FLICREATE PROJECT

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FINAL REPORT TO THE PARTNERSHIP &

TEACHER HANDBOOK FOR PARTICIPATING TEACHERS

FLI CREATE (FLIpped CREative Awareness Teaching) Strategic Partnership Programme Erasmus+ - Field Education – KA2 Develop of innovation scheme- Project Number 2019-1- IT02-KA201-063149

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PREFACIO

La generación de jóvenes de los institutos de hoy no es feliz. Tienen miedo del futuro. Hay escasez de puestos de trabajo y existe un pesimismo generalizado en la sociedad. A pesar de ello, los individuos ambiciosos están demostrando que se puede tener éxito si se tiene un objetivo claro y se trabaja duro.

Esta generación está al borde del precipicio. El mundo que les rodea es completamente diferente al que crecieron sus padres. El éxito está determinado por cosas completamente diferentes hoy que en el pasado. Si hace treinta años bastaba con tener conocimientos sobre un área, hoy necesitas crear algo nuevo con los conocimientos que tienes para tener éxito. Si hace veinte años podías conseguir un trabajo simplemente conociendo a la persona adecuada, hoy necesitas demostrar mucho más. Si hace diez años bastaba con inventar algo, hoy hay que vender ese invento para prosperar.

Pero si damos un paso atrás, podemos ver que esta generación tiene unas oportunidades increíbles. Un mundo interconectado que es posible gracias a las nuevas tecnologías permite a casi cualquier persona encontrar su lugar y contribuir. Hoy es completamente posible convertir una afición en una empresa y ganarse la vida haciendo lo que te gusta.

Hace décadas, lo que más frenaba a las personas que querían crear una empresa era la falta de capital. Hoy, las cosas son diferentes. Se puede iniciar un negocio con un ordenador portátil y una conexión a Internet. Lo que más frena a la gente hoy en día es la falta de conocimientos sobre ventas y habilidades empresariales. Por eso la mayoría de la gente no cree que pueda crear un negocio.

Los que tuvieron la suerte de lograr su primer éxito adquirieron una experiencia que les demostró que las cosas se pueden hacer. Estarán dispuestos a volver a intentarlo y tendrán el valor de perseverar.

El papel de los profesores es ayudarles a dar este primer paso.

Matija Goljar
Founder and CEO
Ustvarjalnik

0. ÍNDICE DE CONTENIDOS

Este documento consta de lo siguiente:

1. INSTRUCCIONES PARA EL PROFESOR

PRIMERA PARTE: FACILITAR LAS LECCIONES

Dirigir una clase interactiva es muy diferente a dar una conferencia o a la enseñanza tradicional. Requiere un conjunto de habilidades específicas y un enfoque diferente

APRENDER HACIENDO ES LA FORMA MÁS EFICAZ DE IMPARTIR CONOCIMIENTOS. EL TRABAJO DE UN FACILITADOR CONSISTE EN GUIAR A LOS PARTICIPANTES A TRAVÉS DE UNA EXPERIENCIA QUE LES PERMITA ADQUIRIR NUEVOS CONOCIMIENTOS.

Hay muchas actividades de tipo taller preparadas para los mentores en el plan de clases. Todas ellas requieren que el mentor sea un facilitador y guíe a los participantes, paso a paso, a través de una experiencia que les permita conocer un aspecto concreto de la empresa.

Hay que saber que las experiencias en sí mismas no enseñan nada. Sólo cuando se ponen en contexto, cuando nos preguntamos "qué hemos aprendido", aprendemos realmente.

El trabajo del animador es llevar a los participantes a las percepciones deseadas. La actividad debe ser simplemente algo que inicie una discusión sobre el tema y los estudiantes deben llegar a nuevas realizaciones y percepciones basadas en su experiencia real.

CONSEJOS PARA UNA BUENA FACILITACIÓN:

- Dé instrucciones muy claras. Nada arruina más rápido una actividad que el hecho de que los participantes no sepan qué hacer.
- Después de dar las instrucciones, hazles a todos preguntas como "¿nos entendemos?" "¿sabéis lo que tenéis que hacer?" "¿estamos preparados?" para asegurarte de que todo el mundo está de acuerdo.
- Explica el motivo de esta actividad. A veces los participantes sentirán que se trata de un juego, por lo que debes establecer el contexto.
- Ten en cuenta el tiempo. Si te quedas sin tiempo, la actividad no tendrá sentido. Ven preparado con un cronómetro.
- Cualquier actividad carece de valor sin un debate posterior, porque el aprendizaje sólo se produce después
- Al final del debate, la tarea del animador consiste en resumir las cosas y volver a exponer los aprendizajes importantes. Esto debe hacerse utilizando las palabras "hemos llegado a una conclusión", reconociendo que se trata de una experiencia de aprendizaje compartido.

SEGUNDA PARTE: CÓMO SER UN BUEN PROFESOR

Los consejos son como la nieve: cuanto más suaves caen, más tiempo se prolongan y más profundamente se hunden en la mente.

- Samuel Taylor Coleridge

LA FILOSOFÍA DE ENSEÑANZA USTVARJALNIK: EL MEJOR MENTOR ENCIENDE UNA CHISPA EN LOS OJOS DEL ALUMNO

Primer paso: no te asustes, ya sabes lo suficiente

Si piensas quién es el mejor jugador de baloncesto, Michael Jordan o su entrenador Phil Jackson, la respuesta es muy obvia. Aun así, el entrenador puede enseñar al jugador muchas cosas. No te preocupes si no tienes todas las respuestas o no eres un maestro de la narración: ese no es tu trabajo. Tu trabajo es ser la persona que guía al futuro agente de cambio en sus próximos pasos. Así que, literalmente, lo único que debes saber es el siguiente par de pasos. De hecho, vemos que los mejores mentores no son aquellos cuyas mentes están aturdidas por todos los detalles y complicaciones que conlleva la gestión de un negocio complejo, sino alguien que todavía puede apreciar los humildes comienzos, porque es precisamente ahí donde se encuentra ahora.

Segundo paso: creer en los jóvenes

Tu única obligación es creer de verdad en el potencial y la capacidad de los jóvenes con los que tratas. Ellos no ven el potencial y las capacidades que tienen, así que tienes que demostrárselo. Fomente su confianza. Llévalos a un viaje y deja que adquieran su primera experiencia: eso es algo a lo que siempre podrán recurrir.

Tercer paso: Guiar el proceso de descubrimiento

Tu única obligación es creer de verdad en el potencial y la capacidad de los jóvenes con los que tratas. Ellos no ven el potencial y las capacidades que tienen, así que tienes que demostrárselo. Fomente su confianza. Llévalos a un viaje y deja que adquieran su primera experiencia: eso es algo a lo que siempre podrán recurrir.

Cuarto paso: Sigue un camino

El éxito profesional es difícil. Realmente difícil. Pero los alumnos no deben saberlo al principio, ya que destruiría la motivación. Empieza por guiar a los alumnos hacia su primer éxito y haz que se entusiasmen y se alegren ingenuamente. Déjeles creer que pueden hacerlo. Luego, cuando empiecen a enfrentarse a verdaderos obstáculos, tómate tu tiempo y explícales la realidad: que la persistencia supera al talento y que el trabajo duro suele ser la única respuesta correcta. Recuerda que tu objetivo es mostrarles el camino, cómo empezar en algo. A veces decidirán que esto no es para ellos, lo cual está completamente bien. Pero pase lo que pase, aprenderán el proceso y estarán preparados para el futuro.

Paso 5: Construir la confianza en uno mismo antes de empezar a hablar de ideas

Normalmente, lo que nos impide seguir nuestros sueños es nuestra propia cabeza. No nos creemos capaces, así que ni siquiera lo intentamos. Tu primera tarea como mentor es fomentar la confianza de los alumnos en sí mismos. Sólo entonces podrás empezar a hablar de ideas, proyectos y otras cosas. Así no habrá ningún filtro interno.

Sexto paso: Crear un espacio abierto

Debes esforzarte por crear un entorno abierto y de aceptación. El aula es un lugar en el que se pueden compartir las ideas libremente y los alumnos no se juzgan entre sí. Los alumnos deben saber que pueden confiar en el mentor y que el equipo se ayudará mutuamente a alcanzar el éxito. Es importante difundir este ideal a todos los asistentes al club.

Séptimo paso: ser estricto

No es tu trabajo decir siempre que los estudiantes son geniales y que sus ideas son maravillosas. Por el contrario, debes ser muy estricto a la hora de juzgar el esfuerzo de los alumnos: el mercado no será más amable con ellos. La clave es ser exigente pero también decirles que sabes que son capaces de muchas cosas. Lo mismo ocurre con las ideas y decisiones de los proyectos. No dejes que sigan una idea condenada al fracaso, sino que guíales hacia el éxito.

