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## THE "NUDGING-GENTLE PUSH" PSYCHO-BEHAVIORAL MODEL APPLIED TO EDUCATIONAL RESEARCH PROJECTS



**KA201: Exchange of good practices**  
***"Teaching basic sciences to young people  
with fewer opportunities: towards inclusive education"***

*Staff training Novembre 2019, Palermo*

Department of technological innovations and safety of plants, products and anthropic settlements

# INAIL MISSION

- ✓ Reducing injuries, protecting workers performing hazardous jobs, informing them about the risks at workplace, training the health personnel, and spreading the culture of health and safety at workplace.
- ✓ Research in the field of work accident prevention, safety at workplace, health in the living and working environment.
- ✓ Rehabilitation and reintegration of victims of workplace accidents or professional diseases to social and working life.

## Transversal research

- scientific research
- social inclusion projects
- high school training projects

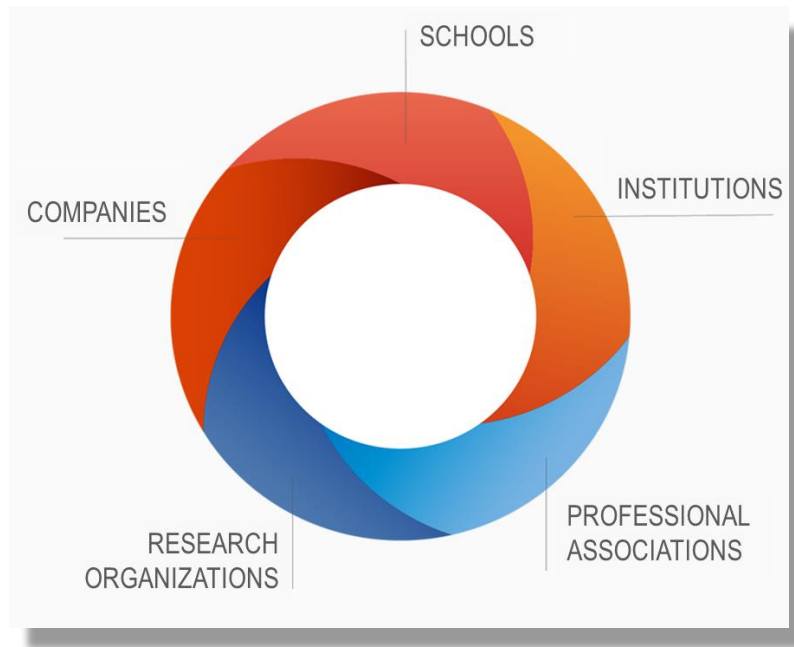


INAIL PROJECT

“Scientific and Technological Desk in the field of Agri-Food Safety”

# The Innovative Desk

It promote the transfer and dissemination of technical scientific innovation in the field of *agri-food safety* and provides a new strategy to encourage a dialogue among students in the process of innovation and research: Universities, Research Centers, Trade Associations, Schools.



Information activities, training to schools and small and medium enterprises in the agri-food field aim to contribute to the **increase of skills and technologies** about:

- ★ protection of the environment
- ★ safety and health of workers
- ★ food quality and consumer health

# The project methodology

- ★ Participatory/interactive training methodology modified through the study and application of the "Nudging-gentle push" psycho-behavioral model, making this training approach more interesting and innovative.
- ★ Aimed to guide the target population (students, workers, etc.) to adopt certain behaviors not through imposition or coercion, but through the participation and empowerment of the subjects in the decision-making process.
- ★ The "gentle push" can therefore be considered a useful model to be applied to the conscious choices of students or workers, whose path may be oriented on an educational model, stimulate the adoption of good practices and virtuous behavior even in everyday life.

# The “Nudging-gentle push”

Elaborated by Sustein and Thaler (2008) this theory has received the Nobel Prize for Economy in 2017 and got great resonance from Government of different Nations.

Nudging involves the use of small and simple adjustments, which however can produce enormous impacts and influence people's choices. It are intended to help people make the best choice in their own declared self interest (individual or community).

