

El trabajo del futuro y el futuro del trabajo



¿Qué **NO** es Transformación Digital?

No es sólo digitalización

No es sólo informatizar los procesos

No es sólo E-commerce

No es sólo Marketing Digital

No son robots y drones en la empresa

No es sólo estar en las redes sociales

Es transformación **CULTURAL**.

TRANSFORMACIÓN DIGITAL es transformación de
MENTALIDAD.





LÍDERES

ORGANIZACIÓN

PERSONAS

STEPAD

SOCIALES

LOS CAMBIOS QUE DEFINEN EL PARTIDO

CAMBIO DE ESTILO DE VIDA (FAMILIA, URBANIZACIÓN, RELIGIÓN, BIENESTAR)

TECNOLÓGICOS

AUMENTO DE LA DIGITALIZACIÓN
USO DE LA TECNOLOGÍA PARA EFICIENCIA, INNOVACIÓN, INFORMACIÓN, CONEXIÓN

ECONÓMICOS

COMPETIR EN MERCADOS GLOBALES CON NUEVOS COMPETIDORES

POLÍTICOS

AGITACIÓN POLÍTICA Y CAMBIOS REGULATORIOS

AMBIENTALES

CRECIENTE SENTIDO DE RESPONSABILIDAD SOCIAL

DEMOGRÁFICOS

ADAPTARSE A LA FUERZA DE TRABAJO CAMBIANTE (EDAD, EDUCACIÓN, GLOBAL, EXPECTATIVAS)

4.0

NUBE - IMPRESORAS 3D - IA - ROBÓTICA - IoT
BIG DATA - NEUROCIENCIAS - BLOCKCHAIN
BIOTECNOLOGÍA - MACHINE/DEEP LEARNING
REALIDAD VIRTUAL / AUMENTADA

Ahora: Informatización - Transformación digital - Sensores inteligentes

3.0 AUTOMATIZACIÓN - COMPUTACIÓN

1969: Electrónica - Sistemas

2.0 AUTOMÓVIL - ELECTRIFICACIÓN

1870: Producción en serie - Líneas de montaje - Energía electromecánica

1.0 REVOLUCIÓN INDUSTRIAL - MECANIZACIÓN

1784: Sistemas mecánicos - Energía hidráulica - Máquina vapor

Incierto

Ambiguo

VICA

Volátil

Complejo

Una alternativa

U-predecible

enTrelazado

R U P T

Rápido

Paradójico

Los robots generan angustia

**Pero también
se generan oportunidades**

TRABAJO

*Del lat. vulg. *tripaliāre 'torturar', der. del lat. tardío tripalium 'instrumento de tortura compuesto de tres maderos'*

BUSCANDO UN PROPÓSITO

“De manos, a cabeza... a corazón”

Dov Seidman



150 AÑOS

Era Industrial

Era de la Información

Era Conceptual

Los robots son buenos

Evaluando bases de datos
Levantando objetos pesados
Haciendo tareas poco higiénicas
Moviendo con precisión
Realizando tareas repetitivas

...y más

Los humanos somos buenos

Haciendo abstracciones
Generalizando
Pensando creativamente
Utilizando sentido común
Empatizando

...y más



Sembrando el futuro

No se trata de estar empleados,
sino de **hacernos empleables!**

STEM

STEM Patía

The importance of cultivating empathy in STEM education

BY KATHY LOJ SUN

Empathy in science, technology, engineering, and mathematics (STEM) isn't just about developing technical skills. Recent research in science education highlights the importance of also understanding the impact of STEM on societal outcomes. The Next Generation Science Standards (NGSS) highlight the importance of understanding natural and environmental causes that scientists guide the work of scientists and engineers (NGSS Lead States 2013, Appendix 1, p. 5). Seeking to understand another's perspective, or what many call "empathy," can help middle school students better understand how STEM-related issues can affect people and society.

What is empathy and why is it important for STEM education?

Empathy is often defined as "understanding and sharing the feelings of another" (Free Oxford

American Dictionary Online 2011). In STEM fields, the importance of empathy has primarily been highlighted in medical education and related to training doctors to interact with patients (Bellet and Maloney 1991). Yet, developing empathy is also relevant to many other STEM fields that at first glance may not seem connected to people, such as environmental engineering, and data science. For example, environmental engineers can affect certain populations, particularly those reliant on specific resources. Computers often design products that are used by consumers and data scientists often analyze and present data in ways that can influence and affect particular populations. The intersection of these and other STEM fields highlights the need to emphasize empathy in the broader STEM education community.

Empathy work can also support student engagement, in various NGSS practices and can further students' understanding of core ideas. A central practice of NGSS for middle school engineering design is creating solutions around particular criteria

and constraints. Humans and communities have various design needs and must adapt particular solutions to particular situations. By making STEM content relevant, students will be able to see themselves as contributing members of the STEM community. Such work aligns with research that emphasizes the need for teachers to make instruction culturally relevant and accessible to all students (Ladson-Billings 1995).

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Three ways to support empathy in STEM education

As part of a research study I sought to understand how middle school science teachers

and questions. Humans and communities have various design needs and must adapt particular solutions to particular situations. By making STEM content relevant, students will be able to see themselves as contributing members of the STEM community. Such work aligns with research that emphasizes the need for teachers to make instruction culturally relevant and accessible to all students (Ladson-Billings 1995).

FIGURE 1. Empathy prompts for STEM

Overarching Question	Connect STEM content and real people	Bring in a guest	Add a human-user component
Possible discussion and/or activity prompts	How does this content relate to people? What are some real-life issues that this STEM content relates to? Who are the different people affected by this issue? What needs and constraints might people have related to this issue?	Whose perspective do we want to hear? Who (in our local and global community) might we want to bring in to share their experiences? What questions do we want to ask this person who is affected by this issue?	How are we going to design for a specific user? Who am I designing for? How does my solution address the person's need? How does the user react and respond to my solution? How do I modify my solution based on the user's responses?

1. Connect STEM content to real people

Helping students see the connection between science content and real people can be a great way to engage them in learning. For example, a science teacher might have students research a real-world problem and then design a solution to it.

2. Bring in a guest

Another way to support student engagement is to bring in a guest who can share their expertise. For example, a science teacher might have a guest speaker who can share their expertise on a particular topic.

3. Add a human-user component

Helping students see the connection between science content and real people can be a great way to engage them in learning. For example, a science teacher might have students research a real-world problem and then design a solution to it.

A close-up photograph of two hands, palms facing each other, with various colors of paint (blue, green, red, black) smeared on the skin. The word "STEAM" is overlaid in white, bold, sans-serif capital letters in the center.

STEAM

Basado en The STEM to STEAM initiative, championed by the Rhode Island School of Design

Las nuevas alfabetizaciones

Datos
Tecnología
Humana



Seamos
protagonistas
del futuro



¡MUCHAS GRACIAS!