worksheet** (included in the appendix of the lesson plan)

- **A classroom with computers and MS Excel** (technically not necessary, as this activity can be done with pen and paper only if the teacher so wishes)

THE LESSON

What is the purpose of this lesson?

What does the teacher want to achieve in this session? What educational outcome is expected?

PRIMARY GOAL: To show how simple statistical methods can be used to gain understanding about a particular situation, also using MS Excel as a tool (though the IT instruction element of this lesson is not the main purpose).

SECONDARY GOAL: To encourage students to fundamentally understand why certain mitigation efforts are in place during the Covid-19 pandemic.

What is needed to deliver this lesson?

Instructions for teachers on things to set up before entering the classroom.

Worksheets with the scenario of the experiment outlined, as explained in this lesson guide

Enough dies for students (ideally also a large foam die, but not necessary). A computer classroom with MS Excel.

PRE-KNOWLEDGE:

Students should already have basic understanding of the Excel software. Students should be able to find probabilities of simple events. Students should understand the probability of event E is equal to:

$$\frac{\text{Number of trials favourable to E}}{\text{Total number of trials in the experiment}} = P(E)$$

Outline of the lesson

Instructions on how to deliver the lesson and how to run the activities.

OVERVIEW: This investigation develops a probability distribution through the design and use of a simulation. It follows the four components of statistical problem solving: formulate a statistical question, design and implement a plan to collect data, analyze the data by measures and graphs, and interpret the results in the

context of the original question. This activity is based on a simulation problem from *The Art and Techniques of Simulation*, published by Dale Seymour and the American Statistical Association.

BRIEF SUMMARY OF THE LESSON:

- Read and discuss the scenario about the spread of flu in an apartment building.
- Formulate the statistical/probabilistic question: “What is an estimate for the probability that all six people who live in an apartment building will get the flu?”
- Demonstrate the steps to conduct a simulation to answer the probabilistic question.
- Have students conduct the simulation using a die or technology and report their results.
- Collect class data in a table, convert the results to relative frequencies and a probability distribution.
- Use the probability distribution to answer the statistical/probabilistic question.

Hand out **Student Worksheet: Flu Epidemic**. Direct students to read the first paragraph in the scenario.

SCENARIO: Did you get a flu vaccine last year? If so, did you still get the flu? Infectious diseases (or diseases that are often caused by a bacteria or virus) are extensively researched in the medical field. These diseases result in colds, seasonal flu, and major epidemics that affect large numbers of people or animals in some cases. In the fall of 1918, a flu pandemic erupted and became one of the greatest loss of lives the world had ever seen. By many accounts, the flu claimed between 2.5% and 5% of the global population. At that time, there was no flu vaccine, no antiviral drugs, and no antibiotics to help lessen the number of patients who got the flu or aid in the recovery from the flu. As a result of this pandemic, countries began to put a greater emphasis on the study of patterns, causes, and effects of diseases. Medical researchers are actively involved in understanding what causes the disease, how it is spread, how long it lasts, and other data related to the health of patients.

Discuss with students the flu scenario and ask what type of precautions they can take to avoid getting the flu.

Ask your students to read the flu example.

FLU EXAMPLE

Consider the following simple example of an infectious disease, like a cold or flu, and how it spreads throughout a small apartment building.

Suppose a strain of the flu has a one-day infection period (i.e., a person with the flu can only infect another person for one day and, after that day, the person can't spread the flu and is immune—that is, once you get the flu, you can't get this strain of flu again). This strain of flu is potent; if a person comes into contact with someone with the flu, that person will get the flu for certain.

Six people live in a small apartment building. One person catches this very infectious strain of flu and randomly encounters one of the other tenants during the infection period, and this second tenant gets this strain of flu. This second tenant infected with the flu visits a third tenant at random during the next day, and this third tenant gets the flu. The process continues with a newly infected person randomly visiting someone who hasn't had the flu or visiting an immune person and the strain of flu dies out. If an infected person visits an immune person, then the spread of the flu will end, as the flu in this example has only a one-day infection period.

Ask your students to summarize how this strain of flu spreads. What is the least number of tenants who could get the flu?

Answer: *Two tenants, The first tenant gets the flu and visits a second tenant, who then goes back and visits the first tenant.*

What is the highest number of tenants who could get the flu?

Answer: *All six tenants*

FORMULATE A STATISTICAL QUESTION: Discuss with your students that one way to investigate an estimate of the number of people who would get the flu in this apartment building is to design and conduct a simulation. A simulation is a procedure developed for answering questions about real problems by running experiments that resemble the real-life situation. Instead of finding a large number of apartment buildings with six apartments and one person with the flu, a simulation could be designed to provide outcomes of the number of people who get the flu.

Ask students to consider the statistical/probabilistic question: “What is an estimate for the probability that all six people who live in an apartment building will get the flu?”

COLLECT APPROPRIATE DATA: To help your students understand the scenario, conduct a simulation involving them.

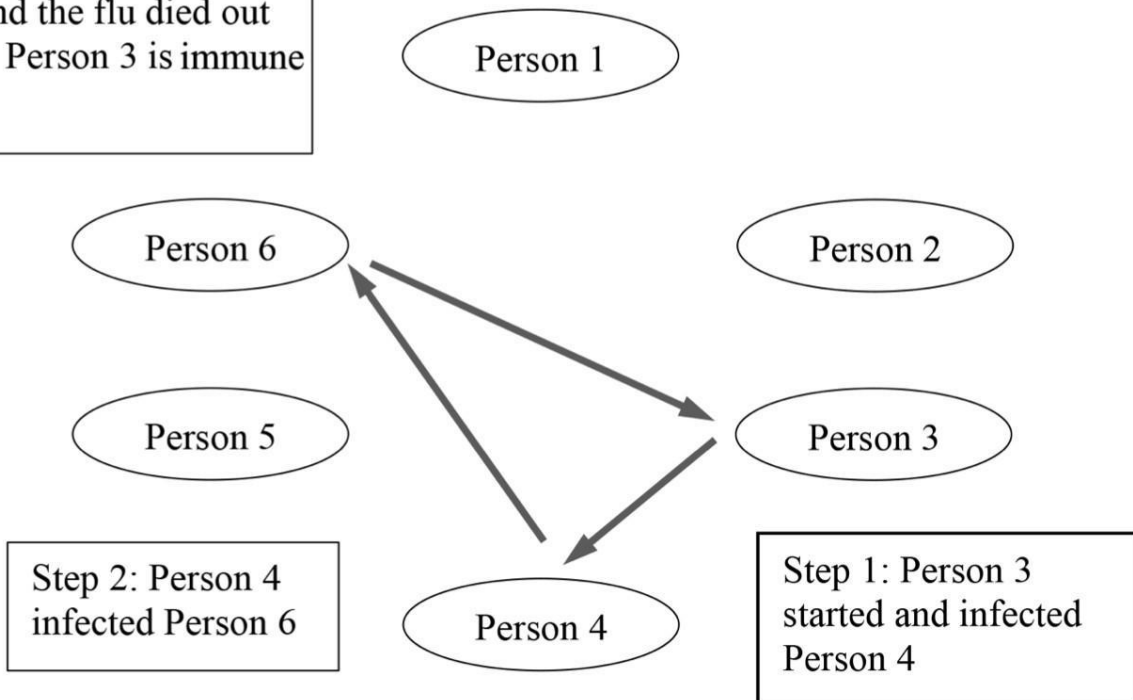
Select six students and have them come to the front of the room. These six students represent the people living in the apartment building. Number each student from 1 to 6.

- **Day 1:** Roll the large foam die to determine Patient Zero, who will have the flu first. For example, if a 3 is rolled, then Person 3 has the flu. Have Person 3 roll the die, and then have Person 3 visit the person whose number is rolled. For example, a 4 is rolled. Remember this flu is potent; if a person is “visited,” they will get the flu. Now two people have gotten the flu—persons 3 and 4. If Person 3 rolled a 3, then Person 3 would roll again since a person can’t visit him/herself.
- **Day 2:** Person 3 is now immune (once you have had the flu, you can’t get it again and you are no longer contagious) and Person 4, who now has the flu rolls a die and visits (infects) the person whose number was selected. For example, Person 6. Three people (3, 4, and 6) now have had the flu, unless Person 4 was to roll a 3. In that case, the flu would die out since the infected person visited a person who already had the flu. If the person rolls his/her own number, have the person roll again since a person can’t visit him/herself.
- **Day 3:** Person 3 and Person 4 are immune. Person 6, who now has the flu, rolls a die and visits a person. Continue until a person visits someone who has already had the flu (i.e., immune) or someone who has not been infected. If the person rolls his or her own number, have the person roll again since a person can’t visit him or herself.

Make a note of the number of people who got the flu.

TEACHER NOTE: Students could also draw six circles— one for each person in the apartment building—and draw lines connecting the circles to show how the flu spreads as the simulation progresses.

Step 3: Person 6 rolled a 3 and the flu died out since Person 3 is immune



This figure illustrates the example above showing one trial in which three people were infected before the flu died out.

Emphasize that the goal is to **design and conduct a simulation to find an estimate for the probability that all six people living in an apartment building will get the flu.**

STEPS TO TAKE:

1. State the problem or statistical/probabilistic question.
2. Define the simple events that form the basis of the simulation.
3. State any underlying conditions that need to be made so the answer to the probabilistic question can be determined.
4. Decide on a model that will be used to match the probabilities. Describe how random numbers will be assigned to match the probabilities described in the problem. Determine what constitutes a trial and what will be recorded.
5. Conduct the first trial.
6. Record the results of the trial.

7. Continue to run trials. Run a large number of trials. Remember to report the result of each trial.
8. Summarize the results of the trials and draw conclusions.

Go through the steps for this simulation using a die or large foam die.

1. State the problem (probabilistic question) so the objective of the simulation is clear. *What is an estimate for the probability all six people living in an apartment building will get the flu?*
2. Define the simple events that form the basis of the simulation. *Infected person randomly visits another person in the apartment building. If a person is randomly visited, they will get the flu, unless they have already had the flu.*
3. State any underlying conditions that need to be made so the answer to the probabilistic question can be determined. *Conditions: Visits are done randomly. Only one person can become infected at a time. Person can infect others for only one day.*
4. Decide on a model that will be used to match the probabilities. Describe how random numbers will be assigned to match the probabilities described in the problem. Determine what constitutes a trial and what will be recorded. *Number the people from 1 to 6. Roll a die to simulate the visit by the infected person. (Persons can't visit themselves.) A trial is rolling the die until the flu dies out—a person with the flu visits someone who is immune (already had the flu). The number of people infected will be recorded.*
5. Define and conduct the first trial. *The first roll of the die determines which person was the first person to get the flu. Continue to roll the die until whoever is the current infected person visits an immune person (someone who has already had the flu). That is, roll until a number (other than the infected person's) is repeated. The trial is then over.*
6. Record the results of the trial. *Record the trial number, the results of each roll, and the number of people infected in a table, as shown below.*
7. Continue to run several more trials. Remember to record the result of each trial. *Repeat steps 5 and 6 a large number of times (at least 50 for the class). Give each pair of students a die and have them conduct at least five trials and collect the class results in a table.*

Trial Number	Who Was Infected (# on Each Roll)	Number of People Infected
1	3,4,2,5,3	4
2	6,6,2,6	2
3		

Explain that an accurate estimate for a probability requires that a large number of trials be conducted (at least 50 for the whole class). Divide the students into groups of two. One person rolls the die and the other records the outcomes in a chart. Ask each group of students to conduct at least five trials.