It is therefore based on **techniques of persuasion for behavioral changes**.

EVEN SMALL CHANGES AND LIGHT STIMULI (GENTLE PUSHES) CAN PRODUCE GREAT EFFECTS

Nudge theory is linked to a bottom-up logic, in which it is fundamental:

- ★ that the recipients feel involved
- ★ to achieve genuine participation
- ★ that the gentle push is targeted and not imposed

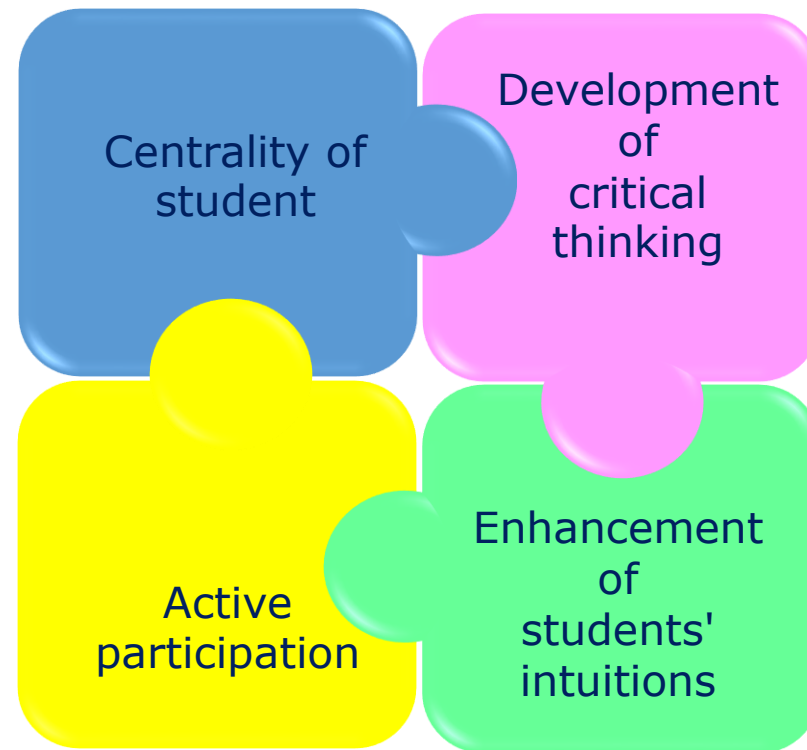
## ACTIVITIES WITH SCHOOLS

The Project as laboratory to develop a new educative methodology

# The Methodology

Students are fundamental actors in the innovation and research process.

Students are future workers.



# The importance of "motivation"

- ★ different **difficulties** (social, economic, cognitive, disabilities, ecc),
- ★ **feeling of mistrust** in their own potential to become an active part of a positive change
- ★ **NEET** generation "**n**ot (engaged) in **e**ducation, **e**mployment or **t**raining"

The human mind and the decision making process do not work following simple mechanisms of rational assessment but are widely influenced from the results of the functioning of the complex network of **cognitive** and **emotional** neural mechanism.

It is important to create an environment that stimulated the students' personal involvement and the sense of self-efficacy and confidence in their own resources and capabilities.

**CREATIVE STRATEGIES** to set up a context that:

- ✓ favor the psychological involvement of students and conveyed "gentle suggestions" for the implementation of certain behaviors/attitudes (active involvement)
- ✓ without coercions
- ✓ leaving the freedom of choice