Paso 8: Un buen mentor hace las preguntas adecuadas

La mejor manera de equilibrar el apoyo y el rigor es adoptar el método socrático de hacer

preguntas. De este modo, guiarás su pensamiento para que encuentren sus propias respuestas y aprendizajes. Deben pensar por sí mismos en lugar de esperar a que tú pienses en su lugar.

Paso 9: Mantener la motivación fuerte

Un año es mucho tiempo en la vida de un estudiante de secundaria. Además, crear una empresa es un proceso largo y difícil. Muy probablemente, para la mayoría de tus alumnos será la primera vez que dediquen tanto tiempo a un solo proyecto. Tu trabajo consiste en proporcionarles la motivación y el entusiasmo necesarios. La mejor manera de hacerlo es demostrar que estás realmente interesado en los proyectos de los estudiantes y en sus logros, así como mantenerlos responsables del calendario que han establecido. Debes celebrar con ellos sus éxitos y reconfortarlos cuando fracasen en algo.

Paso 10: No estás solo, conecta con otros mentores

Es normal que te enfrentes a muchas dificultades mientras enseñas. A veces tus alumnos te harán preguntas que no puedes responder. A veces sabrán más que tú sobre un campo técnico. Recuerda que hay muchos otros mentores en la misma situación, así que debes conectar con ellos y ayudaros mutuamente. También debes saber que toda la enseñanza está aquí para ayudar. Aquellos estudiantes que se muestren más prometedores deberían ser presentados a profesores más especializados o expertos en sus campos, para que puedan recibir un apoyo extra.

Bonificación: Recuerda que eres un modelo a seguir

Los estudiantes tendrán su primera visión del mundo empresarial a través de ti. Todo lo que hagas lo considerarán la norma, porque eres su mentor. Esto es a la vez una bendición y una maldición, así que sé responsable.

TERCERA PARTE: ESTABLECER OBJETIVOS MUY AMBICIOSOS

""Apunta a la luna. Si fallas, aterrizarás entre estrellas".

- W. Clement Stone

LOS ESTUDIANTES SON CAPACES DE COSAS MUCHO MÁS GRANDES DE LO QUE IMAGINAN. EL OBJETIVO DEL MENTOR ES PROPORCIONARLES INSPIRACIÓN Y APOYO A LO LARGO DEL CAMINO.

En el pasado hemos visto que los estudiantes han completado proyectos extremadamente ambiciosos. La enseñanza basada en proyectos no tiene límites de edad y debemos atrevernos a emprender proyectos ambiciosos y ser poco razonables con nuestros objetivos.

Los alumnos no son conscientes de cuáles son sus capacidades. Normalmente son mucho, mucho más altas de lo que creen. Una gran parte de este enfoque de aprendizaje es ayudarles a ver que son capaces y darles la confianza necesaria para empezar.

Cuando se decide una idea y se fijan los objetivos desde el principio, hay que mostrar ambición y darle bombo. El club de emprendedores es un entorno perfecto para que los estudiantes den un gran salto adelante.

PART FOUR: PERSONAL MENTORSHIP IN THE CONTEXT OF THE CLASSROOM

"¿Qué es un profesor? Te lo diré: no es alguien que enseña algo, sino alguien que inspira al alumno a dar lo mejor de sí mismo para descubrir lo que ya sabe."

- Paolo Coelho

QUIZÁS EL MAYOR IMPACTO SE PRODUCE CUANDO EL PROFESOR INVIERTE TIEMPO EN CONOCER A LOS ALUMNOS A NIVEL PERSONAL Y LOS ENTRENA PARA QUE TENGAN ÉXITO COMO MENTOR

Para apoyar a los alumnos debemos ser mentores, debemos ser hermanos mayores, debemos ser amigos, y a veces incluso podemos actuar como padres. Para todo ello, el ámbito del coaching puede ofrecer algunas ideas muy útiles.

Este será un breve resumen de algunas técnicas de coaching de probada eficacia, extraídas de los archivos de conocimientos de Coach.me y adaptadas al contexto de la escuela secundaria.

EL MARCO DEL IMPULSO

Por lo general, los principales problemas con los que los estudiantes necesitan apoyo son los siguientes:

- Establecer un objetivo o encontrar un propósito
- Disciplina personal para ejecutarlo

El principio básico del coaching es entrenar primero el hábito, y luego entrenar para el crecimiento. Este modelo de coaching de hábitos primero es el que mejor se adapta a todas sus interacciones generales con los estudiantes, en los clubes o fuera de ellos.

Esto se llama el marco de impulso. Utilícelo como base que puede modificar cuando los alumnos le pidan consejo o cuando sienta que necesita darles apoyo.

Una vez a la semana, en clase, no puedes hacer la misma discusión profunda que harías en persona. En su lugar, céntrate en la acción inmediata. Esto genera confianza y abre la puerta a la evaluación continua y a la reevaluación permanente.

Utilizando el marco de trabajo, el estudiante pasa por cuatro fases. Los mentores más ambiciosos pueden agilizar esta práctica para que los estudiantes pasen el mayor tiempo posible haciendo progresos. A menudo esto significa pasar de la Fase 1 (Evaluación) a la Fase 2 (Habituación) en sólo 2 o 3 mensajes. Pero nos estamos adelantando...

Fase 1: Evaluación. ¿Cuál es su objetivo?

Comience con la evaluación. ¿Cuál es el objetivo principal de la persona y por qué? ¿Qué espera de su mentor? Necesita esta evaluación para identificar una práctica inicial y poder personalizar su coaching.

Fase 2: Habituación. Construir el hábito.

Utilice la evaluación para pasar a la habituación. Encuentre una práctica regular que apoye el objetivo más amplio de su estudiante. Concéntrese en crear consistencia.

NOTA DEL MENTOR: Un ejercicio muy bueno es invitar a los estudiantes a que le envíen correos electrónicos de actualización diarios con el asunto: "Lo que he conseguido hoy". Esta es una invitación cortés que usted vende a los estudiantes diciendo "esto es algo para construir consistencia".

Lo importante es que todos los días hagáis algo para vuestro proyecto. Por lo tanto, este correo electrónico es principalmente para que te sientas un poco mal antes de irte a dormir, así que en el peor de los casos, piensa en algo realmente pequeño para hacer y hazlo durante 10 minutos antes de irte a dormir. No es mucho, pero al menos es un pequeño progreso".

También puedes decir que es una forma perfecta de mantenerte informado para poder ayudar mejor al alumno y animarle a que escriba también cualquier pregunta en ese correo electrónico. Varios de nuestros estudiantes han estado haciendo esto durante más de un año y hemos visto grandes resultados.

Fase 3: Crecimiento. Construir habilidades y aumentar la dificultad.

Una vez que haya consistencia, puede trabajar en el crecimiento. Usted puede ampliar la dificultad de la práctica, construir habilidades, identificar y resolver los desafíos, y / o introducir optimizaciones.

Fase 4: Graduación. Celebrar y revisar el objetivo en función de los hitos.

Usted y su alumno deben buscar hitos de graduación en los que puedan reevaluar y reiniciar el ciclo de impulso basándose en lo que han aprendido juntos. ¡No te olvides de celebrar el éxito también!

Esto es algo que construye la motivación y da claridad de visión a nuestros estudiantes. El concurso de final de curso está diseñado para proporcionar un hito a mayor escala y un momento de graduación de este tipo.

Veamos algunos guiones de ejemplo para cada fase.

FASE UNO: EVALUACIÓN

Al principio de su relación, querrá conocer a sus alumnos haciéndoles preguntas para realizar una sencilla evaluación.

Comience con la evaluación. ¿Cuál es el objetivo más amplio de la persona y por qué? ¿Qué esperan de su mentor? Necesita esta evaluación para identificar una práctica inicial y poder personalizar su coaching.

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incluso sugerir un primer paso, pero esté atento a una práctica demasiado grande. Cuando esto ocurra, puedes replantear el hábito como algo mucho más pequeño.

A continuación se muestra un ejemplo de la respuesta de un coach a un cliente que tenía como objetivo terminar su tesis. Pensaban que estaban luchando contra la procrastinación y afirmaban que "simplemente no pueden concentrarse en escribir durante 8 horas seguidas".

Esto es lo que escucho. Quieres escribir todos los días para avanzar más rápido en tu tesis. Cuando intentas pasar 8 horas escribiendo, sientes que casi siempre acabas procrastinando. ¿Es eso cierto?