After the groups have completed at least five trials, collect each group's results in the table. You are collecting the number of people infected for each trial.

Number of People Infected	Frequency
2	
3	
4	
5	
6	
Total	

OPTION: Conduct this part of the note-taking directly in MS Excel and invite students to create a suitable spreadsheet for this on their own.

ANALYSE THE DATA: After the simulation has been run for a large number of trials and the results collected in a table, ask the students to answer questions 1 to 4.

1. Fill in Table using the class simulation results.
2. Construct a dot plot of the class simulation results.

Possible answer: *Sample results from class in Table below.*

3. What is the most likely number of people living in the apartment building who will get the flu?

Possible answer: *Three people*

4. Add a column to Table. Label the column Relative Frequency. Complete the relative frequency column in Table as shown below.

Answer: *Based on the example*

Explain that Table below gives estimates for the relative frequency of various successes (the number of persons who become infected). The relative frequencies for the different number of successes can be thought of as the probability of the number of successes. This table describes a *probability distribution*.

Let X = Number of people infected and $P(X)$ = the probability of x people being infected.

5. What is an estimate for the probability that all six people living in an apartment building will get the flu?

Answer (based on the example in Table below):

0.024, or 2.4%

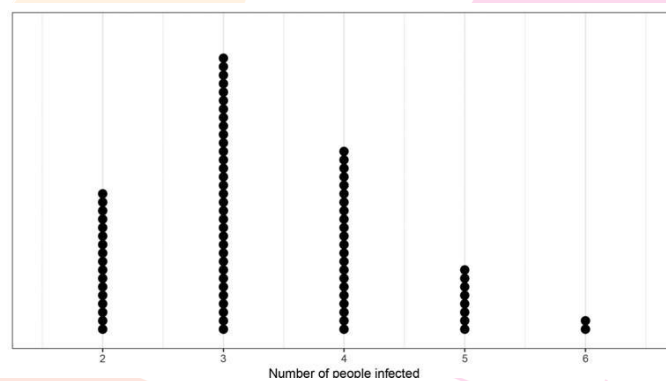
Number of People Infected	Frequency	Relative Frequency
2	17	$17/82 = 0.207$
3	33	$33/82 = 0.402$
4	22	$22/82 = 0.268$
5	8	$8/82 = 0.098$
6	2	$2/82 = 0.024$
Total	82	1.0

INTERPRET THE RESULTS IN THE CONTEXT OF THE ORIGINAL QUESTION:

Ask students to answer this question based on the simulation model they designed and conducted.

6. How did you model the spread of the flu in the apartment building? And how did you use this model to find an estimate for the probability that all six people living in the apartment building will get the flu?

Possible answer: *We modeled the spread of the flu by using a six-sided die. Each side of the die represented one person in the apartment building. We rolled the die and recorded the person who got the flu. We continued until a person visited someone with the flu, which caused the flu to die out. We recorded the number of people who got the flu and repeated the simulation a large number of times. After many trials, we were able to estimate the probability of all six people getting the flu as 2.4%*



SUMMARY: To help summarize this simulation, ask your students the following questions:

7. What model could be used if there were eight people in the apartment building?
Possible answers: *An eight-sided die, randomly selecting numbers from 1 to 8 from a hat or bag, random number generator on computer or calculator*
8. How do you think the probability of all eight people in an apartment building getting the flu compares with the probability of all six people getting the flu? **Answer:** *The probability of eight would be smaller than the probability of six getting the flu.*

Number of People Infected	Frequency	Relative Frequency
2	17	$17/82 = 0.207$
3	33	$33/82 = 0.402$
4	22	$22/82 = 0.268$
5	8	$8/82 = 0.098$
6	2	$2/82 = 0.024$
Total	82	1.0

X	P(X)
2	$17/82 = 0.207$
3	$33/82 = 0.402$
4	$22/82 = 0.268$
5	$8/82 = 0.098$
6	$2/82 = 0.024$
Total	1.0

TEACHER NOTE: All of these calculations should be done using MS Excel.

REFLECTION/DEBRIEF OF THE ACTIVITY:

The teacher will start the discussion by pointing out that if a mitigation effort (masks) is in place that has a $1/6$ chance of decreasing the spread, one number **less** in the roll of the die will result in infection. Another might also have $1/6$ chance in decreasing the spread (opening windows). Another perhaps might have $2/6$ chance in decreasing the spread (maintaining social distance). Furthermore, decreasing the number of visits (avoiding all non-essential contact) also has an effect on the spread.

Using the existing tables in Excel, students are now able to visualize the effect of various prevention measures.

Discussion questions:

- Why are masks/other mitigation steps a good idea? How much effect do they have?

- Why do we still use a mitigation step even if that particular step is not 100% effective for an individual?

At this stage the teacher will point out that the purpose of mitigation efforts is not to prevent individual infections, but rather keep the total number of infections down. A discussion should start about how this information is useful in understanding the current situation.

In his/her own remarks, the teacher may choose to emphasize that conventional wisdom like »masks do not save me from getting infected« is correct on an individual level but wrong on a population level. The same argument can be made about vaccines.

CONCLUSION AND ASSIGNMENTS:

The teacher may choose to conclude this lesson by showing existing statistics about the Covid-19 pandemic in his/her region or country and have a conversation about this.

Tips for the instructor

What are the key things to be aware of when conducting this lesson so it will be successful?

It is highly recommended for the teacher to make the classroom experiments engaging by actually playing out the scenario. For best delivery, the teacher should introduce the scenario, then take the students through one step at a time, as if he/she was telling a story.

As this can be a sensitive topic when it comes to particular harsh mitigation measures the teacher should **take steps to only discuss this from a data, statistics and probability perspective**, refraining from other commentary.

ACCOMODATIONS FOR LANGUAGE LEARNERS, STRIVING READERS AND STUDENTS WITH SPECIAL NEEDS

If the teacher feels certain students have a hard time dealing with excel and modelling, it might be more appropriate to create larger groups.

As this exercise expects some prior knowledge in mathematics and statistics it might be useful to conduct it only in grades that have reached a sufficient level of prior knowledge.

ASSESSMENTS (FORMATIVE AND SUMMATIVE)

The teacher will circulate the classroom as he/she facilitate the activity and moderate the ensuing discussions and thus assess student progress. The teacher may write the results of all the simulations in his/her own excel sheet and on the whiteboard – which is a concrete deliverable that can be used for summative assesment of learning progress of the entire class.

INTERCULTURAL CONSIDERATIONS

This activity is an open discussion about a particularly divisive topic. The teacher should consider in advance if he/she needs to adapt the discussion prompts to better suit the purpose of the learning goals. **It is suggested political or delicate topics are to be avoided** and instead it should only be focused on data and numbers.

It is of particular importance for the teacher to intervene if the ensuing discussion on reliable sources turns against particular students and/or their particular political views in order to have a civilized and open discussion. If he/she expects this to be difficult, the entire scenario can be done with a different topic instead of the flu.

APPENDIX: SIMULATION WORKSHEET FOR STUDENTS

CHANCES OF GETTING THE FLU - SIMULATION STEPS

NAME AND SURNAME: _____

1. State the problem or statistical/probabilistic question.
2. Define the simple events which form the basis of the simulation.
3. State any underlying conditions that need to be made so that the answer to the probabilistic question can be determined.
4. Decide a model that will be used to match the probabilities. Describe how the random numbers will be assigned to match the probabilities described in the problem. Determine what constitutes a trial and what will be recorded.
5. Conduct the first trial.
6. Record the results of the trial.
7. Continue to run trials. Run a large number of trials. Remember to report the result of each trial.
8. Summarize the results of the trials and draw conclusions.

LESSON FOUR: RESEARCH AND DATA PRESENTATION (CONCRETE)

LESSON PLAN: **Research and Curation** (CONCRETE)

SKILL AREA: **Effective communication**

GOALS AND OBJECTIVES

Students will be able to understand how to craft their messages (in verbal and written form) in an engaging way and will be able to find useful information as well as decide which information sources are reliable and which are not. They will be shown how to apply these ideas in everyday life and work.

APPLYING THIS LESSON

This lesson can fit into several core or elective subjects, and particularly in every situation where individual work is required to present information: **Languages** (essay writing, presentations), **Philosophy** (critical discourse, argumentation), **Psychology and Sociology** (essay writing), **Arts** (presentations),... It is suggested this is a standard lesson delivered to every student in high school.

METHOD OF INSTRUCTION AND VOCABULARY

The teacher will lead the class in a practical activity and will expect students to present their own individual work, either in groups or individually. The teacher will provide examples and guidance, but defer to the students' creativity to produce their work in whatever manner they see fit.

RESOURCES NEEDED

- **Example story** presented on the projector or distributed among the students (see lesson plan for materials)
- Access to a **computer or smart phone** with internet connection (for every students or alternatively one per group)
- Access to a **whiteboard** (or similar) to track the discussion (see lesson plan for instructions)
- **Access to the internet** in the classroom for the teacher to show certain websites (see lesson plan for instructions)

THE LESSON

What is the purpose of this lesson?

What does the teacher want to achieve in this session? What educational outcome is expected?

PRIMARY GOAL: To show how it is important to pay attention to how a particular subject is presented, not merely to provide information that is factually correct.

SECONDARY GOAL: To encourage students to critically assess sources of information and provide them with a way to check which source is credible and which source isn't.

What is needed to deliver this lesson?

Instructions for teachers on things to set up before entering the classroom.

An example story for students to experience and learn from, either presented to them in verbal form or through handouts (or both – preferred).

Access to the internet for research (ideally individually for every student, otherwise at least one student per working group should have access to a smartphone or computer. **This lesson may also be conducted in a computer classroom.**

If desired, the classroom should be rearranged prior to the lesson to allow for more creative surroundings.

Outline of the lesson

Instructions on how to deliver the lesson and how to run the activities.

LESSON INTRODUCTION (ANTICIPATORY HOOK/ACCESSING PRIOR

KNOWLEDGE): The teacher will start off by asking the students what they remember from the previous lesson (either the one just before this one, or the last lesson from the day before) from another subject to his/her own:

Please think for a moment about the last lesson you had in school. I would like you as a group to try and recall what you have heard and what you remember from it.

The teacher should ask specifically about the topic of the last lesson, then proceed asking what was actually discussed and then even more specifically about words and sentences the teacher used in it. **After this, the teacher should point out that the lesson was 45 minutes long, and took place only moments ago/a day before**

and that in principle it should be easy to remember exactly what was discussed – that is the point of school after all.

*I am sure that a human brain is perfectly capable of remembering what took place in the previous lesson – yet at the same time it is obvious, the **vast majority** of things spoken of have been forgotten and thus clearly were not effective as a means of conveying information, much less learning.*

How is that possible? Why is it so?

The teacher may choose to lead a short discussion about this or proceed to the next phase.

THE MOST MEMORABLE MESSAGE: The teacher will tell the students that he/she has prepared a story for them and will read it out aloud and/or show it on the projector for them.

I will now read a story for you and I would love to hear what you think about it. Please feel free to just listen to it, you do not have to write anything down.

A friend of a friend of mine is a frequent business traveler. I will not mention his name. Dave was recently in an airport in Las Vegas returning from an important meeting. Afterwards he had some time to kill before his flight, so he went to the airport bar for a drink.

He'd just finished one drink when an attractive woman approached and asked if she could buy him another. He was surprised but flattered. Sure, he said. The woman walked to the bar and brought back two drinks – one for her and one for him. He thanked her and took a sip. And that was the last thing he remembered.