# The Lifelong learning methodology

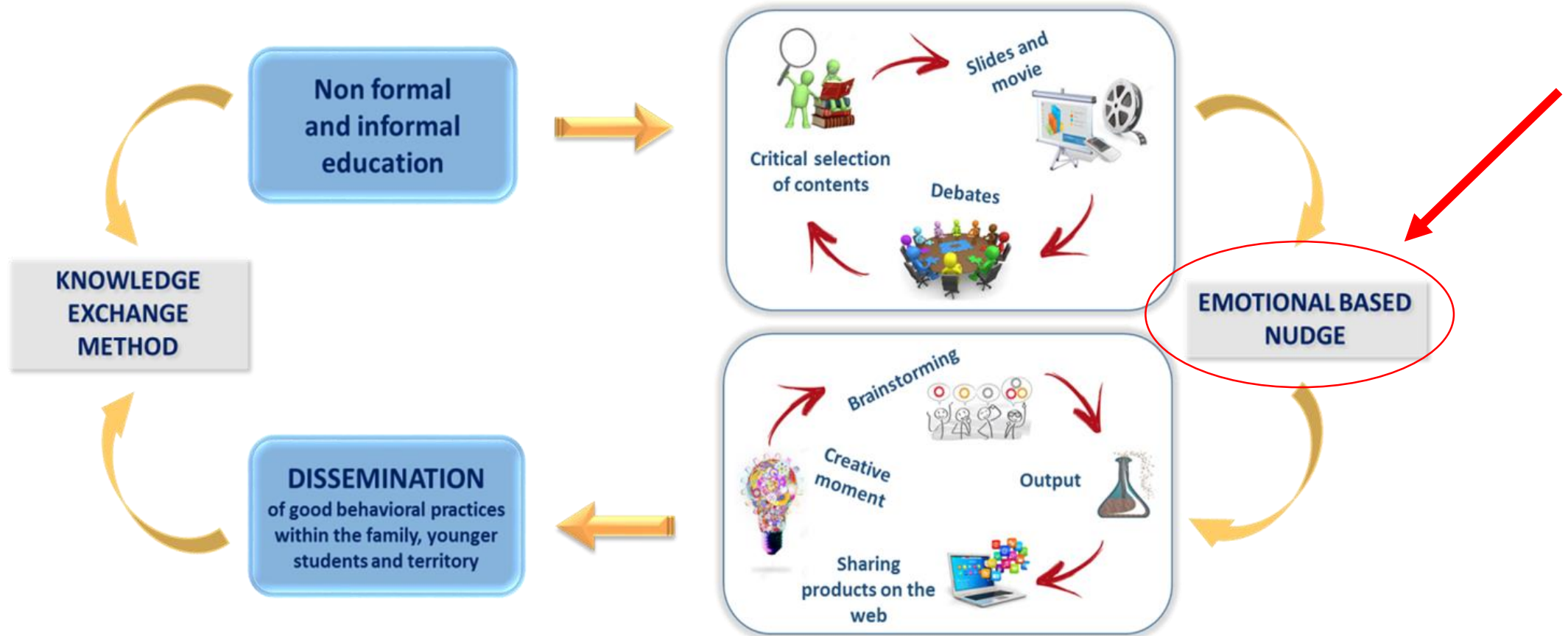
## NON FORMAL

- ✓ Experiential learning that aims to **realize knowledge by "experimenting"**.
- ✓ Sharing of knowledge in a "**horizontal**" and **multidirectional** relationship that takes place together, between teachers, trainers, experts and students.

## PARTICIPATORY

- ✓ The activities must be planned based on the **interests, perceptions** and **curiosities** advanced by the youngsters.
- ✓ Focuses on **their intuitions** the design of useful "products" that **transform the notion into concrete social utility**, in line with the European concept of science useful to progress and to growth.

# Our Methodology



Stimulates emotional and active involvement, particularly suited to stimulate students to work with their own resources and personal abilities and feel themselves protagonists of the project.

Application of the method to different projects

# TIE Project

## Erasmus plus

Call 2018- KA Cooperation for innovation and exchange of good practices

KA201: Exchange of good practices "Teaching basic sciences to young people with fewer opportunities: towards inclusive education"



### Aim:

To promote inclusive education through the development of social, civic and intercultural competences and improve access, participation and learning capacity of disadvantaged students, young learners with special needs; in particular to promote the acquisition of basic scientific skills and competences (such as: chemistry, physics and biology), encouraging critical thinking through the teaching of science in the environmental and/or cultural context.