Así que mi forma de trabajar es utilizar una metodología basada en el impulso. La idea es centrarse primero en la consistencia para poder crear un impulso. Y luego, una vez que haya consistencia, podemos trabajar en la calidad y la cantidad. En tu caso, esa segunda fase incluiría la evaluación del tiempo que dedicas a escribir, cómo te sientes con respecto a la calidad de la escritura y (tal vez) cuántas palabras has escrito. Pero por ahora, vamos a trabajar en la consistencia.

Para mañana, ¿qué te parece concentrarte en sentarte y ponerte a trabajar? ¿Puedes cronometrarte y decirme cuánto tiempo pasa entre el momento en que te sientas en tu escritorio y el momento en que terminas de escribir tu primera frase?

Fíjate en que esta respuesta también hace un gran uso de las técnicas de escucha activa (el primer párrafo), utilizando palabras y frases exactas del último mensaje del cliente.

Una vez que hayas identificado un mínimo de práctica diaria, tienes que asegurarte de que esa práctica sea realmente constante.

La mayoría de las veces tendrás ideas más que suficientes para ayudar a los alumnos a alcanzar sus objetivos. Aparte de esto, hay varias estrategias y guiones disponibles en Internet para crear hábitos. No es necesario memorizarlos, sólo hay que saber que existen.

Definición de objetivos: prueba los ejercicios de anclaje y declaración de objetivos para aclarar el cómo y el cuándo del hábito.

Fundamentos de la creación de hábitos: los hábitos funcionan mejor cuando se reducen a una práctica diaria mínima, se anclan a los hábitos existentes y se tratan los distintos contextos (trabajo, casa, viajes) como hábitos independientes.

Diseño del entorno: decisiones puntuales que facilitan la consecución del hábito.

Diseño ambiental: decisiones puntuales que facilitan la consecución del hábito.

Responsabilidad y refuerzo positivo: estas estrategias ayudan a reforzar y motivar a su cliente hasta que su hábito sea consistente.

Si el alumno ya tiene el hábito, entonces tardará de 1 a 2 días en comprobarlo.

Si el alumno está empezando desde cero, el hábito tardará de 1 a 2 semanas en afianzarse. A las dos semanas no tienen un hábito permanente formado, pero tendrán suficiente consistencia para pasar a la siguiente fase.

TERCERA FASE: CRECIMIENTO

Una vez que tenga consistencia, puede trabajar para ayudar al estudiante a aumentar sus habilidades para manejar una mayor dificultad. Si sólo están trabajando en un hábito, entonces trabajarás en hacer el hábito permanente. Pero normalmente, el objetivo también tiene un componente de habilidad o volumen.

Hay una variedad de cosas que los entrenadores hacen aquí y muchas de ellas son específicas para el objetivo que están tratando de lograr. Un entrenador de atletismo puede hacer que el cliente trabaje con una carga de entrenamiento progresivamente más dura. Un entrenador de productividad puede ayudar a su cliente a identificar patrones y diseñar procesos para manejarlos, por ejemplo, cómo procesar rápidamente los informes de gastos.

Estas son las principales tácticas:

Preguntas de enfoque: puede ayudar a los alumnos a planificar, examinar y optimizar su propio objetivo. En este modo, usted utiliza preguntas para destacar áreas de mejora y el estudiante proporciona las respuestas.

Progresión de las habilidades: aquí puede utilizar su experiencia para mejorar el rendimiento del alumno, un elemento cada vez.

Esta fase puede prolongarse indefinidamente, sobre todo si el alumno se apoya en usted para rendir cuentas. Sin embargo, siempre es mejor estar atento a un hito en el que pueda reclamar el éxito y entonces iniciar un nuevo viaje a través del ciclo de impulso.

CUARTA FASE: GRADUACIÓN

Cuando su alumno haya completado un objetivo o una tarea o hito importante, debería trabajar con él a través de un paso de graduación con el objetivo de revisar, reevaluar o graduarse de verdad.

Estos son los principales resultados potenciales:

Volver a pasar por el ciclo de impulso, empezando por una reevaluación para ver cómo ser aún mejor. Por ejemplo, podría entrenar para una reunión con un cliente, considerarlo un momento de graduación y volver a evaluar para hacerlo aún mejor la próxima vez.

Pase a un objetivo adyacente y comience el ciclo de impulso para ese objetivo. Por ejemplo, un entrenador de productividad que trabaje en la priorización podría seguir con "Bandeja de entrada cero".

Pase al modo de mantenimiento. En este período, el 90% de su valor consistirá en responsabilizar al alumno. Ocasionalmente, podrá detectar posibilidades de mejora, pero en la mayoría de los casos sólo será una fuente externa de motivación.

ESCUCHA ACTIVA

Esta es quizás la habilidad fundamental más importante para el coaching y se aplica a la tutoría de muchas maneras.

Los nuevos mentores son los más propensos a pasar por alto esta habilidad. No piense que su trabajo consiste simplemente en decirle a alguien lo que tiene que hacer. No es así. No podemos insistir lo suficiente en ello.

La tutoría es una colaboración. Su capacidad para escuchar es un requisito previo para involucrar a su estudiante.

La escucha activa permite que el alumno sepa que se le escucha y que no se limita a copiar y pegar.

Es especialmente importante conectar los puntos entre lo que el alumno te dice y lo que tú le aconsejas que haga.

Escuchar activamente puede ser tan sencillo como repetir lo que has oído. Esto es muy importante, aunque parezca repetitivo, ya que su respuesta se ha producido hace unos momentos.

Al repetir lo que has dicho al alumno, éste se siente escuchado.

Si no utilizas estrategias de escucha activa, creas tres problemas en tu relación con el alumno.

Darás consejos incorrectos sin darte cuenta. Esto se debe a que, literalmente, no has escuchado los problemas de tu alumno (porque no haces de la escucha una prioridad) o a que tu alumno no cree que le estés escuchando (por lo que no siente que merezca la pena corregirte).

Tu alumno se esforzará menos en sus respuestas a tus preguntas porque no siente que ese esfuerzo será reconocido.

Tu alumno perderá la confianza en tus consejos porque no se siente escuchado.

Probablemente usted ya piense que sabe escuchar, pero ¿lo hacen sus alumnos?

Repetir a alguien es el nivel mínimo de escucha activa. Si quieres mejorar rápidamente esta habilidad, busca las palabras clave que utilizan y reutilízalas en tu respuesta.

¿Cuál sería la respuesta más adecuada a la siguiente afirmación?

Hola mentor, quiero encontrar una forma de controlar mis miedos a hablar en público. Por ejemplo, a veces, cuando estoy hablando, empiezo a pensar en que el público me está mirando, en lugar de centrarme en mi charla. Esto también ocurre en la escuela, especialmente cuando me llaman.

Una respuesta podría ser así:

He oído que quieres ser capaz de concentrarte y tener control sobre tu mente en situaciones en las que la gente te observa, como cuando tienes que hablar en público. Si podemos reducir el miedo y la ansiedad en esas situaciones, podrás mejorar tu rendimiento.

Este método es una variación de una técnica de PNL (Programación Neurolingüística) llamada "retroceso de palabras clave".

Es una forma elegante de decir que la escucha activa consiste en anotar las palabras clave importantes que utiliza el alumno y repetirlas. Es muy eficaz para crear una relación de confianza.

2. LAS LECCIONES DISEÑADAS, SU PROPÓSITO Y SU JUSTIFICACIÓN

LECCIÓN UNO COMUNICACIÓN

PLAN DE LECCIÓN: La maldición del conocimiento y la comunicación eficaz

ÁREA DE COMPETENCIA: Comunicación

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Los alumnos serán capaces de comprender los escollos y dificultades más comunes para una comunicación eficaz. Se les recordará la necesidad de la empatía y el esfuerzo en la comunicación diaria efectiva, así como se les dará algunas sugerencias muy útiles para hablar en público y hacer presentaciones.

Esta lección puede encajar en varias asignaturas básicas u optativas: Idiomas (redacción de ensayos, presentaciones orales), Sociología (dinámicas de grupo, comunicación intercultural), Psicología (empatía), Cívica (hablar en público),... Con ligeras adaptaciones del contenido, puede aplicarse a cualquier curso en el que se requieran presentaciones y debería entregarse a cada clase antes de su primera tarea de hablar en público.