Rather, that was the last thing he remembered until he woke up, disoriented, lying in a hotel bathtub, his body submerged in ice.

He looked around frantically, trying to figure out where he was and how he got there. Then he spotted the note:

DON'T MOVE, CALL 911.

A cell phone rested on a small table beside the bathtub. He picked it up and called 911, his fingers numb and clumsy from the ice. The operator seemed oddly familiar with his situation. She said, »Sir, I want you to reach behind you, slowly and carefully. Is there a tube protruding from your lower back?«

Anxious, he felt around behind him. Sure enough, there was a tube.

The operator said, »Sir, don't panic, but one of your kidneys has been harvested. There's a ring of organ thieves operating in this city, and they got to you. Paramedics are on their way. Don't move until they arrive.«

The teacher should then explain that this story is made up. The friend does not exist in real life. However, **this story is taken from one of the most well known urban legends**, that was the basis of one of the first, and the most effective chain emails in history.

When Yahoo Mail became the first free email program back in 1998, this email message was forwarded to over 2.500.000 people in USA (at a time when only about 10.000.000 people used email). It was in the Guinness book of legends for the most spread email for the next 5 years.

At this point, after the shock dies down in the classroom, the teacher should ask the students why is this such an interesting story and how come so many people felt they had to forward it to their contacts?

Students will probably mention something about:

- The drugged drink
- The ice-filled bathtub
- The kidney heist punchline
- A friend of a friend from Las Vegas

The teacher should then conclude the discussion with the following question: **will students remember this particular story?** (more than the lesson they heard just before).

After another round of discussion the teacher should point out that this is a story that just »sticks«. Is this a fair comparison – an urban legend to a school lesson? Of course not. But here is where things get interesting: Think of our two examples as two poles on a spectrum on memorability. Maybe this is perfectly natural: some ideas are inherently interesting. A gang of organ thieves – inherently interesting. 3rd period in school – inherently boring.

It is not our goal to say school is boring, but rather that every kind of communication can be made more interesting with effort, because there are some tricks that can be used in order to make it more so – and thus, more memorable, more engaging and ultimately more effective.

TRICKS TO MAKE YOUR STORIES STICK: The teacher should point out there are a number of principles that can be used in communication to immediately improve the quality of every bit of communication. These are:

PRINCIPLE 1: SIMPLICITY

How do we find the essential core of our ideas? A successful defense lawyer says, “If you argue ten points, even if each is a good point, when they get back to the jury room they won’t remember any.” To strip an idea down to its core, we must be masters of exclusion. We must relentlessly prioritize. Saying something short is not the mission—sound bites are not the ideal. Proverbs are the ideal. We must create ideas that are both simple *and* profound. The Golden Rule is the ultimate model of simplicity: a one-sentence statement so profound that an individual could spend a lifetime learning to follow it.

PRINCIPLE 2: UNEXPECTEDNESS

How do we get our audience to pay attention to our ideas, and how do we maintain their interest when we need time to get the ideas across? We need to violate people’s expectations. We need to be counterintuitive. A bag of popcorn is as unhealthy as *a whole day’s worth of fatty foods!* We can use surprise—an emotion whose function is to increase alertness and cause focus—to grab people’s attention. But surprise doesn’t last. For our idea to endure, we must generate *interest* and *curiosity*. How do you keep students engaged during the forty-eighth history class of the year? We can engage people’s curiosity over a long period of time by systematically “opening gaps” in their knowledge—and then filling those gaps.

PRINCIPLE 3: CONCRETENESS

How do we make our ideas clear? We must explain our ideas in terms of human actions, in terms of sensory information. This is where so much business communication goes awry. Mission statements, synergies, strategies, visions—they are often ambiguous to the point of being meaningless. Naturally sticky ideas are full of concrete images—ice-filled bathtubs, apples with razors—because our brains are wired to remember concrete data. In proverbs, abstract truths are often encoded in concrete language: “A bird in hand is worth two in the bush.” Speaking concretely is the only way to ensure that our idea will mean the same thing to everyone in our audience.

PRINCIPLE 4: CREDIBILITY

How do we make people believe our ideas? When the former surgeon general C. Everett Koop talks about a public-health issue, most people accept his ideas without skepticism. But in most day-to-day situations we don’t enjoy this authority. Sticky ideas have to carry their own credentials. We need ways to help people test our ideas for themselves—a “try before you buy” philosophy for the world of ideas. When we’re trying to build a case for something, most of us instinctively grasp for hard numbers. But in many cases this is exactly the wrong approach. In the sole U.S. presidential debate in 1980 between Ronald Reagan and Jimmy Carter, Reagan could have cited innumerable statistics demonstrating the sluggishness of

the economy. Instead, he asked a simple question that allowed voters to test for themselves: “Before you vote, ask yourself if you are better off today than you were four years ago.”

PRINCIPLE 5: EMOTIONS

How do we get people to care about our ideas? We make them *feel* something. In the case of movie popcorn, we make them feel disgusted by its unhealthiness. The statistic “37 grams” doesn’t elicit any emotions. Research shows that people are more likely to make a charitable gift to a single needy individual than to an entire impoverished region. We are wired to feel things for people, not for abstractions.

Sometimes the hard part is finding the right emotion to harness. For instance, it’s difficult to get teenagers to quit smoking by instilling in them a fear of the consequences, but it’s easier to get them to quit by tapping into their resentment of the duplicity of Big Tobacco.

PRINCIPLE 6: STORIES

How do we get people to act on our ideas? We tell stories. Firefighters naturally swap stories after every fire, and by doing so they multiply their experience; after years of hearing stories, they have a richer, more complete mental catalog of critical situations they might confront during a fire and the appropriate responses to those situations. Research shows that mentally rehearsing a situation helps us perform better when we encounter that situation in the physical environment.

Similarly, hearing stories acts as a kind of mental flight simulator, preparing us to respond more quickly and effectively.

The teacher should present these in any way he/she feels best. This may be just quickly noted for the class, or presented on the whiteboard, or alternatively (if there is time) expanded with practical examples.

TEACHER NOTE: These principles come out of a book »Made to Stick« by prof. Chip Heath of Stanford. This book includes examples for all principles as well as practical exercises that may be used to expand on this point.

The students should pay attention to these principles and remember an additional part of the puzzle for effective communication. **The teacher should point out these points perfectly explains the reason why the urban legend from before was so effective.** The teacher should ask the students to point out which principles corresponded to which part of the story.

To conclude this part of the lesson, the teacher should point out that the purpose of most communication is **not to explain everything and tell as much as possible.**

Instead, the best you can do is to understand that most of the people will forget most of the message. Therefore it stands to reason **the messenger should strive to**

engage the listeners and create interest so they will be motivated to dive deeper and engage with the content themselves due to their intrinsic motivation.

CLASSROOM EXERCISE (FINDING INTERESTING ELEMENTS IN ANY TOPIC):

The students will be invited to do a short exercise based on the suggestions just learned. The teacher will present a topic and ask the students to research it briefly online in order to find an interesting and creative approach to it and present it in an engaging manner.

Set-up: The teacher will tell the students they will have 20 minutes to research a given topic and create a brief 10-15 sentence written or 30sec-1min oral presentation on a topic that will be given to them. Then they will present it in class.

Ideally, this is an individual exercise, as it is important to force every single student to think about adapting the material they found in an engaging narrative. However, group work also works and it is up to the teacher to decide what works best in a particular situation.

The topic: The topic proposed for this lesson is **CONCRETE** (the building material). This topic can be replaced by anything else the teacher might consider more applicable to his/her class. However a good topic should be wide enough to allow for creative approaches and searching for unusual information or facts, but narrow enough so it does not allow for the students to just pick a very random part of trivia (for example: »Life«).

It is also suggested the whole class focuses on **the same topic** as this will show, how much unusual information can be found when a lot of effort is put towards this.

STEP ONE: The teacher delivers the instructions and asks for the students to go online and search for interesting facts available on the topic, and then decide on a few that are so sticky (based on the criteria above), people will actually be interested to learn about it.

STEP TWO: The teacher instructs the students they may use the internet for this activity and can do whatever they want and find whatever information they desire to complete this exercise. **The important thing to mention here is the students are not required to present a complete academic overview of the topic, but rather find an engaging »hook« that would encourage the listeners to ask »Wow, this is interesting, tell me more!«**

STEP THREE: The teacher should circle around the room and provide guidance and support, but allow students freedom to interpret the rules of this activity as they see fit.

For the proposed topic to be researched (concrete) some interesting pieces of information the teacher should have are:

- Concrete is the most ubiquitous chemical on the planet
- Concrete is responsible for the economic might of the Roman Empire
- Concrete is the heaviest material on the planet (cumulatively)
- Fred Flintstone is the supposed creator of concrete, thus ending the stone age ☺

STEP FOUR: After the time runs out, the students should be asked to deliver short presentations and tell the class about the stories they created. The teacher should commend their efforts and mention at several points the things learned are interesting and exciting. He/she should be very encouraging, as **this is probably quite new for the students**, compared to the way they usually approach presentations and assignments.

STEP FIVE: The teacher should congratulate everyone who took part and (optionally) ask students to list the most unusual things they have learned about the topic at hand.

STEP SIX (OPTIONAL): The teacher may decide it is a good idea to tell his/her own story about concrete that fits the criteria for a compelling and engaging message.

TEACHER NOTE: Care should be taken that this story is presented in such a way that students do not compare their short work with this story that was especially researched and prepared ahead of time as this may give some students the wrong impression – that their research is inadequate. Certainly, this story should be presented after everyone else has shown their stories and they were congratulated.

I will now read a story about Concrete that I have here. It has been created with the concepts we have discussed before. Understand this is not meant as the »right« answer, and you should not be comparing your stories to this one. It is just another creative take on this topic, that I found particularly interesting. Please feel free to just listen to it, you do not have to write anything down. Additionally, pay attention to elements of this story that »stick.«

Millenia ago, and millions of years later, the thing that made us could also save us

Ok, I'll start with a bit of a challenge. Let's imagine it's 100 million years from now, far, far into the future. Humans as species have long since disappeared. The steel in our buildings will have long since rusted away, all the homes we've made out of wood will have long since disintegrated, almost all of our bones and everything else will be gone.

All that will be left of our time, the key marker of everything human beings have done will be this smushed layer of rock that some kind of future geologists will be able to notice. That rock will be concrete.

If we imagine some beings of the future, as they dig through our Earth, to figure out what came before – this is all they will find left of our time on this planet. This will be known as the age of concrete.

Surely, concrete is a boring topic, but I want to share a story that will try to convince you that this material is surprisingly interesting.

First, I would like to take you back to the ancient past. I want to tell you how human beings harnessed...

...but wait, I need to give you some context. What, precisely is this thing called concrete? Well, it's a mixture – of something called cement, and then a bunch of little rocks or sand, and water. And you mix them together and they harden into this rock substance known as concrete. And the key to all this is that substance – cement. That's what turns loose gravel and sand and water into a rock that can last for millions and millions of years.

So, let's start with how human beings harnessed cement. If we paid attention at all during ancient history, they told us humans started as hunter-gatherers.

Cement, we thought, came really late in human history because to make it you needed a fire that's about 2.000 degrees hot and archaeologists assumed that there is no way that primitive hunters and gatherers could get a fire that hot. But then just the last few years there's been a series of discoveries that have just rocked the world of archaeology. We now know, that long before human beings ever cooked bread, when we were still hunter gatherers living in caves, we were somehow making cement.