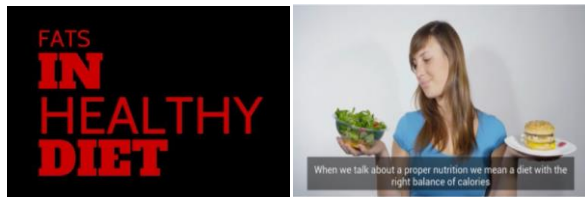
**"We don't have two kind of students, we only have students"**

**France, Greece,  
Bulgaria, Italy**

### Communicative products by students

- ✓ Processing food and food quality
- ✓ Scientific bases of correct lifestyles and health
- ✓ Safety at work

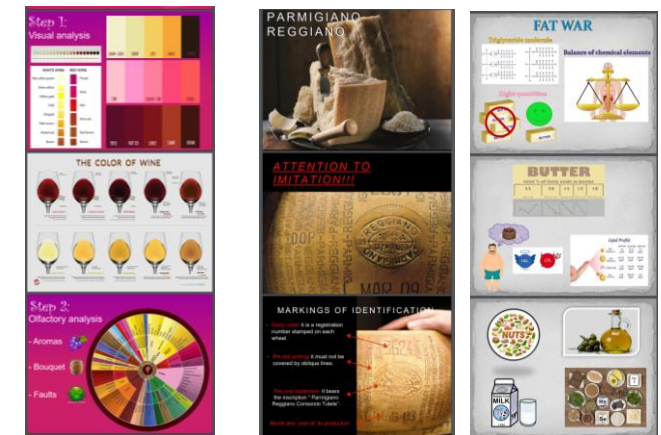
### Video «Fats in healthy diet»



### Video «Safety in pruning»



### Lessons for peer education



# “NOBLE MILK” method



## Research Project

“Safety and health at work in the dairy sector”

## Aim

Study of “Noble milk” production chain.

Students had to assimilate the information learned during non-formal lessons and create communication products on different aspects related to the production of noble milk: advantages and disadvantages, economic aspects, safety in the different phases of production, nutritional aspects.

## Communicative products by students

- ✓ Interviews with experts and researchers
- ✓ E-book aimed to spread good practices
- ✓ Comic gags about safety in different phases of production chain



# SPAIC project

## Research Project

"Food waste, consumer attitudes and behavior"  
by INAIL/DIT, Ministry of Health/DGSAN and Research Organization (CRF).



## Aim

The students had to assimilate the information learned during the training on different aspects related to food waste and create communication products to increase awareness of the problem among their peers, in their families and on their territory.

## "Neither waste food nor waste your health"

### Communicative products by students

- ✓ Street interviews
- ✓ Rap song "Hollyfood"
- ✓ Videos
- ✓ Table game
- ✓ Photo exhibition "Still Alive"
- ✓ Recipe book with leftovers

#### Table game



#### Recipe book with leftovers



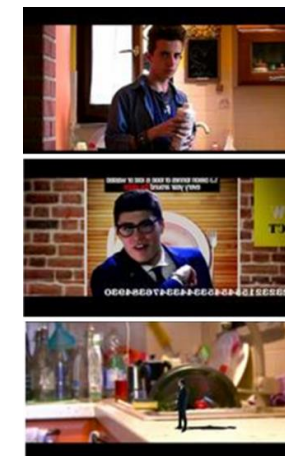
#### Photo exhibition "Still Alive"



#### Street interviews



#### Video



Different type of Nudging for different necessities

# Different type of Nudging for different necessities

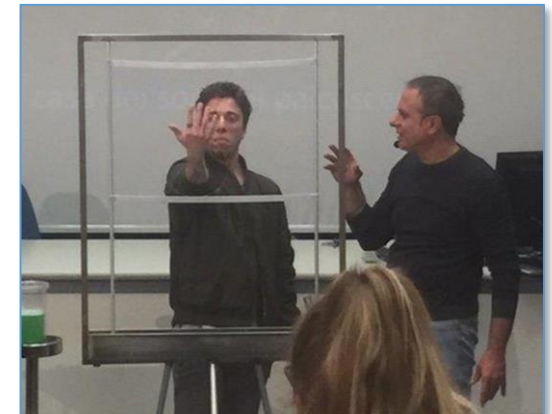
## SHOW COACHING

Stimulate the **emotional involvement**.