El profesor guiará a la clase para que participe en una actividad y será un facilitador, más que un conferenciante. Intentará diferir siempre el juicio y, en cambio, dará espacio a los alumnos para que expresen su opinión y lleguen a conclusiones a través del debate. Después, el profesor tendrá un papel de demostrador y deberá mostrar en la práctica todos los contenidos sugeridos en esta guía.

RECURSOS NECESARIOS

- Un gran número de fotos sacadas de revistas o periódicos (ver el plan de la lección para más sugerencias)
- Papeles y bolígrafos para los participantes (normales, los alumnos pueden utilizar los suyos propios)

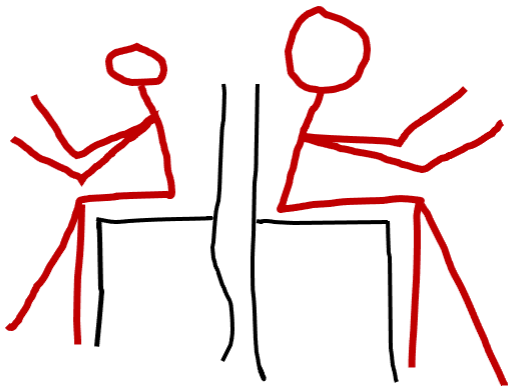
- Acceso a una pizarra blanca (o similar) para seguir el debate (véase el plan de la lección para las instrucciones)
- Un aula que permita mover las sillas y eventualmente retirar las mesas para los estudiantes (ver el plan de la lección para las instrucciones de preparación)

LA LECCIÓN

¿Cuál es el objetivo de esta lección? *¿Qué quiere conseguir el profesor con esta lección? ¿Qué resultado educativo se espera?*
OBJETIVO PRINCIPAL: Demostrar cómo hay que prestar siempre atención y esfuerzo para lograr una comunicación eficaz. Mostrar la rapidez con la que uno puede desviarse cuando no se centra en el proceso de comunicación e introducir el concepto de la maldición del conocimiento a los alumnos. OBJETIVO SECUNDARIO: Proporcionar algunos consejos prácticos y aplicables sobre el uso de la comunicación no verbal y los trucos de oratoria para mejorar la eficacia de las habilidades comunicativas de los alumnos.
¿Qué se necesita para poder dar esta lección? *Instrucciones para el profesorado antes de entrar a clase.*
Al menos una imagen por alumno de la clase. Las imágenes servirán de estímulo para el ejercicio de comunicación. Las mejores imágenes son las que son genéricas y no tienen un tema concreto, y no incluyen lugares de interés conocidos, personas u otros elementos que puedan nombrarse fácilmente (y explicarse). Pero, en última instancia, cualquier foto sirve. Pueden ser arrancadas de un periódico o revista actual, no importa ni el tamaño ni su calidad. Para la primera actividad hay que reorganizar las sillas en las que se sientan los alumnos de manera que queden emparejados colocando las sillas enfrentadas, con las espaldas de los alumnos de cara a los demás (como se indica) para que no se vean entre sí ni lo que están escribiendo.
Resumen de la lección *Instrucciones sobre cómo impartir la lección y cómo realizar las actividades.*
INTRODUCCIÓN DE LA LECCIÓN (GANCHO ANTICIPATORIO/ACCESO AL CONOCIMIENTO PREVIO CONOCIMIENTO PREVIO): Hay que indicar a los alumnos que esta lección tratará sobre las habilidades de comunicación que siempre es útil tener. Inicialmente, el profesor debe hacer sólo una breve introducción al tema y mencionar que "la mejor idea es

No sirve de nada si no eres capaz de comunicarlo eficazmente" - después de esto, se debe invitar a los alumnos a participar en una actividad interactiva.

EL JUEGO DE LA DISCUSIÓN: Antes de comenzar la actividad, se invita a los alumnos a repartirse por el aula. También deben formar parejas. Lo ideal es que cojan sus sillas (móviles) y se sienten uno frente al otro con las espaldas juntas. Si las sillas no son móviles, deben sentarse en el suelo o en las mesas y formarse de manera que queden frente a frente y no puedan ver lo que la otra persona de la pareja está anotando o mirando.



El profesor debe decir a los alumnos que esta actividad se desarrollará en dos pasos y que la pareja se alternará en diferentes papeles. Uno de los dos será el comunicador y el otro será el oyente, y luego se invertirán los papeles. En ambos casos, los pasos de esta actividad serán los mismos.

Primer paso: El profesor debe indicar primero a los alumnos que decidan quién asumirá cada papel. Uno debe ser el comunicador y el otro el oyente. La pareja debe sentarse mirando hacia lados opuestos y no mirar hacia el otro durante toda la actividad.

Los oyentes deben tomarse unos minutos para preparar un bolígrafo y un papel para esta actividad y colocar ambos en su regazo.

Segundo paso: El profesor explica que el objetivo de esta actividad es poner a prueba la capacidad de comunicación de la pareja y exponer las dificultades inherentes a toda comunicación. No se trata de una competición, pero todos los alumnos deben hacer un intento honesto en la actividad que sigue.

Paso 3: El profesor dice a los alumnos que los comunicadores recibirán una imagen del profesor. No deben mostrar esta imagen a su compañero. Su trabajo consistirá en describir esta imagen verbalmente para que sus compañeros sean capaces de reproducirla mediante un dibujo. Podrán hablar entre ellos de la forma que quieran, todo lo que quieran, y ambos podrán hablar y hacer preguntas (incluido el oyente). Lo único que no está permitido es mostrar el dibujo a la otra persona. Dispondrán de 10 minutos para esta tarea.

Cuarto paso: El profesor debe indicar a los alumnos que, una vez terminada la actividad, las parejas de estudiantes mostrarán a la clase la imagen original y el dibujo que pretenden reproducir. Los resultados se discutirán más tarde.

Paso 5: En este momento, el profesor debe entregar los dibujos a todos los comunicantes de forma que sus compañeros no los vean. A continuación, debe indicar a los alumnos que empiecen a dibujar.

Durante este tiempo, el profesor debe dar vueltas por el aula haciendo observaciones pero sin comentar el progreso de los alumnos.

Paso 6: Una vez transcurrido el tiempo, los profesores deben pedir a los alumnos que muestren los resultados finales entre ellos. Deberán reírse. El profesor debe felicitarlos y luego pedir a las parejas que levanten sus imágenes y las muestren a los demás alumnos.

Paso 7: El profesor debe preguntar si esto es lo que los alumnos esperaban. Debe felicitarles por su esfuerzo y decirles que es un resultado muy normal: es bastante difícil reproducir una imagen de esta manera. El profesor debe preguntar a la clase si esperaban que fuera tan difícil. Se puede mantener un breve debate.

Paso 8: El profesor sugiere entonces que la pareja discuta la técnica y el enfoque que han utilizado para comunicarse antes de cambiar. Se da unos minutos a la clase para que lo haga.

Paso 9: Se invierten los papeles y el profesor distribuye un nuevo conjunto de imágenes a las parejas, asegurándose esta vez de que el otro alumno adopte el papel de comunicador. Una vez más, los alumnos deben disponer de 10 minutos para esta tarea.

Durante este tiempo, el profesor debe dar vueltas por el aula haciendo observaciones, pero sin comentar el progreso de los alumnos.

Paso 10: Una vez transcurrido el tiempo, los profesores deben pedir a los alumnos que muestren los resultados finales entre ellos. El profesor debe felicitarles y volver a pedir a las parejas que levanten sus imágenes y las muestren a los demás alumnos.

Paso 11: El profesor debe comentar brevemente los resultados y volver a iniciar un

discusión sobre esta actividad.

PISTAS DE DEBATE:

(El profesor puede elegir tantas o tan pocas como necesite para la sesión)

- ¿Por qué fue tan difícil?
- ¿Qué enfoques y métodos utilizaste para llevar a cabo esta tarea?
- ¿Qué cambiaron la segunda vez?
- ¿Qué parejas creen que hicieron un trabajo especialmente bueno? ¿Qué hicieron que les dio ventaja?

¿Qué parejas consideraron que esto era especialmente difícil? ¿Por qué?

- ¿Hay diferencias entre los enfoques de los dos extremos?
- ¿Hay algunas reglas generales de comunicación que puedan extraerse de este ejercicio?
- ¿Qué sugerencias serían las más adecuadas para una futura comunicación?

El papel principal del profesor es fomentar el debate y dar voz a las diferentes opiniones. El profesor se abstendrá de aportar sus propias opiniones personales durante el debate de los alumnos (habrá tiempo para ello en la conclusión de la lección, si el profesor lo considera necesario).