To explain how is that possible, we need to go to Turkey. Archaeologists say that human beings first left the caves to live elsewhere somewhere in the foothills of the Taurus mountains. That's where the first villages started.

Resources were abundant in Africa, people did not need to band together there...

So, a group of archaeologists came up with evidence for this really interesting theory. Apparently, at around 12.000 years ago, long before animals became fully domesticated or humans were cultivating plants, certainly before we were heating food, somebody, it might have been just one person going for a walk one day, saw a lightning strike hit some limestone and then they found powder there.

And somehow they got thus powder and water together. And this is cement. And you can just imagine, like someone thinking, »hey, that's cool,« ...just imagine how that must be like to some hunter gatherer walking through the fields one day.

And so we don't know exactly how it happened, it might have been one person seeing this and saying, »hey, I want to do this again,« maybe it was a group of people, but basically the idea is, that they realized lightning did that, lightning's hot ...we need to heat this limestone up.

And we obviously don't know exactly how it worked, but I like to imagine it was some early genius, some Stone-age Thomas Edison who spent, maybe, 20 years experimenting and experimenting, and eventually finding a way to build a giant oven. We call it a burgundy bottle kiln, it kind of looks like the top of a bottle of wine, and they throw the limestone in there and they put lots and lots of wood inside, until it gets super super hot, and then, he or she, we don't know... would then have this powder and would mix it with water and then they could start forming rocks in specific shapes.

You could imagine that other people would see this person, this shaman or whatever, as some kind of magician – that could control fire and rock.

So the theory is that 12.000 years ago in this hilly area of southern Turkey, there's this crazy fire kiln thing going on, there's this limestone being converted into sand, which is being converted into human-controlled rocks, and hunter gatherers from all over began coming there. It became a sacred place, a holy place, and so what we imagine is hunter gatherers from all around living in tiny little kinship groups would come together and work together to chop down trees and help this magic happen.

And if you go to that place in Turkey now, you will still find the remains and see it – that first building, the first shrine, the first church, made out of those rocks that humans could finally control and shape.

And it seems very possible that act brought people together above the family organization for the first time into something like the beginning of civilization.

And shockingly, it's only centuries later, hundreds of years later, that they start thinking like, »hey, we got all this heat, let's see what hot meat tastes like. Let's start smashing some of these grasses, and mix those with water, and make bread.«

It seems like this concrete was what actually originally brought people together. Concrete may very well be the reason for modern civilization. Cement/concrete is the first time people that were not directly related, gathered together for a common purpose. And we can clearly see archaeological proof that where you see cement, few centuries later you see small villages. And few centuries after that, you see large cities. Eventually, you see a large civilization. We know for sure, because there are DNA tests that prove this, that all the wheat in the world comes from right there. So wheat is domesticated right there. The first sheep and the first goat also come from there, there's even evidence the Indo-European languages come from that area too. So all the key attributes of modern civilization come from that little place in southeastern Turkey, where the first cement was made and turned into concrete.

Fascinating stuff – we walk down pavements, we scrape our knees when we fall down on it, but we never consider concrete has ...a history and a future. I guess that's a positive thing, but there is also a huge negative effect of concrete on human life.

Immediately after that well known recent earthquake in Haiti, among crumbled buildings, crumbled shopping malls, crumbled hotels, with metal rebar sticking everywhere... even the Presidential Palace there was destroyed.

But around the world we kept hearing one sentence being repeated over and over and over again – from the engineers, from the politicians, from the people on the street: »this was not a natural disaster, this was a concrete disaster.«

The earthquake in Sichuan, China back in 2008, the earthquake in 2005 in Pakistan, these are generally not natural disasters. These are concrete disasters. All for the same reason, and it's a very simple, yet horrible reason – economically there's a huge incentive to make concrete badly. Cement is very expensive. And so, if you're an unscrupulous builder, trying to find a cheaper way to do it... you

cut back, you hold back a little cement, it looks the same, nobody will notice initially, but it's not going to be as sturdy. And so the buildings shatter.

Cement binds the concrete, and it is absolutely the most important part of the mixture: fly ash, stone, sand, water, admixtures, chemicals... and about 15 percent of cement. Without cement, there is no binding. If you lower the percentage to about 10 percent, you could save a lot of money. It gets tricky, and an engineer needs to tell you the exact mixture. And you don't want to cheat.

Because in Europe, you are going to get caught. But in the third world, and poorer areas, it's a different story.

Another thing to notice in poor countries is the cement and concrete business is huge. It's a major part of the economies there.

Here's a way to think about it: If we go to President Obama and asked him, »who is the top concrete guy in America?« and of course he would say, »I don't know.« And if you asked him, well, who are the top business people, he'd say, »well I guess, the Google guys, the head of Goldman Sachs, the head of General Electric.«

But if you go up to the president of Haiti, the president of Iraq, the president of almost any country in sub-saharan Africa, or much of southeast Asia, Latin America and you ask, »who is the top concrete guy?« he will definitely know. In fact, if you went up to Rene Preval, the president of Haiti at the time of the earthquake and asked who are the top concrete people in his country, he'd definitely know one of them, because it was his wife's family, CDG Concrete.

You often hear that in poor countries, the richest people run the concrete business. And broadly, around the world you often see these powerful families also owning the companies that buy the concrete to make the buildings and hospitals and schools and airports.

Concrete done wrong is one of the worst disasters for humanity. And nobody proved that in Haiti, but... certainly around the world there is a lot of corruption surrounding it. Very often it is just a tiny handful of families controlling all of that concrete in such countries.

The last thing I want to say, just because it is important to me, I don't know if it's the most interesting, but cement production for concrete is a major contributor to CO2 emissions, to dirtying up our air.

The process itself inside those large furnaces in cement factories, what is happening chemically inside, is that the limestone is releasing carbon dioxide as it converts into this new material called cement. And this is much more than

airplanes. It's number three: after cars, and after coal. It's the next big, big, big one.

And there is something amazing about cement that makes it totally different from every other greenhouse emitting product. Which is, that actually, it can be a net positive. There are ways of making cement where that same process that releases CO₂ actually absorbs it. There are ways of embedding these materials within the concrete of a building, that when it's hot it absorbs heat and cools the building and when it's cold it releases heat. So it eliminates the need for air conditioning and heating, and so on.

So the last thing I would say is, we all care about the environment nowadays, we hear a lot about electric cars, we support Tesla, we try to move away from coal... have you ever heard of anyone talk about cement or concrete? We ought to do something about this, don't you think?

Well, there you have it – something interesting about concrete that you might not have heard before!

REFLECTION/DEBRIEF OF THE ACTIVITY:

The teacher will start the discussion by asking the students how they came up with their initial “stories” and how did they choose those particular ones. It is possible a lot of students will have a hard time doing this as it is a very different approach to just finding information.

Discussion questions:

- Why was this particularly hard for you or not?
- Those that found the most interesting pieces of information, where did you look?
- Can you suggest a »standard approach« for finding interesting information?

At this stage the teacher will ask the final question: »Are you sure all information presented today was factually true?« A discussion should start about sourcing every bit of information that is presented and then also about how to analyse particular sources.

In his/her own remarks, the teacher may choose to emphasize some important points. First, every unusual piece of information should be backed up by a source if one thinks they might not be believed. Second, not every source is credible, so one

should always strive to check more unusual pieces of information in multiple sources.

The teacher can now point out that fortunately there are organizations that provide lists of sources with commentary on their credibility and insights about how to evaluate unknown sources. **The best resource for this is the Wikimedia Foundation** that maintains an updated list of acceptable sources for its' Wikipedia Editors.

Wikipedia is a citizen-written encyclopaedia and for this reason, they have perhaps the most stringent rules about sourcing available on the internet. Their editors (people who check submissions from individuals) are instructed to refuse any contribution if it is not (1) sourced, and (2) in 100% accordance with the acceptable source guide. This is widely considered as the best and most neutral tool to analyze media and online sources.

The teacher should show the list of sources on the projection and invite students to look for media outlets and websites they recognize on that list.

Wikipedia guide to reliable sources: https://en.wikipedia.org/wiki/Wikipedia:Reliable_sources
The link to the sourcing guide where reliable sources are listed is available here:
https://en.wikipedia.org/wiki/Wikipedia:Reliable_sources/Perennial_sources#Sources

REFLECTION II. (APPLYING THE LESSON):

As a final point of discussion, the teacher may propose that students should (1) always do this part of research for interesting topics prior to any oral or written assignment and introduce the topic with an interesting »hook.« and (2) always source their information and provide links, as well as follow the guidelines to good sourcing, avoiding disputable sources and provide multiple sources when this is necessary.

CONCLUSION AND ASSIGNMENTS:

The teacher may choose to assign reading on this topic or assign homework where students are instructed to create an engaging message that »sticks« for another topic. Furthermore **the teachers should consider requiring this exercise in every subsequent written or oral presentation** in order to train this skill among the students.

Tips for the instructor

What are the key things to be aware of when conducting this lesson so it will be successful?

It is highly recommended for the teacher to make the classroom experiments engaging by announcing the steps in a gameshow-like manner. For best delivery, the teacher should introduce the game, then only take the students through one step at a time, not revealing what is going to happen in the next step. It is recommended to use a timer for this activity.

In situations where the discussion about sourcing may touch upon current political affairs and fake media examples, the teacher should **avoid political commentary**, but instead stick to the fact that everything written in the media can be independently checked by the students. If necessary, this may be done as a separate classroom activity.

ACCOMODATIONS FOR LANGUAGE LEARNERS, STRIVING READERS AND STUDENTS WITH SPECIAL NEEDS

If the teacher feels certain students have a hard time searching for information online, it might be more appropriate to create working groups. It is important to be mindful about the economic status of individual students and if it is not realistic to expect everyone will have access to the internet on their phones, it might be better to conduct this lesson in a computer classroom.

As this is an unstructured activity, the teacher should be mindful to less outspoken students and prompt them to take part in the conversation as well.

ASSESSMENTS (FORMATIVE AND SUMMATIVE)

The teacher will circulate the classroom as he/she facilitate the activity and moderate the ensuing discussions and thus assess student progress. The teacher may use the written summary of the suggestions about interesting fact on the topic being researched during presentations to assess to what level the students grasped the final concept.

INTERCULTURAL CONSIDERATIONS

This activity is an open discussion and therefore may lead to a topical discussion on various current issues. The teacher should consider in advance if he/she needs to adapt the discussion prompts to better suit the purpose of the learning goals. **It is suggested political or delicate topics are to be avoided** as topics for research – thus »CONCRETE« is proposed here.

It is of particular importance for the teacher to intervene if the ensuing discussion on reliable sources turns against particular students and/or their particular national, familial, sexual or other identities in order to have a civilized and open discussion. Consideration should be taken before delivering this lesson in countries with recent abrupt changes in the media landscape or active authoritarian regimes.



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LESSON FIVE: CRITICAL THINKING

LESSON PLAN: **Autocracy vs. Democracy**

SKILL AREA: **Critical Thinking**

GOALS AND OBJECTIVES

Students will be able to hold a real conversation about the benefits and shortcomings of the autocratic and democratic leadership and governance approaches. They will be able to describe the key differences, but more importantly, they will be empowered to form their own opinion on the subject.

APPLYING THIS LESSON

This lesson can fit into several core or elective subjects: **History** (rise of democracy, english revolution, 21st century), **Sociology** (ethics and political science), **Psychology** (behavioral science, society), **Civics** (governmental structure, democratic process),... With slight adaptations to the discussion questions it may apply to any lesson that requires an in depth discussion of this topic.