Allow students to experience a space and a time of suspension from the myriad of information and stimuli to which they are usually subjected, in which to give space and importance to their own emotional dimension, to their resonance and to its value as a motivational engine.



*Used in inclusive education projects and in a project against food waste.*



# Different type of Nudging for different necessities

## DIGITAL STORYTELLING

Stimulate the **cooperation**.

Teaching based on the use of narrative techniques, multimedia and digital technologies is a participatory teaching that aims at active learning and puts skills at the center of the school experience, improving manual skills, operations and combining knowledge, knowing how to be and how to do.

*Used in inclusive education projects.*



# Different type of Nudging for different necessities



## ARCHERY

It is a **coaching** tool.



Stimulate self centering, awareness, concentration and motivation, self-control, personal growth and emotions to help understand one's nature and orientation.

*Used in inclusive education projects and school-work experience models.*



**Students feedback**

# Intermediate evaluation questionnaire for TIE project activities



Questionario di valutazione intermedia del progetto TIE

1. Ritieni di aver appreso nuove conoscenze attraverso la partecipazione al progetto TIE?

Sì

No

2. Su una scala da 1 a 5 indica quanto ritieni che la partecipazione al progetto TIE abbia contribuito ad una tua personale crescita e positivo cambiamento.

1 2 3 4 5

per niente      del tutto

3. Ritieni utili simili iniziative per la diffusione della cultura della sicurezza e di corretti stili di vita? Indica la tua valutazione su una scala da 1 a 5

1 2 3 4 5

del tutto inutili      del tutto utili

4. Indica quale dei seguenti elementi è, secondo la tua opinione, un valido strumento per coinvolgere e stimolare i giovani ad aderire a simili iniziative di formazione/sensibilizzazione. (Puoi indicare anche più risposte)

Lezioni tenute da docenti esterni alla scuola

Partecipazione attiva alla realizzazione di prodotti

Libertà di espressione, spazio per la creatività, coinvolgimento in prima persona, divertimento