En este punto, el profesor llamará la atención sobre la complejidad de las situaciones particulares y reconocerá que tal vez nunca sea posible crear un conjunto de reglas de oro para todas las situaciones de comunicación; sin embargo, hay que mencionar un punto importante: una razón clave por la que esta es una tarea difícil es porque a menudo las personas que se comunican tienen dificultades para ponerse en el lugar de aquellos para los que una determinada información es nueva

y, por ello, no explican las cosas con suficiente profundidad. Esto es lo que los expertos denominan la maldición del conocimiento.

En esta fase, el profesor escribirá en la pizarra las ideas clave del debate y guiará a los alumnos en la elaboración de conclusiones. Sólo en esta fase el profesor puede ofrecer sus opiniones y resumir el debate señalando los argumentos que considere más significativos.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En sus propias observaciones, el profesor puede optar por dar su propia opinión y consejos para mejorar la comunicación, pero esto sólo debe complementar las sugerencias que los propios alumnos han hecho.

NOTA PARA EL PROFESOR: Un excelente recurso para obtener más información sobre la maldición del conocimiento es el trabajo realizado por Chip y Dan Heath de la Universidad de Stanford, que se resume en un artículo de la Harvard Business Review disponible aquí: https://hbr.org/2006/12/the-curse-of-knowledge.

El profesor puede mencionar que, independientemente de lo que sugieran los alumnos, todos están de acuerdo en una cosa clave: la comunicación eficaz es siempre responsabilidad principal del comunicador, no del oyente. Por lo tanto, debe hacer todo lo posible para comunicarse de la forma más clara posible.

CÓMO MEJORAR LA COMUNICACIÓN AL HABLAR (DEMOSTRACIÓN)

Para la última parte de esta lección, el profesor debe dar a los alumnos algunos consejos prácticos sobre cómo mejorar su comunicación oral utilizando trucos empleados por actores y presentadores. Son extremadamente sencillos, pero normalmente nadie los menciona explícitamente a los alumnos y por eso poca gente los utiliza realmente. Abarcan dos áreas: la pronunciación del discurso y la comunicación no verbal.

NOTA PARA EL PROFESOR : El profesor debería hacer una demostración él mismo. Los siguientes ejercicios son tan sencillos que todo el mundo debería ser capaz de hacerlos, aunque se considere un mal orador. No será eficaz realizarlos sólo en teoría y sin demostración.

El profesor debe explicar que hay cinco sencillos "trucos" que va a demostrar a continuación y que ayudarán a todo el mundo, incluso al orador más incómodo, a mejorar significativamente sus presentaciones orales. Todos ellos proceden directamente de la escuela de interpretación, pero pueden y deben ser empleados por cualquiera. Como casi nadie presta atención a estos puntos, es seguro asumir que los estudiantes que adopten estas sugerencias se convertirán inmediatamente en mucho mejores comunicadores.

Sugerencia nº 1: Tonalidad dinámica

El profesor debe empezar recitando un poema de forma monótona y satírica, sin ningún cambio de tono o cadencia. A continuación, el profesor debe preguntar a los alumnos si les ha resultado agradable. A continuación, el profesor debe preguntar a los alumnos si recuerdan algún dibujo animado o película en la que aparezca un sargento militar diciendo

"¡Atención!". Esta palabra se grita siempre en tres tonos diferentes: AAAA-

TEEEEEEEN-TIOOOON, donde la primera parte es de tonalidad bastante neutra (aaaaaaaa), la parte central es extremadamente baja (teeeeeeen), y el final de la palabra es muy alto (tiooon). El profesor debe demostrar y utilizar la palabra inglesa aunque imparta esta lección en otro idioma. Esto debe servir de ejemplo para explicar que es preferible utilizar una tonalidad dinámica a una monótona. Si el profesor es un gran orador (la mayoría lo son), debería terminar esta parte recitando el mismo poema de forma mucho más atractiva.

Hay que indicar a los alumnos que no tengan miedo de mostrar energía y hablar de forma atractiva.

Sugerencia nº 2: Énfasis y pausas retóricas

El profesor debe señalar que la oratoria adquiere su color y su estilo mediante el uso de dos componentes básicos de la interpretación dramática. El primero es el énfasis. El profesor debe elegir una sola frase, como: Hoy es un hermoso día soleado en <nombre de la ciudad>. A continuación, el profesor debe hacer una demostración repitiendo esta frase y cambiando el énfasis verbal de cada una de las palabras:

Hoy hace un bonito día en <nombre de la ciudad>. - enfatizando que hoy es un buen día Hoy es un bonito día en <nombre de la ciudad>. - enfatizando la afirmación

Hoy es un bonito día en <nombre de la ciudad>. - enfatizar la belleza del día Hoy es un hermoso día en <nombre de la ciudad>. - enfatizar el día en sí mismo

Hoy es un hermoso día en <nombre de la ciudad>. - Destacar la ciudad

Los alumnos deben pensar activamente qué es lo más importante en cada mensaje, o incluso en cada frase. Cuando preparen sus textos, deberán subrayar el énfasis y pronunciarlo en consecuencia.

El segundo elemento es la pausa dramática. El profesor debe decir simplemente: "Y ahora voy a demostrar la segunda .... <pausa>.... truco muy importante,...

<pausa> que es quizás el más fácil de usar, pero que tiene el mayor significado. Esto es....

<pausa larga> la pausa dramática.

Después de esta demostración, el profesor debe señalar que a las personas les cuesta interiorizar la información nueva si se les entrega demasiado rápido y que les resulta mucho más fácil prestar atención a algo que el orador dice si se detiene en el lugar apropiado para crear tensión o dramatismo. Por eso, la pausa es muy eficaz si se utiliza adecuadamente.

Hay que orientar a los alumnos para que piensen activamente en qué lugares deben utilizarse las pausas. Cuando preparen sus textos, deberán marcar los lugares en los que deben hacer una pausa y realizarla en consecuencia.

Sugerencia #3: Entusiasmo

Quizá el truco más fácil para fingir el carisma sea mostrar entusiasmo o mucha energía. Quizá lo primero que se le dice a todo presentador de televisión es que muestre un entusiasmo extra y que se pase de la raya, que se emocione mucho más delante de la cámara que en la vida real.

El profesor debería simplemente empezar a hablar sobre este punto y ser deliberadamente MUCHO MÁS EXCITOSO Y FINGIR ENTUSIASMO CON GESTOS Y TONALIDAD EXCESIVOS.

NOTA PARA EL PROFESOR: Esta no es una lección fácil de demostrar para los profesores, ya que tendrán mucho miedo de parecer tontos, pero la lección es sencilla: Cuando crees que muestras un 50% más de entusiasmo delante de la clase, en realidad estás mostrando un 5% más. Hay que insistir en ello.

El profesor debería atreverse a demostrarlo también, pero si no (no es recomendable) debería señalar a la persona más extrovertida de la clase y preguntar a los alumnos por qué se considera carismática a esa persona. La mayoría de las veces será porque esa persona no tiene miedo de ser más expresiva y más ruidosa que la media.

Hay que informar a los alumnos de que en una situación de presentación es preferible ser un 30% más ruidoso, hablar un 20% más despacio y mostrar un 50% más de entusiasmo que en la vida real. Y que "fingir hasta conseguirlo" es una buena lección para este tipo de situaciones, por lo que los alumnos no deben tener miedo de hacerlo.

Sugerencia nº 4: Gestos

El profesor debería empezar diciendo que los gestos son algo con lo que mucha gente tiene problemas, ya que no saben qué hacer con las manos, o simplemente se sienten muy nerviosos o cohibidos al hacer cualquier cosa. Mientras se explica esto, el profesor debe empezar a agitar sus manos en pequeños círculos a la altura de sus caderas. El movimiento debe ser totalmente descoordinado con las palabras que se dicen.

La explicación del profesor continúa: "pero el truco de los gestos es realmente sencillo. En primer lugar, deben darse cuenta de que ahora mismo simplemente estoy agitando las manos de una manera extraña y posiblemente estúpida y a la mayoría de ustedes les cuesta mucho, mucho, prestarme atención porque se distraen con el gesto tonto".

El profesor deja de hacer movimientos raros.

El profesor explica que el sencillo truco de los gestos es que más o menos todo vale, siempre que sea congruente y esté en sintonía con lo que se habla. En general, la gente tiene su propio estilo de gestos y cualquier cosa que hagan está bien. De nuevo, mientras se explica esto, el profesor empieza a hacer gestos exagerados pero esta vez sincronizados con lo que se está diciendo.