METHOD OF INSTRUCTION AND VOCABULARY

The teacher will lead the class to participate in an activity and will be a facilitator, rather than lecturer. He/she will attempt to always defer judgement and instead give space to the students to voice their opinion and come to conclusions through discussion. It is imperative for the facilitator to use neutral language when commenting individual contributions of students.

RESOURCES NEEDED

- **Discussion prompts** written or printed out on pieces of paper (see lesson plan for materials)
- One pack of **playing cards** (regular)
- Access to a **whiteboard** (or similar) to track the discussion (see lesson plan for instructions)
- A **classroom that allows some movement** of the students (see lesson plan for preparation instructions)

- A bag/box of **candy** (pick individually wrapped cheap candy in as large a quantity as is reasonable – aim for 3-5pcs. per student); **tokens** may also be used

THE LESSON

What is the purpose of this lesson?

What does the teacher want to achieve in this session? What educational outcome is expected?

PRIMARY GOAL: To stimulate a critical discussion and true understanding of the underlying principles under authoritarian leadership and democratic ideals. To provide context to the broader discussion of political choices between individualism and the collective, and fundamentally, to provide an engaging introduction into the civics topics.

SECONDARY GOAL: To warn students of the dangers of simple appeals to unity and to think critically about multiple sides of every argument – in particular when consuming media.

What is needed to deliver this lesson?

Instructions for teachers on things to set up before entering the classroom.

Pairs of discussion prompts to be hung on opposing walls (as instructed). It works if they are handwritten on standard letter paper, but they may be printed out ahead of time.

A standard pack of cards (poker, bridge, rummy) ... The teacher should take out the trump cards (JOKER) and shuffle the deck. In smaller groups the teacher should make sure **all the face cards (King, Queen, Jack) will always be dealt.**

If necessary, the classroom should be rearranged prior to the lesson to allow for movement during the activity (as indicated).

Outline of the lesson

Instructions on how to deliver the lesson and how to run the activities.

LESSON INTRODUCTION (ANTICIPATORY HOOK/ACCESSING PRIOR KNOWLEDGE): The teacher will start off by telling the class this lesson will introduce a very famous and well-known topic: Totalitarian dictatorship vs. Popular democracy. Students will be told the following introductory story:

Let me read something to you, from a 2.800 year old stone, found in a remote village in Iran: ...and their villages I pillaged, their women I raped and their children I enslaved. Their city I conquered and none survived. I defiled their Temple and razed it to the ground...

I bet if you would have asked who was the most respected and beloved person in history, that pillager, rapist and conqueror would be right on the top of the list. He is Cyrus the great, the founder of the first Persian Empire, who was an enlightened, liberal leader that built libraries, encouraged trade, supported science... This guy is so beloved there are no historical references of anyone ever saying anything bad about him for a millenium. The Greeks loved him. In the Old Testament he is practically proclaimed as God.

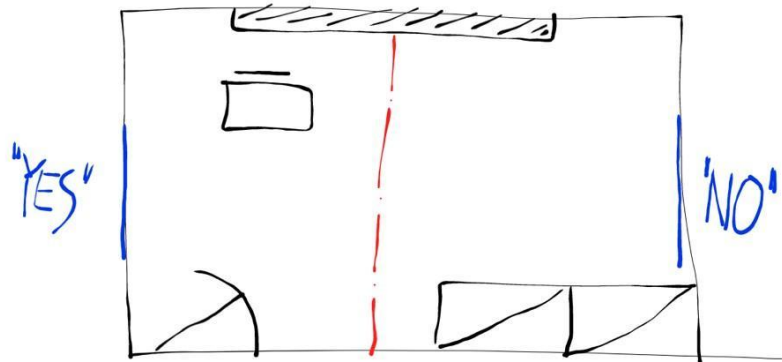
So, what gives? How can you be both good and bad at the same time?

The teacher may choose to lead a short discussion or proceed to the first activity.

THE DISCUSSION GAME: The teacher will preface this activity by asking students to stand up and (if practical) spread around the room. He/she will then instruct the students on the rules of this game.

The rules of the game are as follows: The teacher will introduce two opposing statements in a pair to the students. They will then be posted on opposite sides of the classroom. The students will be instructed to physically move to the side of the classroom that corresponds to the statement they agree with. Afterwards, both sides will be asked to talk about why they chose that statement. At all times, students will have the chance to switch sides. The discussion for each pair will last 5-7 minutes.

Classroom setup: As the teacher will be asking students to move around, considerations should be given to spacing. Preparations should be made to hang the statements on opposite sides of the classroom.



While it would be possible to conduct the same exercise without movement, the kinetic action and visible separation significantly improve the quality of the ensuing discussion.

The teacher will explain that the difference between an authoritarian regime and a democratic one is not as black and white as between Darth Vader and Luke Skywalker or Lord Voldemort and Albus Dumbledore. A game will be introduced to explore this issue in more detail – and by using real life examples.

DISCUSSION PROMPTS:

(The teacher may choose as many or as few as he/she requires for the session)

»It is nearly always more efficient to have one person in charge and managing things«	»It is nearly always better to include every member in deciding things that concern everyone«
»Everyone is mostly responsible for their circumstances through their action«	»Factors outside people's control are mostly responsible for everyone's circumstances«
»It is only natural to form closer bonds with those near us and like us«	»It is only natural that people are the same everywhere and, given time, we can bond with anyone«
»In times of crisis, the leader may choose to lie to his or her people«	»There should be no place for untruths in public life«
»Some property may be taken from the super-rich to pay for public services«	»People's property is their own and the state may never take it«
»The police should be allowed to monitor conversations of every foreigner if my country is at risk«	»No authority should ever be allowed to conduct surveillance on anyone without probable cause«

»Some kinds of people are just better at some things«	»Anyone can do just about anything, no matter their origin«
»It is okay to sacrifice a life for the common cause«	»We must always strive to save every life, no matter the cost«

It is the primary role of the teacher to encourage a discussion and give voice to different opinions. **The teacher will refrain from contributing his or her own personal views during the student discussion** (there will be time for this in the conclusion of the lesson, should the teacher feel this is necessary).

At this point, the teacher will draw attention to the complexity of particular situations and concede that it may never be possible to resolve any one of these questions definitively. However, just an analysis of arguments in favour or against both of these approaches does not give us the full picture, and for this reason, another activity will be introduced.

CLASSROOM EXPERIMENT (THE RESOURCE DISTRIBUTION GAME):

The teacher will run this experiment twice (once under each set of rulers). It takes about 20 to 30 minutes to complete this simulation.

Experiment #1: Dictatorship version

Assigning roles: The teacher will distribute playing cards to the students, making sure to deal all of the face cards (kings, queens, and jacks). The teacher will tell the students that the king, queen, and jack of spades are the **rulers** (the top decision-makers); all other royal cards are the **elites** (nine in total; this could represent the military, a ruling party, or a royal family). All numbered cards, including aces, are the **citizens**.

Game play:

1. Have the three **rulers** divide up a fixed number of units of a “resource” (e.g. candy) between the three groups: rulers, elites, and citizens. They only choose across these broad categories; within each category, resources are distributed as equally as possible. For this step they may leave the classroom to confer with each other.
2. Once the distribution of resources is announced, the **elites** can decide to accept or reject the offer by majority vote. If they reject, the rulers are deposed in a coup; the rulers all die and get nothing. Those who voted to reject the offer can decide a new distribution of resources between elites and

citizens. However, since a coup disrupts the economy, $\frac{2}{3}$ of the resources taken by the rulers have been destroyed leaving the rest to divvy up.

3. The **citizens** can accept the distribution, or reject it by revolting. Since the rulers and elites control the guns, citizens need a supermajority ($\frac{2}{3}$ or $\frac{3}{4}$) to revolt. If they revolt, the rulers and elites all die, and one suit among the citizens picked at random will die. Moreover, since war destroys the economy, $\frac{1}{2}$ of the resources have been destroyed leaving the rest for the survivors.

TEACHER NOTE: It works best if students are told about the loss of resources only after the decision to revolt or depose has been made so it does not influence the decision.

Experiment #2: Democracy version

Assigning roles: Distribute playing cards to the students, making sure to deal all of the face cards. Tell the students that the king, queen, and jack of spades are the **executives** (this represents the top decision-makers); all other royal cards are the **legislature** (9 in total); all numbered cards, including aces, are the **citizens**.

Game play:

1. Have the three **executives** divide up a fixed number of units of a “resource” between the three groups: executives, legislature, and citizens. They only choose across these broad categories; within each category, resources are distributed as equally as possible. For this step they may leave the classroom to confer with each other.
2. Once the distribution of resources is announced, the **legislature** can decide to accept or reject the offer by majority vote. If they reject, the executives are deposed (impeachment, vote of no confidence) and receive nothing. Those who voted to reject the offer can decide a new distribution of resources between the legislature and citizens. As this is a constitutional procedure, no resources are lost.
3. The **citizens** can accept the distribution, or reject it through a majority vote. If they reject the distribution, the executive and legislature are deposed, receiving zero resources; each citizen receives 2 resources.

TEACHER NOTE: Students should be told during round 3 that a deposition of the legislature incurs a redistribution where everyone gets 2 resources.

REFLECTION/DEBRIEF OF THE ACTIVITY:

The teacher will start the discussion by asking the rulers or executives how they came up with their initial “offer” and who they felt accountable to. (A situation might play out when, the rulers in the authoritarian scenario decided to be “fair” and distribute the resources evenly, but this caused them to suffer a coup. That leads to a nice discussion about incentives to be “good” or not.) The teacher will then ask the legislature in the democratic scenario why they voted the way they did; and do the same of the citizens. What offer would have kept them happy? What offer would have caused a “no” vote?

Discussion questions:

- To whom are leaders accountable in democratic and autocratic settings?
- What are the advantages of voting versus violence to remove leaders?
- Which set of rules led to more “just” outcomes?

At this stage the teacher will write the key insights from the discussion on the whiteboard and lead the students in forming conclusions. Only at this stage may the teacher offer his/her opinions and summarize the discussion pointing attention to arguments he/she deems most significant.

In his/her own remarks, the teacher may choose to emphasize two basic points. First, democratic governments are held accountable by (typically) a majority of citizens, while autocrats must focus on a narrower constituency. Second, unpopular democratic governments can be removed by the vote, while removing autocrats often involves violence. This classroom simulation was intended to demonstrate these differences – **outlining the inherent danger of autocratic methods.**

The teacher can now point out that in addition to all the previous advantages and disadvantages of autocratic and democratic rule, there is an additional risk of loss due to the unpredictable and indiscriminate way resources are distributed and opportunities are given.

The final argument may be made by the teacher that history has shown that **every autocratic regime resulted in persecution of innocents.**

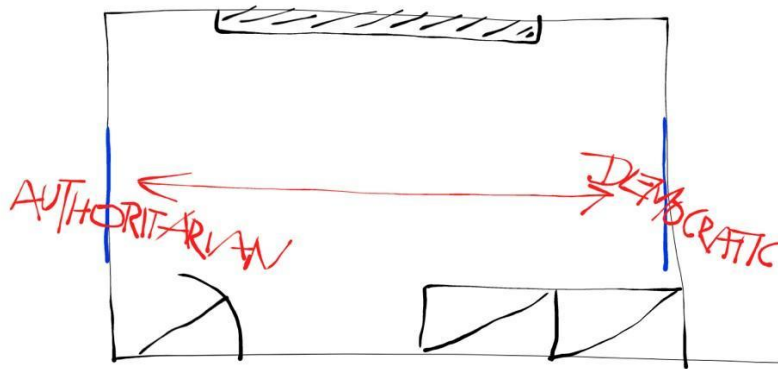
REFLECTION II. (APPLYING THE LESSON TO THE CURRENT WORLD):

As a final point of discussion, the teacher may deem it to be relevant or appropriate to engage the students in one final activity. This is aimed at tying the experience in the classroom with the reality in the outside world. For this reason, the teacher will

ask the students to stand up and once again choose to move to one side of the classroom after hearing a prompt.