Utilizzo di nuove tecnologie

Other: \_\_\_\_\_

5. Partecipando al progetto (puoi indicare anche più risposte):

Ho imparato cose utili per la mia crescita personale

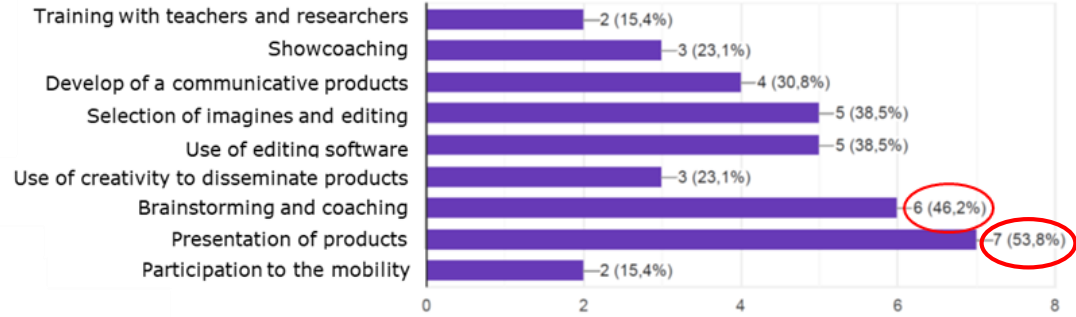
Mi sono divertito/divertita

Mi sono messo/messa in gioco, ho dato spazio alla mia creatività

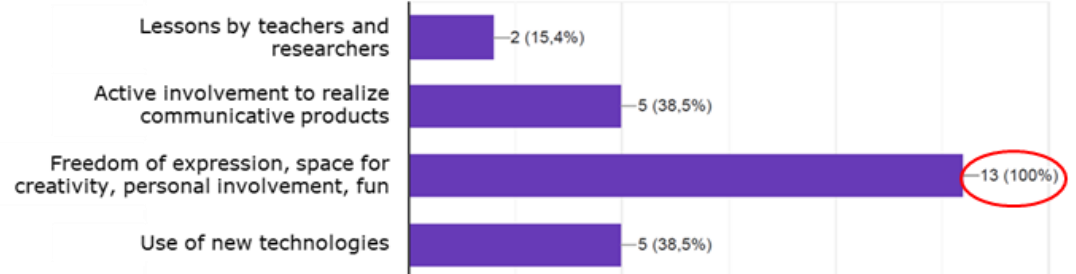
Mi sono sentito/serenità capace di generare un mio positivo atteggiamento per trasferire le conoscenze acquisite

Other: \_\_\_\_\_

6. Indicate which of the following realized activities you would like to be repeated:



4. In your opinion, which of the following elements is a valid tool for involving and encouraging students to join similar training initiatives. (you can also indicate multiple answers)



When there are...

*....students requested.....*

**Slight disadvantages**

.....to feel supported to a coach and to their group!!



**NEET risk**

.....to improve the sense of self-efficacy and confidence in their own resources and capabilities!!



**Non apparent or specific difficulties**

.....to improve and explore their emotional and unconscious resources to make the difference!!



## Conclusions

# Conclusion

- ★ Typical researcher's ability to adapt the work to the different situations and needs.
- ★ The active involvement of young people in products realization, (transferring contents and creating skills without impositions, allowing things to flow), should be acquired as a standard methodology in order to trigger their inherent ability to innovate in the world of work.
- ★ The most important value of the project is to create a conscious end motivate class of future workers: when the coercion to adopt correct behavior failed, the motivation and the self awareness to be an important element to improve safety (individual and collective) can do the difference.
- ★ In the future this methodology will be applied to **occupational safety projects**, as a motivational boost in the application and adoption of safe and conscious behaviors in workplaces.

WEB SITE AND SOCIAL  
DISSEMINATION

***www.innsite.it***



# RESEARCH DISSEMINATION



Pn 2.4



10<sup>th</sup> International Conference on the Prevention of Accidents at Work



Elena Sturchio, Miriam Zanellato, Priscilla Boccia, Maria Grazia Berardinelli



## THE "NUDGING-GENTLE PUSH" PSYCHO-BEHAVIORAL MODEL APPLIED TO AN EDUCATIONAL RESEARCH PROJECT

May 19-24, 2019, Mykonos island, Greece  
 Seventh International Conference On Environmental Management, Engineering, Planning And Economics (CEMEPE 2019) And SECOTOX Conference

**E-tools seminar 2019: OSH E-tools in the policy context**

A EU-OSHA seminar on E-tools

European Agency for Safety and Health at Work, Santiago de Compostela 12, 5 floor, 48003 Bilbao, Spain

Connecting Minds Creating the Future



OFFICIAL PARTICIPANT - ITALY

## The "Nudging-gentle push" psycho-behavioral model applied to safety in the biotechnological activities, according to Vision Zero

Elena Sturchio, Alessandra Ferraro, Priscilla Boccia, Miriam Zanellato, Maria Grazia Berardinelli  
 Inail, Dit, lab VIII, lab II

### The biotech scenario in Italy

The biotechnology sector in Italy is constantly growing. The public and private plants authorized by the National Competent Authority, the Ministry of Health, according to the Legislative Decree 286/2001 (Directive 2000/45/EC) for the application of the most advanced biotechnology methods, are about 500 in Italy. Many of these authorized premises are notified by Universities and Hospitals. Hence, the urgent need to increase the culture and skills for the prevention and protection of health and the environment in biotechnologies field, a critical point in the operation of the Legislative Decree. Inail's researchers have studied over the years different methodological approaches for training information and awareness of workers, in the field of safety in biotechnological applications.