La explicación del profesor continúa: "como ves, ahora puedo hacer muchas cosas realmente estúpidas (extiende las manos como un jugador de fútbol celebrando un gol), pero parecen bastante normales aunque sean extremas (señala directamente al cielo), porque enfatizan mi punto de vista (hace un gran gesto llevando el puño a la otra mano)".

El profesor explica que los alumnos deben sentirse tranquilos con lo que hacen normalmente, sólo hay que prestar atención a que sea congruente con su mensaje, no se vuelva repetitivo y no sea ofensivo (cualquier blasfemia o cubrir partes del cuerpo con las manos que normalmente no cubrimos es raro). Como antes, normalmente la gente comete el error de no ser lo suficientemente expresiva en lugar de ser demasiado expresiva.

Sugerencia nº 5: Expresiones faciales

Como última sugerencia, el profesor debe señalar que el rostro humano es una herramienta de comunicación. La razón de que haya tantos músculos y microexpresiones es que es una forma de que las personas proporcionen un contexto emocional en su interacción y comunicación diarias. No es especialmente necesario que el profesor haga una gran demostración, pero debe señalar que los presentadores carismáticos prestan atención a sonreír cuando están exponiendo un punto, mostrar una cara decidida o triste cuando es apropiado en su historia y que, una vez más, el simple truco es ser más expresivo de lo que se cree que es apropiado.

La nota general que hay que hacer a los alumnos es que, en su mayoría, creemos que somos lo suficientemente expresivos, cuando en realidad no lo somos. Así que para el 95% de las personas el consejo aquí es que se atrevan a ser más expresivos, y se convertirán instantáneamente en mejores comunicadores, en público o en privado.

Sugerencia adicional nº 6: sonreír

El profesor debería señalar que un truco clave en todo es no prometer y cumplir, por lo que tiene una sexta sugerencia extra que es un poco más "blanda" pero que sigue siendo muy efectiva. Sonríe. A pesar de que nadie los ve, a los locutores de radio siempre se les enseña a sonreír mientras hablan al

micrófono. Esto se debe a que la voz humana tiene un tono diferente cuando una persona está

hablar. Además, al hablar con el público, un comportamiento positivo y alegre siempre producirá un mejor efecto que un ceño fruncido.

NOTA DEL PROFESOR: Siempre que demuestre una habilidad es útil exagerarla para que lo que está haciendo sea fácilmente discernible y visible. Por lo tanto, debes exagerar cada lección en tu demostración casi hasta el punto de lo absurdo.

REFLEXIÓN/RESUMEN DE LA LECCIÓN:

El profesor debe mencionar que la comunicación es una habilidad que puede aprender todo el mundo. Si los alumnos tienen miedo a hablar en público o creen que se les da mal, el profesor debe mencionar con delicadeza que nadie nació sabiendo hablar, por lo que se trata sin duda de una cuestión de práctica y esfuerzo. La mayoría de las personas que creen que no son buenos oradores han tenido poca experiencia en este campo (o una mala experiencia previa) y, desde luego, ninguna formación. Por lo tanto, esta lección debe ser un recordatorio y un simple tutorial sobre algunas cosas que todo el mundo puede hacer para ser un poco mejor orador.

CONCLUSIÓN Y TAREAS:

El profesor puede optar por asignar una lectura sobre este tema o asignar un trabajo sobre la reflexión de los alumnos tras esta actividad.

Consejos para el instructor

¿Cuáles son los aspectos clave que hay que tener en cuenta a la hora de impartir esta lección para que tenga éxito?

Es muy recomendable que el profesor haga que los experimentos en el aula sean atractivos anunciando los pasos en forma de espectáculo. Para una mejor ejecución, el profesor debe presentar el juego y, a continuación, llevar a los alumnos a través de un paso a la vez, sin revelar lo que va a suceder en el siguiente paso. Se recomienda utilizar un temporizador para esta actividad.

ADAPTACIONES PARA ESTUDIANTES DE IDIOMAS, LECTORES ESFORZADOS Y ESTUDIANTES CON NECESIDADES ESPECIALES

El entorno de la actividad de grupo eliminará la presión de seguir una conferencia y la posibilidad de que los estudiantes trabajen con un compañero ayudará a introducir las lecciones clave de la unidad de una manera práctica que no depende de la capacidad de aprendizaje. Dado que muchas personas tienen mucho miedo a hablar en público, esta lección será especialmente útil, ya que los alumnos recibirán indicaciones concretas sobre cómo hacer una presentación en público, lo que debería darles más confianza.

Durante la parte del debate no estructurado de la actividad, el profesor debe estar atento a los alumnos menos habladores y animarles a participar también en la conversación.

EVALUACIONES (FORMATIVAS Y SUMATIVAS)

El profesor circulará por el aula mientras facilita la actividad y moderará los debates que se produzcan, para así evaluar el progreso de los alumnos. El profesor puede considerar la posibilidad de tomar notas escritas que resuman el consenso del grupo durante el debate en la pizarra y utilizarlas para evaluar el nivel de comprensión del concepto final por parte de los alumnos.

CONSIDERACIONES INTERCULTURALES

Esta actividad es una discusión abierta y, por lo tanto, puede dar lugar a un debate de actualidad sobre las habilidades particulares de los distintos alumnos de la clase. El profesor debe considerar de antemano si se hacen comentarios sobre alumnos concretos y cómo reaccionar.

Es especialmente importante que el profesor intervenga si la discusión resultante se vuelve en contra de determinados alumnos y/o de sus habilidades comunicativas concretas, con el fin de mantener un debate civilizado y abierto.

Antes de impartir esta lección hay que tener en cuenta a los alumnos para los que la lengua de enseñanza no es su lengua materna.

SEGUNDA LECCIÓN: ALFABETIZACIÓN

PLAN DE LECCIÓN: Análisis y pensamiento lateral

ÁREA DE COMPETENCIA: Alfabetización

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METAS Y OBJETIVOS

Aunque esta lección trata de la alfabetización y la comprensión de la información escrita, también sirve para introducir el pensamiento creativo, también llamado "pensamiento lateral". Su objetivo es animar a los alumnos a profundizar en la lectura y a considerar cómo podrían sacar siempre más provecho de una información concreta si aplicaran un mayor análisis a la misma.

APLICACIÓN DE ESTA LECCIÓN

Esta lección puede encajar en varias asignaturas básicas u optativas como Ciencias (método científico, razonamiento deductivo), Idiomas (comprensión lectora, análisis literario) o Historia (comprensión de las fuentes históricas). También puede utilizarse en cualquier asignatura en la que los alumnos deban pensar de forma independiente.

MÉTODO DE ENSEÑANZA Y VOCABULARIO

El profesor dirigirá la clase en una actividad similar a un juego y esperará que los alumnos participen en una sencilla competición. El profesor actuará como moderador y facilitador y se espera que se abstenga de todo comentario hasta la sesión informativa final.

RECURSOS NECESARIOS

Preguntas para los rompecabezas de pensamiento lateral en sobres para cada grupo (la forma real de presentación puede adaptarse a las necesidades del profesor según lo considere oportuno)

Hojas de papel preparadas con pistas para cada grupo (ya que los alumnos de otros grupos no deben ver las pistas que recibe un grupo - véase el plan de la lección para las instrucciones)

Hojas de papel para que los grupos escriban las respuestas (cada grupo debe tener al menos 5-10 hojas de papel por pregunta, ya que presentarán múltiples respuestas posibles)

Acceso a una pizarra blanca (o similar) para hacer un seguimiento de los resultados (véase el plan de la lección para las instrucciones)

Un aula preparada para el trabajo en grupo (para que los grupos puedan conversar sin que otros grupos los escuchen)

LA SESIÓN

What is the purpose of this lesson? *What does the teacher want to achieve in this session? What educational outcome is expected?*
OBJETIVO PRINCIPAL: Animar a los alumnos a que presten atención a lo que se escribe y a que traten de "profundizar" en todo lo que leen. OBJETIVO SECUNDARIO: Animar a los estudiantes a pensar de forma creativa, fuera de la caja y "lateralmente" mientras completan esta lección y en el futuro.
What is needed to deliver this lesson? *Instructions for teachers on things to set up before entering the classroom.*
Para esta lección, el profesor debe preparar con antelación las preguntas y las pistas para el juego que se realizará en clase. Para cada grupo de alumnos, tiene que preparar Cinco sobres con una pregunta en cada uno por grupo Montones de pistas escritas en papelitos (las tres pistas para las cinco preguntas de todos los grupos: 15 pistas por grupo), apiladas para poder dar las pistas correctas en las preguntas correctas y en el orden correcto La tabla de puntuación en la pizarra (como se indica en el apéndice) Todas las preguntas, pistas y respuestas están disponibles en el apéndice. Una forma de controlar el tiempo, ya que los grupos de estudiantes serán cronometrados mientras responden a las preguntas. La mejor manera de hacerlo es utilizar un temporizador de cuenta atrás, pero también se puede utilizar una simple aplicación de cronómetro en el teléfono.
Outline of the lesson *Instructions on how to deliver the lesson and how to run the activities.*
INTRODUCCIÓN DE LA LECCIÓN (GANCHO ANTICIPATORIO/ACCESO AL CONOCIMIENTO PREVIO **CONOCIMIENTO PREVIO):** Hay que explicar a los alumnos que esta lección se desarrollará en forma de juego divertido, y que se les invitará a formar grupos y a competir entre ellos. No será necesario que tomen notas, sino que deberán disfrutar de la actividad.