This time, though, the classroom will be set up differently – again opposite walls will represent opposing viewpoints, but this time the students will be instructed to position themselves in between the walls based on their opinion. The choice will not be binary, but a line.

Classroom setup:



The discussion prompts for the two positions are the following:

»The country we live in is authoritarian«	»The country we live in is democratic«
--	---

The teacher will instruct students to position themselves in the space in between the two walls based on their opinion where on the authoritarian-democratic axis our country is.

The teacher may choose to engage in an additional discussion about this topic.

CONCLUSION AND ASSIGNMENTS:

The teacher may choose to assign reading on this topic or assign a paper about the reflection of the students following this activity.

Tips for the instructor

What are the key things to be aware of when conducting this lesson so it will be successful?

It is highly recommended for the teacher to make the classroom experiments engaging by announcing the steps in a gameshow-like manner. For best delivery, the teacher should introduce the game, then only take the students through one step at a time, not revealing what is going to happen in the next step. It is recommended to use a timer for this activity.

In situations where discussing political affairs with students is not appropriate or against the law, the last part of the lesson should be skipped.

ACCOMODATIONS FOR LANGUAGE LEARNERS, STRIVING READERS AND STUDENTS WITH SPECIAL NEEDS

The group discussion setting will take away the pressure of following a lecture and the kinetic nature of the activity will help introduce key content knowledge of the unit in a way that is not text or lecture heavy, which will help students that struggle with traditional methods of teaching.

As this is an unstructured activity, the teacher should be mindful to less outspoken students and prompt them to take part in the conversation as well.

ASSESSMENTS (FORMATIVE AND SUMMATIVE)

The teacher will circulate the classroom as he/she facilitate the activity and moderate the ensuing discussions and thus assess student progress. The teacher may use the written summary of the group consensus during debriefing discussion to assess to what level the students grasped the final concept.

INTERCULTURAL CONSIDERATIONS

This activity is an open discussion and therefore may lead to a topical discussion on various current issues. The teacher should consider in advance if he/she needs to adapt the discussion prompts to better suit the purpose of the learning goals.

It is of particular importance for the teacher to intervene if the ensuing discussion turns against particular students and/or their particular national, familial, sexual or other identities in order to have a civilized and open discussion.

Consideration should be taken before delivering this lesson in countries with recent abrupt political changes or active authoritarian regimes.



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LESSON SIX: CONCRETENESS IN PRESENTATIONS

LESSON PLAN: **The principle of concrete information**

SKILL AREA: **Effective communication**

GOALS AND OBJECTIVES

Students will be able to understand how to craft their messages so they are more memorable and more persuasive through avoiding the pitfall of generalization and abstraction. They will be provided with practical tools and thought processes to improve the level of their communication.

APPLYING THIS LESSON

This lesson can fit into several core or elective subjects, and particularly in every situation where individual work is required to present information: **Languages** (essay writing, presentations), **Social sciences** (critical discourse, argumentation, essay writing), **Natural sciences** (presenting data), **Arts** (presentations),... It is suggested this is a standard lesson delivered to every student in high school.

METHOD OF INSTRUCTION AND VOCABULARY

The teacher will primarily provide examples and case studies through verbal presentation and ex-cathedra lecturing. To reinforce the message he/she will also guide students through a number of thought experiments. The students will be given a case study to solve in order to reinforce the learning in the lesson.

RESOURCES NEEDED

- **Case study** presented on the projector or distributed among the students (provided in the appendix of this lesson plan)
- Access to a **whiteboard** (or similar) to track the discussion (see lesson plan for instructions)
- **Pens and paper for the students** in the classroom for the teacher to deliver the thought experiments (see lesson plan for instructions)
- **A timer or clock** that can measure seconds
- **IMPORTANT - PRESENTATION PROPS:** A small packet of salt (or a salt shaker), eight packets of sugar (or a small sugar bowl)

THE LESSON

What is the purpose of this lesson?

What does the teacher want to achieve in this session? What educational outcome is expected?

PRIMARY GOAL: To show how important it is to effectively communicate by making the message concrete and to provide steps for students to improve their messaging.

SECONDARY GOAL: To encourage students to avoid the use of generalizations and abstractions in their communication.

What is needed to deliver this lesson?

Instructions for teachers on things to set up before entering the classroom.

A case study with an example message the students are to work on and improve in order to make it more concrete (provided in the appendix).

Pens and papers for students and a timer that measures time to conduct practical case studies

If desired, the classroom should be rearranged prior to the lesson to allow for group work.

Outline of the lesson

Instructions on how to deliver the lesson and how to run the activities.

LESSON INTRODUCTION (ANTICIPATORY HOOK/ACCESSING PRIOR

KNOWLEDGE): The teacher will start off by sharing a short story to the students in order to introduce the topic of the lesson:

One hot summer day a Fox was strolling through an orchard. He saw a bunch of Grapes ripening high on a grape vine. »Just the thing to quench my thirst,« he said. Backing up a few paces, he took a run and jumped at the grapes, just missing. Turning around again, he ran faster and jumped again. Still a miss. Again and again he jumped, until at last he gave up out of exhaustion. Walking away with his nose in the air, he said: »I am sure they are sour.« It is easy to despise what you can't get.

The fable above, »**The Fox and the Grapes**,« was written by Aesop. Aesop authored some of the most memorable stories in world history. We've all heard his greatest hits: »The Tortoise and the Hare,« »The Boy Who Cried Wolf,« »The Goose That Laid

the Golden Eggs,« and many more. If any story told in this school will still be circulating a few millenia from now, odds are it will be »The Fox and the Grapes.«

Even people who have never heard of this story, even people in different cultures and countries will recognize the phrase »sour grapes,« which encapsulates the moral of the story. Aesop's lesson has traveled the world. In Hungary, people say *savanyu a szolo* – »sour grapes« in Hungarian. In China they say, »Grapes are sour because you cannot reach them.« In Sweden, a little local color was added; the Swedish expression *Surt sa raeven om roennbaeren* means »Sour, the fox said, about the rowanberries.«

Clearly, Aesop was illustrating a human shortcoming. The fable would not have survived for 2.500 years if it didn't reflect some profound truth about human nature. But there are many profound truths that have not seeped into teh day-to- day language and thinking of dozens of cultures. **This truth is especially memorable because of the way it was communicated.** One would imagine the life span of Aesop's fables would have been much shortened if they were communicated as »*Aesop's helpful suggestions* – don't be such a bitter jerk when you fail.«

The world needs more fables.

The teacher should now point out that many corporate communications, and a lot of scientific communication has been made painfully abstract. If he/she desires, they may be written on the whiteboard:

- Reciprocal cost-based reengineering
- Customer-oriented visionary paradigm
- Strategic local values

Even teachers have their own buzzwords: »Metacognitive skills,« »intrinsic motivation,« »portfolio assesment,« »developmentally appropriate,« »thematic learning.«

TEACHER NOTE: Self-irony is exceptionally effective when trying to introduce a new concept, particularly when it is one that is new and in opposition to an established belief.

The teacher should now give a practical example to illustrate this point further. He/she should ask the students if they have ever heard the doctor say:

»**IDIOPATHIC CARDIOMYOPATHY**«

Then he/she should jokingly proceed to explain that »Cardiomyopathy« means something is wrong with your heart and »idiopathic« means »we have no idea why yours is not working« (the term actually refers to unknown reasons for something).

The lesson the teacher should make at this point is that **language is often abstract, but life is not abstract.**

Teachers teach about battles and animals and books. Doctors repair problems with our stomachs, backs and hearts. Companies create software, build planes, distribute newspapers; they build cars that are cheaper, fancier or faster than last year. **Even the most abstract business strategy must eventually show up in the tangible actions of human beings.**

It is easier to understand those tangible actions than to understand an abstract strategy statement or theory – just as it is easier to understand a fox dissing some grapes than an abstract commentary about the human psyche.

Abstraction makes it harder to understand an idea and remember it. It also makes it harder to coordinate our activities with others, who may interpret the abstraction in very different ways. Concreteness helps us avoid these problems.

This is perhaps the most important lesson that Aesop can teach us.

The teacher may choose to lead a short discussion about this or proceed to the next phase.

A CASE STUDY (THE NATURE CONSERVANCY): The teacher will tell the students that he/she has prepared a case study for them and will read it out aloud and/or show it on the projector for them.

I will now present a case study for you and I would love to hear what you think about it. Please feel free to just listen to it, you do not have to write anything down.

For fifty years, The Nature Conservancy (TNC) has helped protect environmentally precious areas in the world using the simplest possible method: it buys them. It buys land at market prices, making it off-limits to environmentally damaging uses, such as development or logging. This strategy has come to be known within TNC as »bucks and acres.« It had appeal to donors and benefactors, because the result of their gifts was so clear. A big gift bought a big piece of land. A small gift bought a small piece of land. As one donor commented, TNC produced »results you could walk around on.«

In 2002 Mike Sweeney, the COO of TNC California, was facing a big challenge. They have taken a map of California and colored in the most environmentally

sensitive areas, those worth preserving. Astonishingly, 40 percent of the map was colored. This was a non-starter: There weren't enough bucks out there to buy that many acres.

Yet these areas were still environmentally essential; TNC couldn't simply give up on them. TNC decided to implement a new approach. »Bucks and acres« couldn't succeed with this vast quantity of land. So instead of owning the land outright, TNC would ensure that the critical areas were *protected against damage*. The organization would pay landowners not to develop their land, buying what's known as a »conservation easement.« It would work with local and state governments to change policies and encourage protection of the land.

These new strategies made sense – TNC could protect more areas than it could reach through »bucks and acres.« But they also had drawbacks. First, they were much less concrete to donors. Donors can't »walk around on« a favorable government regulation. Second, they were also potentially demoralizing for employees – they made progress less tangible. When TNC bought land, »it was easy to celebrate a deal closing, to tell everyone 'John and Mary bought this land' and to pat them on the back.« These »milestone moments,« so great for morale, were missing from the new model. How could TNC make the new strategy more concrete?

What would you do in this situation?

Is there a way to recapture the invaluable tangibility of the »bucks and acres« strategy in a context that was necessarily more ambiguous? You've got 40 percent of the state to protect, and you can't buy it. How do you explain yourself to the donors and partners?

Initially TNC tried to break up the impossibility of the scale of the challenge to smaller chunks – into more tangible »subgoals.« For example »We will protect 2% of California every year for 20 years.« This was the right idea, but in this case the numbers are just too big. And »acreage« is not necessarily the best way to think. Thinking about »acreage per year« is akin to a museum curator thinking about »canvases per year,« without regard to period, style, or painter.

Here's what TNC did in the end: Instead of talking in terms of land area, it talked about a specific »landscape.« And they gave each landscape a concrete name. Five landscapes per year in 10 years became the new goal.

To the east of San Francisco there is a set of brown hills that are the beginnings of a large wilderness. The hills are an important watershed for the San Francisco Bay, but they are quickly being chipped away by Silicon Valley sprawl. Although

the area is important ecologically, it is not exactly beautiful and therefore it is hard to engage people's imaginations. Everyone admits they are not particularly sexy.

But, says Sweeney, »We don't go after stuff because it's sexy. We go after it because it's an ecologically important part of creation.«

The TNC named the savanna the Mount Hamilton Wilderness (based on its' highest peak, the site of a local observatory).

Identifying the area as a coherent landscape and naming it put it on the map for local groups and policymakers. Before, Sweeney says, Silicon Valley groups wanted to protect areas close to their homes, but they didn't know where to start. If you say, »There's a really important area to the east of Silicon Valley,« it's just not exciting, because it's not tangible. But when you say »I want to protect The Mount Hamilton Wilderness,« their interest perks up.

In 2004 the Packard Foundation, a Silicon Valley institution created by one of the founders of the HP company, provided a large grant to protect the entire Mount Hamilton Wilderness. Sweeney says: »We're always laughing now, because we see other people's documents and they're talking about the Mount Hamilton Wilderness. We say, 'You know, we made that up.'«

The Mount Hamilton Wilderness is not a generic set of acres. It's an eco- celebrity.«

TEACHER NOTE: If time permits, it may be useful to ask the classroom to break this story into two parts and ask students to come up with their ideas before revealing the solution TNC came up with.

After this, the teacher should **start by encouraging a debate** and then conclude it by explaining that this is not a story about land; it's a story about abstraction. TNC avoided the trap of abstraction – saving 2 million acres per year – by converting abstract blobs on a map into tangible landscapes. TNC realized, wisely, that the context had grown more ambiguous, and the solutions had grown more ambiguous, but that their *messages* must not be allowed to grow more ambiguous.

Concreteness is an indispensable component of memorable, effective communication.

The teacher should then proceed with the next part of the lesson and explain the meaning of the concept 'concrete':

WHAT MAKES SOMETHING CONCRETE: If you can examine something with your senses, it's concrete. A V8 engine is concrete. »High-performance« is abstract. Most of the time, concreteness boils down to specific people doing specific things.

Concrete language helps people, especially novices, understand new concepts. Abstraction is the luxury of the expert. If you've got to teach an idea to a room full of people, and you aren't certain what they know, concreteness is the only safe language.

The teacher should now conduct a short thought experiment for the class. He/she should preface it by saying: *Concrete ideas are easier to remember. Take individual words, for example. Experiments in human memory have shown that people are better at remembering concrete, easily visualized nouns (»Bicycle« or »Avocado«) than abstract ones (»Justice« or »Personality«). Then, the teacher should ask the classroom to **close their eyes and remember some things the teacher will name.** He/she should ask the class to listen to the following sentences that will ask them to remember some ideas. The students should spend five to ten seconds thinking about them.*

TEACHER NOTE: The teacher should not rush through these but spend time to move from one to the other.

The prompts:

- *Remember the capital of Norway*
- *Remember the first line of »Hey, Jude« (or some other song that you know well)*
- *Remember the Mona Lisa*
- *Remember the house where you spent most of your childhood*
- *Remember the definition of »truth«*
- *Remember the definition of »watermelon«*

The teacher should then explain: What is it about concreteness that makes ideas stick? The answer lies with the nature of our memories. Many of us have a sense that remembering something is a bit like putting it in storage. To remember a story is to file it away in our cerebral filing cabinets. There's nothing wrong with that analogy. But the surprising thing is that there may be completely different filing cabinets for different kinds of memories.

David Rubin, a cognitive psychologist at Duke University, uses this exercise to illustrate the nature of memory. Each command to remember seems to trigger a different mental activity. Remembering the capital of Norway is an abstract

exercise, unless you happen to live in Oslo. By contrast, when you think about »Hey, Jude« you may hear Paul McCartney's voice and piano playing. No doubt the Mona Lisa memory conjured a visual image of that enigmatic smile. Remembering your childhood home might have evoked a host of memories – smells, sounds, sights.

You might even have felt yourself running through your home, or remembering where your parents usually sit. The definition of »truth« may have been a bit harder to summon – you certainly have a sense of what »truth« means, but you probably had no preformulated definition to pluck out of memory, as with the Mona Lisa.

You might have had to create a definition on the spot that seemed to fit with your sense of what »truth« means. The definition of »watermelon« might also have involved some mental gyrations. The word »Watermelon« immediately evoked sense memories – the striped green rind and red fruit, the sweet smell and taste, the heft of a whole watermelon. Then you might have felt your gears switch as you tried to encapsulate these memories into a definition.

Memory, then, is not like a single filing cabinet. **It's more like velcro.** If you look at two sides of Velcro material, you'll see that one is covered with thousands of tiny hooks and the other is covered with thousands of tiny loops. When you press the two sides together, a huge number of hooks get snagged inside the loops, and that causes Velcro to seal.

Your brain hosts a truly staggering number of loops. The more hooks an idea has, the better it will cling to memory. Your childhood home has a gazillion hooks in your brain. A new credit card number has one, if it's lucky.

Great communicators have a knack for multiplying the hooks in a particular idea, because they can create their stories so they tap into so many different aspects of emotion and memory – that those words can be remembered even decades later.

A CASE STUDY (BROWN EYES, BLUE EYES): The teacher will tell the students that he/she has prepared another case study for them and will read it out aloud and/or show it on the projector for them.

I will now present a case study for you and I would love to hear what you think about it. Please feel free to just listen to it, you do not have to write anything down.

On April 5, 1968, a day after Martin Luther King was shot and killed, an elementary-school teacher, Jane Elliot, found herself trying to explain his death to the classroom of third graders. Her nine-year-old students were familiar with King, but could not understand who would want him dead, or why. Elliot said, »I knew it was time to deal with this in a concrete way, because we'd *talked* about discrimination since the first day of school. But the assassination couldn't be explained to little third-graders in almost exclusively white Iowa.«

She came to class with a plan: she aimed to make prejudice tangible to her students. At the start of the class, she divided the students into two groups: brown-eyed kids and blue-eyed kids. She then made a shocking announcement: Brown-eyed kids were superior to blue-eyed kids – »They're the better people in this room.« The groups were separated: Blue-eyed kids were forced to sit at the back of the classroom. Brown-eyed kids were told that they were smarter. They were given extra time during breaks. The blue-eyed kids had to wear special collars, so that everyone would know their eye color from a distance. The two groups were not allowed to mix during the breaks.

Elliott was shocked at how quickly the class was transformed. »I watched those kids turn into nasty, vicious, discriminating third-graders ...it was ghastly,« she said. »Friendships seemed to dissolve instantly, as brown-eyed kids taunted their blue-eyed former friends. One brown-eyed student asked Elliott how she could be the teacher »if you've got dem blue eyes.«

At the start of the class the following day, Elliott walked in and announced that she had been wrong. It was actually the *brown-eyed* children who were inferior. This reversal of fortune was embraced instantly. A shout of glee went up from the blue-eyed kids as they ran to place their collars on their lesser, brown-eyed counterparts.

On the day when they were in the inferior group, students described themselves as sad, bad, stupid, and mean. »When we were down,« one boy said, his voice cracking, »it felt like everything bad was happening to us.« When they were on top, the students felt happy, good and smart.

Even their performance on academic tasks changed. One of the reading exercises was a pack of cards the kids were supposed to read through as fast as possible.

The first day, when the blue-eyed kids were on the bottom, it took them 5.5 minutes. On the second day, when they were on top, it took 2.5 minutes. »Why couldn't you go this fast yesterday?« Elliott asked. One blue-eyed girl said, »We had those collars on « Another student chimed in, »We couldn't stop thinking about those collars.«

Elliott's simulation made prejudice concrete – brutally concrete.

It also had an enduring impact on the students' lives. Studies conducted ten and twenty years later showed that Elliott's students were significantly less prejudiced than their peers who had not been through the exercise.

Students still remember the simulation vividly. A fifteen-year reunion of Elliott's students broadcast on the PBS series *Frontline* revealed how deeply it had moved them. Ray Hansen, remembering the way his understanding changed from one day to the next, said, »Prejudice has to be worked out young or it will be with you all your life. Sometimes I catch myself discriminating, stop myself, think back to the third grade, and remember what it was like to be put down.«

The teacher should conclude the reading of this case study by mentioning that Jane Elliott put hooks into the idea of prejudice. It would have been easy for her to treat the idea of prejudice the way other classroom ideas are treated – as an important but abstract bit of knowledge, like the capital of Norway or the definition of »truth.« She could have treated prejudice as something to be learned, like the story of a World War II battle. Instead, Elliott turned prejudice into an *experience*.

The teacher should ask the students to think of the »hooks« involved: The sight of a friend suddenly sneering at you. The feel of a collar around your neck. The despair at feeling inferior. The shock you get when you look at your own eyes in the mirror. This experience put so many hooks into the students' memories that, decades later, it could not be forgotten.

The teacher may decide to **ask the students to debate this in class**. He/she could ask them why was that communication approach so powerful and what does that teach us about concreteness in communication.

The teacher should then proceed to the next classroom experiment.

CONCRETE BRINGS KNOWLEDGE TO BEAR (WHITE THINGS): The teacher will now conduct a short experiment and invite each student to take a pen and paper. He/she will be timing them, as they **individually** complete a simple test.

INSTRUCTIONS FOR STUDENTS: *Grab a pencil and a piece of paper. You'll do two brief fifteen-second exercises. When you have your pens ready, I will give you your instructions.*

STEP ONE: Write down as many things that are white in color as you can think of.

The teacher should stop when the time is done, then ask the students to take another piece of paper, and when they are ready, they will get the second task.

STEP TWO: Write down as many white things in your refrigerator as you can think of.

The teacher should then ask the students to count the number of items on both papers.

The teacher should then observe that most people, remarkably, can list about as many white things from their refrigerators as white anythings. This result is stunning, because well, our fridges don't include a particularly large part of the universe. Even people who list more white anythings often feel that the refrigerator test is »easier.«

The teacher should then **ask the class to discuss why does this happen?** He/she should encourage a brief discussion.

In his/her own remarks, the teacher should point out that **concreteness is a way to mobilize and focus your brain**. For another example of this phenomenon, the students can consider these two statements: (1) Think of five silly things that people have done in the world in the past ten years. (2) Think about five silly things your brother/sister/mom/dad has done in the past ten years.

Sure, this is a neat brain trick. But what value does it have? Concreteness creates brain connections and makes everything much more visual, visceral and sensual. It also stimulates creativity and collaboration. Everyone feels comfortable thinking about concrete things they know, even if the ideas that come out of them are new.

TEACHER NOTE: The teacher should take full liberty to reduce the number of experiments or case studies in this lesson and give emphasis on the points he/she feels are most appropriate to the class.

To conclude this lesson, the teacher should give the students a group challenge. Students should form groups of 4-6 people, and receive a worksheet for them to work

CLASSROOM EXERCISE (ORAL REHYDRATION THERAPY SAVES CHILDREN'S LIVES):

The teacher should tell the students every group will receive a worksheet with a message written on it. The groups will have **10 minutes** to come up with a better story, based on the just-learned principles around concreteness in communication.

Set-up: The teacher will distribute the worksheets (provided in the appendix) and ask the students to read the message, then brainstorm and come up with a more memorable alternative. The teacher should mention this is only an exercise to

train their skill and they should not be afraid to come up with unusual ideas – they will not be tested on this.

The teacher should then proceed to explain the situation and the challenge.