Al principio, el profesor debería empezar contándoles una famosa historia de la antigüedad:

Dos mujeres se presentaron ante un poderoso rey. Le contaron que ambas vivían en la misma casa, solas. Ambas dieron a luz a un niño más o menos al mismo tiempo, pero lamentablemente, unos días después, uno de los bebés murió por la noche. Supuestamente, una de las mujeres sacó al bebé muerto de su cuna y lo llevó a la otra cuna, llevándose al vivo, cambiándolos en secreto. La otra madre vio al niño muerto en la cuna por la mañana, pero se dio cuenta de que el niño no era suyo.

Y una mujer dijo: "No, pero el niño vivo es mi hijo, y el muerto es de ella". Y la otra mujer dijo. "¡El niño vivo es *mi* hijo, y el muerto es de ella!"

Entonces el Rey dijo: "Esta dice: 'es mi hijo el que vive, y tu hijo está muerto', y aquella dice: 'es mi hijo el que vive, y tu hijo está muerto'". Y el Rey dijo:

"¡Traedme mi espada!" Y trajeron la espada ante el Rey.

Y el Rey dijo: "¡Divide al niño vivo en dos, y dale una mitad a uno, y la otra mitad al otro!"

Entonces la mujer de quien era el niño, habló al Rey, porque temía por su hijo: "¡Oh, mi Señor, dale el niño vivo, y no lo mates!" Pero la otra dijo: "No será ni mío ni de ella, divídelo".

Y entonces el Rey respondió, y dijo: "¡dale el niño vivo y no lo mates, porque ella es su madre!" Así se escuchó en todo Israel el sabio juicio del rey Salomón, pues todo el pueblo vio que la sabiduría para hacer justicia estaba en él.

El profesor debe señalar que esta historia muestra un ejemplo de pensamiento creativo en la resolución de problemas, en el que el rey fue capaz de encontrar una solución inesperada a un problema difícil al enfocarlo desde una perspectiva novedosa. Esta habilidad es especialmente útil en la vida real y debe ser entrenada.

Por ello, el profesor debe invitar a la clase a explorar esta habilidad con más detalle a través de un juego que ha preparado para esta lección.

PRESENTACIÓN DEL JUEGO: Este juego pretende ser divertido y relajante para los alumnos, para proporcionarles algunos retos mentales con la esperanza de que se den cuenta de situaciones en la vida real en las que se podrían utilizar enfoques similares.

El profesor debe dividir la clase en pequeños grupos. El número de grupos depende de los deseos del profesor y del tamaño de la clase; lo ideal es que los grupos

debe ser lo suficientemente pequeño como para que todos puedan entablar una conversación, entre 2 y 5 alumnos.

Los alumnos deben sentarse juntos en sus grupos antes de revelar el juego.

EL JUEGO DEL PENSAMIENTO LATERAL: El profesor debe introducir primero este juego hablando a los alumnos sobre el pensamiento lateral. No es un término exactamente científico, pero ha sido muy popularizado por Edward DeBono en sus libros sobre creatividad, y significa un razonamiento creativo que no es inmediatamente obvio. El profesor puede empezar diciendo algo como

En este juego, os desafiaré con extraños acertijos, similares a los que tuvo que afrontar el rey Salomón, y se os invitará a que, en vuestros grupos, tratéis de encontrar una solución creativa a los enigmas. Todos los rompecabezas requerirán algo que podríamos llamar "Pensamiento Lateral", un proceso de búsqueda fuera de lo obvio, que es bastante distinto del pensamiento tradicional, lógico y horizontal que conoces (como la deducción y el análisis). Aunque es muy difícil definir esta habilidad, no es tan difícil darse cuenta de ella cuando te enfrentas a una pregunta interesante, como haremos más adelante.

Por ahora, lo que debes saber es que no debes precipitarte a la primera conclusión y tratar de deducir una respuesta sólo a través de la información visible en el nivel de la superficie, como el rey Salomón, que basó su reacción no en los hechos del caso, que no podía saber si eran verdaderos, sino, de forma creativa, en la reacción de las madres, que no puede ser fingida.

NOTA DEL PROFESOR: Si es necesario, se puede obtener más información sobre este tema en el libro de Edward DeBono "The Use of Lateral Thinking", que también incluye una serie de ejercicios prácticos.

Más adelante hablaremos de esto en términos más formales, pero por ahora, me gustaría explicar cómo funcionará este juego.

EL JUEGO DE PENSAMIENTO: El profesor debe presentar el juego y sus reglas. Debe decir a los alumnos que el juego se desarrollará en cinco rondas, cada una de las cuales consistirá en un

acertijo lógico en forma de pregunta. El profesor distribuirá las preguntas en sobres y todos los grupos los abrirán al mismo tiempo. A continuación, dispondrán de 5 minutos para dar una respuesta a la pregunta. Se les permitirá discutir la respuesta entre el grupo.

Cuando el grupo llegue a una respuesta que considere correcta, la escribirá en un papelito y se la entregará al profesor en cualquier momento del juego, no sólo después de la hora.

del juego, no sólo después de que se acabe el tiempo. El profesor responderá entonces "sí" o

"no" solamente - sin más explicaciones. Los grupos pueden intentar responder tantas veces como quieran, no hay límite.

NOTA DEL PROFESOR: El profesor y los grupos deben tener en cuenta que las hojas de respuesta permanecen ocultas para los demás grupos.

Los grupos también podrán pedir pistas tres veces por pregunta. El profesor tendrá esas pistas preparadas por escrito y los grupos podrán tomarlas del profesor en cualquier momento del juego. Todos los grupos tendrán acceso a las mismas pistas y a las mismas preguntas.

PUNTUACIÓN DEL JUEGO:

Una respuesta correcta a la pregunta (confirmada por el profesor) vale 10 puntos. Si el grupo pide una pista, la respuesta correcta a esa pregunta sólo valdrá 5 puntos. Si piden dos pistas pero responden correctamente, obtendrán 3 puntos. Si responden correctamente después de las tres pistas, recibirán 1 punto. No se otorgarán puntos si el grupo no da una respuesta correcta antes de que se agote el tiempo.

NOTA DEL PROFESOR: Es muy posible que los alumnos den una respuesta diferente a la indicada en el apéndice de este plan de clase. Se trata de un ejercicio de creatividad, por lo que no se debe penalizar a los alumnos por una solución novedosa; es decisión del profesor conceder o no puntos por este tipo de respuestas.

El profesor debe tomar nota de cuántas pistas ha recibido cada grupo para puntuarlas posteriormente. Una vez terminada cada ronda, se anotarán las puntuaciones en la pizarra.

PREPARACIÓN DEL AULA: El profesor debe situarse frente a la clase cuando se anuncie cada ronda. A continuación, debe sentarse detrás de su mesa y hacer que los representantes de los grupos se acerquen a él durante el juego con sus hojas de respuestas o solicitando pistas. Los alumnos de los distintos grupos deben ponerse en fila y acercarse de uno en uno con sus respuestas. Cuando se acabe el tiempo, todos los grupos con alumnos que estén en la fila en ese momento tendrán sus respuestas contadas aunque se las entreguen al profesor después.

DESARROLLO DEL JUEGO: El profesor debe preguntar primero si todos los grupos han entendido las reglas y están listos para empezar la primera ronda del juego. El profesor también debe asegurarse de que todo el material (preguntas y pistas) está a su disposición para repartirlo.

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 debreafing 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.

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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?

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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 dissappear 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.

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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.

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ANSWER TO THE QUESTION

There was a snowman on the lawn. It melted.

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QUESTION FIVE

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

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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?

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ANSWER TO THE QUESTION

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

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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**

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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 fundamentaly 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: Number of trials favourable to E P(E) = _____ Total number of trials in the experiment
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 in- fection 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 some- one who hasn't had the flu or visiting an im- mune 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 simu- lation 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?"