The situation: *Each year, more than a million children in countries around the world die from dehydration caused by diarrhea. This problem can be prevented, at very low cost, by getting kids the right kind of fluids. How do you get people invested in this idea?*

STEP ONE: The teacher should invite students to begin work. During this time, the teacher should circle around the class and provide support and feedback to the groups, but **stay out of their discussions and avoid giving suggestions and ideas himself/herself** as this is a challenge for the students.

STEP TWO: After the time runs out, the teacher should first **comment on the original message and (optionally) invite a discussion about it**. This should be done before the groups share their messages.

The teacher should first ask the students after reading this to quickly think: How solvable is this problem? Suppose you were a health official in a developing nation. What would you do tomorrow to start saving kids?

The teacher should then mention this text appears on a website of an international organization working on this issue (PSI, a nonprofit group addressing health problems in the developing world). It is certainly written in a language that creates *credibility* as there is lots of scientific language and exposition. However, if the problem sounds too complex, that could deter people from trying to solve it (or even caring).

STEP THREE: The teacher should ask every group to talk about their own solutions for approximately a minute. He/she should congratulate each group for their efforts, and then emphasise there is no **correct** answer, only good tries. The students are practicing communicating in a more concrete way.

After this, the teacher should tell the students he/she will share the message of the director of one of the most respectable former UNICEF directors, James Grant, about this same topic.

STEP FOUR: The teacher should now demonstrate the way mr. Grant explains this very same message.

Grant always travelled with a packet filled with one teaspoon of salt and eight teaspoons of sugar – the ingredients for Oral Rehydration Therapy (ORT) when mixed with a liter of water. When he met with the prime ministers of developing countries, he would take out his packets of salt and sugar and say, »Do you know that this costs less than a cup of tea and it can save hundreds of thousands of children's lives in your country?«

For dramatic effect, the teacher should present the packets of salt and sugar he/she prepared before the start of the class.

After this, the teacher should again **ask the same question as before**: quickly think: how solvable is this problem? What are you going to do tomorrow to start saving these children's lives?

REFLECTION/DEBRIEF OF THE ACTIVITY:

In conclusion, the teacher should sum up the activity by outlining the important lesson of Grant's message. It brings you to the table, helps you bring your knowledge to bear. Maybe you are already brainstorming ways of getting salt/sugar packets to schools. Maybe you are thinking about publicity campaigns to teach mothers the right ratio of salt and sugar.

Grant is clearly a master of making ideas stick. He brings a *concrete* prop and starts with an attention-grabbing unusual explanation: This packet costs less than a cup of tea, but it can have a real impact. Prime ministers spend their time thinking about elaborate, complex social problems – building infrastructure, constructing hospitals, maintaining a healthy environment – and suddenly here's a bag of salt and sugar that can save hundreds of thousands of children.

TEACHER NOTE: This exercise should not be used as homework, as its learning benefits are the greatest if students receive immediate feedback. Furthermore, it should be presented to the students as a safe, fun challenge, instead of an assignment. Ignoring this lesson will change the fun punchline of this story and instead show the students the inadequacy of their proposed solution – which will have a negative effect on the learning outcome.

At this stage the teacher should give closing remarks to the lesson: Of many things that can be learned about effective communication, concreteness is perhaps the easiest to embrace. It may also be the most effective way to immediately improve your communication.

To be simple – to find our core message – is quite difficult. It's certainly worth the effort, but let's not pretend that it's easy. Crafting our ideas in an unexpected way

takes a fair amount of effort and applied creativity. But being concrete isn't hard, and it doesn't require a lot of effort. The barrier is simply forgetfulness – we forget that we're slipping into abstractspeak. We forget that other people don't know what we know. We're the teachers that are too full of ourselves and our knowledge to remember the novice student with his/her naive curiosity and taste for concrete and tangible information.

CONCLUSION AND ASSIGNMENTS:

The teacher may choose to assign reading on this or assign homework where students are instructed to create an engaging message that »sticks« from a different example. Furthermore **the teachers should consider encouraging the students to apply this lesson whenever they deliver written or oral presentations** in order to train this skill among the students.

Tips for the instructor

What are the key things to be aware of when conducting this lesson so it will be successful?

In situations where the discussion about discrimination may touch upon current political affairs, the teacher should **avoid political commentary**, but instead point out that the lesson is about communication and concreteness in messaging, not the content of the case studies.

The teacher should also honestly and readily admit teachers themselves do not always follow these instructions if called on this by the class – communication is always difficult and rarely do we see perfect storytellers and presenters (outside Hollywood and the Literary Arts).

ACCOMODATIONS FOR LANGUAGE LEARNERS, STRIVING READERS AND STUDENTS WITH SPECIAL NEEDS

The teacher should be mindful to include less verbal students in the discussions and provide attention to those students who typically do not make themselves heard. In this topic, more than others, it is very possible less outgoing students will come up with better solutions for the communication challenges outlined in the lesson.

As this is an unstructured activity, the teacher should be mindful to prompt less outspoken students to take part in the conversation as well.

ASSESSMENTS (FORMATIVE AND SUMMATIVE)

The teacher will circulate the classroom as he/she facilitate the activity and moderate the ensuing discussions and thus assess student progress. The teacher may use the contents of the group presentations on improved messages to assess to what level the students grasped the final concept.

INTERCULTURAL CONSIDERATIONS

This activity is an open discussion and therefore may lead to a topical discussion on various current issues. The teacher should particularly consider the case study about discrimination and think in advance if he/she needs to adapt the discussion prompt to better suit the purpose of the learning goals. **It is suggested political discussion of the topic of discrimination is avoided in this lesson** as the topic is communication.

It is of particular importance for the teacher to intervene if the ensuing discussion on reliable sources turns against particular students and/or their particular national, familial, sexual or other identities in order to have a civilized and open discussion. Consideration should be taken before delivering this lesson in countries with recent abrupt changes in the media landscape or active authoritarian regimes.

FINAL PROJECT REPORT ON THE ACTIVITIES

THE LESSON CREATION

The lessons presented in this document were created in the period between August 2020 and January 2021 by the mentorship team of Ustvarjalnik, headed by chief curriculum designer Matija Goljar, MA, that involved researchers Luka Podlipnik, Aljaž Osetič and Marko Vrdoljak.

The topics for the lessons were proposed by representatives of project partners and participating schools. Five lesson topics were suggested by them based on different transversal skills that are important for the success of students in the 21st century. They were IT skills, Communication, Literacy skills, Critical thinking and the topic of concrete, which was interpreted to provide an opportunity to teach the skill of data research, curation and presentation. The last lesson topic was proposed by the authors, Ustvarjalnik, on the topic of concreteness in presentations. The decision for these topics was finalized at the initial kickoff meeting of the project in Godolo in 2020.

All of the lessons were presented to the project partners requesting them in March 2021, and after their approval they were collected in a teacher resource kit that was presented to all the schools.

The lessons were created to be used broadly in various different classes and provide a framework for easy adaptation so the teachers and the wider educational community would be able to find them as a beneficial contribution to their work. Together with the teacher handbook presented here, they present a suggestion to improve the way teaching is done in the partner schools and hopefully provide a contribution to the improvement of education in Europe.

All the methods proposed to be used in the lesson plans presented here have been tested by the Ustvarjalnik mentor team prior to their inclusion in the curriculum. These tests have been done in the period of October – December 2020.

The team that created these lessons completed this project despite significant difficulties and limitations due to the Covid19 pandemic. This situation prevented the team from conducting as many practical tests of the lessons as it was desired, as well as significantly slowed the collaboration of the creation team. Due to this the creation of the lessons was much longer than initially anticipated.

TEACHER TRAINING

The training for the teachers was first planned to take place in person at the headquarters of Ustvarjalnik in Ljubljana, Slovenia. Unfortunately due to the Covid19 pandemic, it was not possible to achieve this.

The project partners first decided to postpone this activity as much as possible to be able to demonstrate all the lessons in person, however it was ultimately decided to deliver the training virtually. The training took place on April 20th and 21st of 2021 on Zoom, and teachers from all the participating schools took part.

The training lasted for a total of 6 hours split over two days and was facilitated by the chef curriculum designer of Ustvarjalnik, Matija Goljar, MA. In preparation for the training, three goals were outlined: (1) to present the lessons that were created, (2) to show how these lessons can be adapted in various settings in order for them to be widely applicable, and (3) a broad overview on innovative teaching methods so teachers might be motivated and able to create their own teaching methods.

The purpose and overview of the training, as presented to the participating teachers

The purpose of this learning activity is to (1) show the teachers how to improve the student engagement in the classroom through use of innovative content in theory and practice, (2) provide teachers with concrete examples of powerful teaching content, (3) show teachers what process to follow to improve their existing lesson plans by adding engaging content, (4) provide a framework of thought and action for crafting future lessons, and (5) giving teachers a run-through of some concrete lessons that were prepared for them through this project. By the end of the training the participants will be empowered to adapt their usual teaching styles by using storytelling and dynamic content elements that serve as hooks for students' attention – **thus improving the effectiveness of their teaching.**

The training agenda, as presented to the participating teachers

The training will take place online via a digital platform (Zoom, etc...) in April, at a date suggested by the project leader (Ilmiofuturo) and will be conducted by the facilitation team of Ustvarjalnik. The duration of the training will be **6 hours, divided into two days**, consisting of theoretical lessons and practical work of the participants, lead by the facilitator. During the training, participants will be given a theoretical overview of using innovative content for teaching, as well as **be presented with a selection of practical lessons that may be used by the teachers in class**

immediately. These lessons have been prepared within the FLICREATE project by Ustvarjalnik as one of the project activities.

DAY ONE – 20.4.2021

#	TIME	DESCRIPTION	METHOD
1	16.00 – 16.15	Opening remarks and outline of training agenda The facilitator will present the purposes of the training and provide an overview of the agenda. Opening remarks will be given by the project leader.	Remarks
2	16.15 – 17.00	A producer's view vs. a teacher's view of content The participants will be shown how a television producer picks engaging content and be given some »dirty tricks« that are used to make the content engaging. This will be concluded by a discussion how these approaches can be used in the classroom	Lecture
3	17.15 – 18.00	Overview of lessons created in the FLICREATE project The participants will be given 5 lesson plans for concrete lessons created using the approaches previously discussed, as well as concrete instructions and demonstrations on how to use them in class immediately.	Case studies
4	18.00 – 18.30	How to find engaging content online The facilitator will present a 5-step process how to find engaging and attractive content online and how to adapt it and use it within the classroom. The participants will be instructed on how to select optimal content and how to adapt that content in the classroom. Additionally, participants will be given some concrete tools and examples that can serve as a starting point for them as they prepare their content.	Instructions

DAY TWO – 21.4.2021

5 16.00 – 17.00 Individual work by participants

Practical work

The participants will be challenged to find and create a simple lesson or learning activity for their own classroom and subject using the methods and approaches discussed previously. They will have time to use the suggested tools and search content online on their own and present how their current lessons can be made more engaging.

Presentations to the group

Remarks and Q&A

6 17.00 – 18.45 Presentation of participant work

Participants will present their new lesson outlines and the facilitator will provide feedback on their work.

7 18.45 – 19.00 Closing of the seminar and final discussion

The training will conclude with time set aside for questions and answers, as well as some concluding remarks on how this content can be used to

improve the teaching process.

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pospeševalnik mladinskega podjetništva

A total of 31 teachers signed up for the training through the project partners. Out of those, 21 took part in the duration of the activity.



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