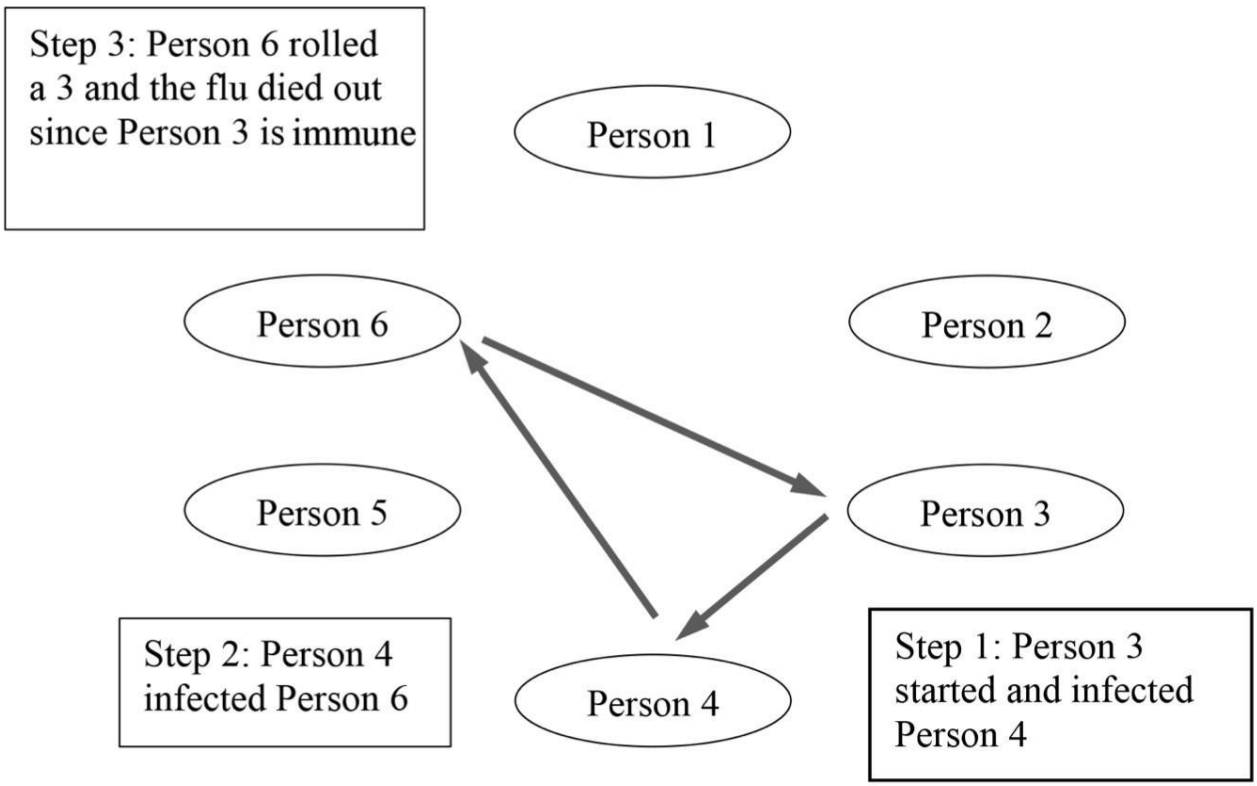
COLLECT APPROPRIATE DATA: To help your students understand the scenario, conduct a simulation involving them.

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 1to 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.



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 ques- tion) 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 prob- ability 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*

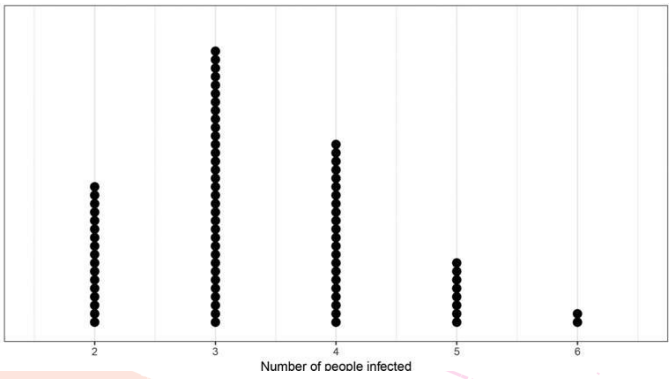
   Explain that Table below gives estimates for the relative frequency of various successes (the number of persons who become infected). The relative frequencies for the different number of successes can be thought of as the probability of the number of successes. This table describes a *probability distribution*.
   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 se- lecting numbers from 1 to 8 from a hat or bag, ran- dom 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 proba- bility 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
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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.

Co-funded by the Erasmus+ Programme of the European Union

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 dissapeared. 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, hundrets 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 controling 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#Sour ces

REFLECTION II. (APPLLYING 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.

Co-funded by the Erasmus+ Programme of the European Union

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 introductionary 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.

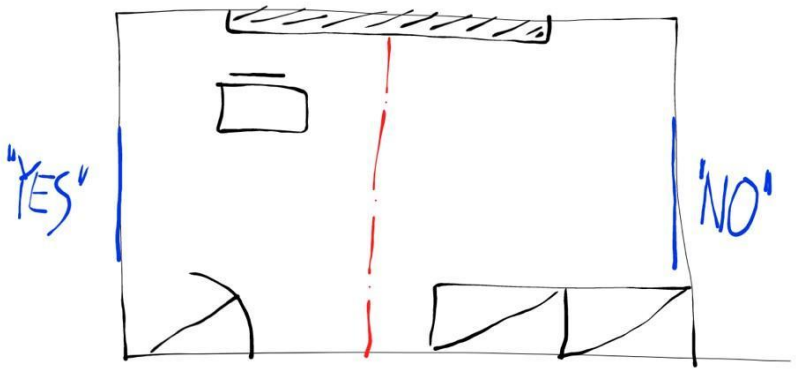
So, what gives? How can you be both good and bad at the same time?

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

THE DISCUSSION GAME: The teacher wil 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, 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 (2/3 or 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, 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 incurrs 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**.

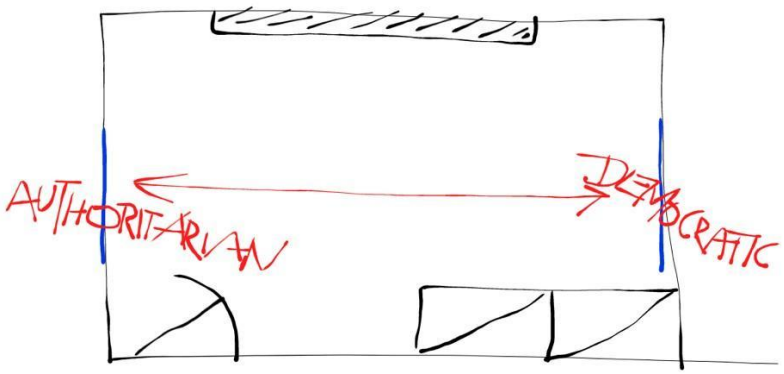
REFLECTION II. (APPLLYING THE LESSON TO THE CURRENT WORLD):

As a final point of discussion, the teacher may deem it to be relevant or appropriate to engate 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 oposing 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.

Co-funded by the Erasmus+ Programme of the European Union

LESSON SIX: CONCRETENESS IN PRESENTATIONS

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

SKILL AREA: **Effective communication**

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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 hareder 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 enfironmentally 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, Sweeny 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 realy 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 indispensible 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 wrng 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 assasination 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.

O 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 trys. 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.

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APPENDIX: SAMPLE MESSAGE (PRINCIPLES OF CONCRETENESS IN COMMUNICATION)

Please read the following message and try to improve it using the suggestions from today's lesson.

Diarrhea is one of the leading killers of young children in developing countries, causing over 1.5 million child deaths annually. Diarrhea itself is not the cause of death, but rather dehydration, the loss of body fluid. Approximately three quarters of the body is composed of water, and if fluid loss exceeds ten percent of total body fluid, vital organs collapse, followed by death. If an episode is severe, as with cholera, death can occur within just eight hours.

To prevent life-threatening dehydration it is necessary to increase liquid intake in quantities sufficient to replenish the fluids and electrolytes, sugar, and water, known as oral rehydration salts. ORS restores body fluid and does so even wnen the intestinal wall is compromised by the disease.

Source: PSI, international nonprofit that addresses health problems in developing countries

Your improved message:

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 benefitial 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 hopefuly 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** 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.	Practical work 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.	

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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