**Rethinking «education» in Italian high schools**

The methodology was experimented in different projects in different Italian high schools, named SPAC model.

**Aim of ongoing research activities according to Vision Zero's golden rules**

- Active involvement of the "holders" of the projects: the legal person responsible for the contained use and the "managerial" who use biotech methods in the universities and hospital departments.
- Dialogue between users and Institutions, to work experiences, to discuss legislative aspects and of the needs of users.
- Direct and participatory managers involvement as the contained users ensure the success of the safety measures implementation in a company, as the managers are themselves the first examples with their actions.
- Plan corrective actions and optimize the work organization in order to ensure the correct application of the rules related to biotech, to develop specific skills and to project innovative solutions to optimize the experimentation.
- Interactive training activities: within laboratories and according to the needs highlighted by the users.

**Conclusions**

- Through the "gentle push" small changes are produced by acceptance of one's own ability, making the individual able to choose and consciously change. It is based on the techniques of prevention of behavioral changes.
- To gain experience in using methodological approaches, the researchers and the users are required by motivational people, as target change operators, who have experimented the participant emotions used as containers of information to pursue a communicative, individualized interest with a progressive and cultural view.
- The "gentle push" is an useful model to be applied to the conscious choices of voluntary safety path may be inserted in an educational model, stimulates the adoption of good practices and virtuous behavior even in everyday life. The methodology provides in summary the use of signs, small adjustments, which can increase long-term impacts, enhancing positive changes.
- The model replication should act on the attitudes of individuals, pushing them to adopt actions oriented towards the best achievable preventive results.

**The methodology "SPAC model"**

The participatory/interactive training methodology has been adequately notified by INAIL researcher through the study and application of the "nudging-gentle push" psycho-behavioral model, making the training approach more interesting and innovative. The methodology can not ignore a necessary motivational push generated through a correct action of users involvement.

The national components should be considered as well as the national components in planning educational practices that are most likely to be transformed in concrete behaviors. We hypothesized that the "critical" part of education (the non-traditional learning, peer education etc) can be enhanced, supported and amplified when accompanied by some elements that belong to a more "practical" and "emotional" learning (self-measurement, emotions, motivation, social pressure, feelings).

**The Nudging gentle-push**

According to Nobel Prize A. Thaler's theory about "nudge":

- Behaviors that rely on personal choices largely depend on self-regulation processes.
- Self-regulation processes are largely based on irrational components.

Employing behavioral insight as indicator of human behavioral response makes it possible to shape individual actions by changing the "choice architecture" of these events. These changes may prompt people to make better decisions about health, wealth and happiness, in their own declared interest.

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Inail Expert Elena Sturchio



SPAC Model

<https://youtu.be/ul6pls6jUDg>

**EUROPEAN BIOTECH WEEK**

**“Biotechnology and healthy lifestyles to protect the fragility of young people and territory”**

Biotechnologie e corretti stili di vita per la tutela delle fragilità dei giovani e del territorio

**Toscana 27 Settembre 2019**  
 “Largo della Pace 12 - Toscana (VT)”



**THE ITALIAN MICROBIOME INITIATIVE**  
 For Improved Human Health and Agricultural Sustainability

**Il ruolo del Microbioma**

- UOMO**
- ANIMALI**
- PIANTE**

**Plasticità del Microbiota**

**Un ecosistema in equilibrio**

**Microbioma intestinale ed obesità: effetti causali**

**Microbiota Intestinale e Malattie**

**UNA VISIONE FUTURIBILE**

The CRISPR-Microbiome Initiative: The Working Group



con il Patrocinio del



START  
EXPERIENTIAL LABORATORY  
**Genetic & Epigenetic**

*DNA extraction and basic concepts of epigenetics*

LABORATORY  
**Conscious choices**  
Chromatic symbolism e  
SPAIC Project-TIE Project

**“Biotechnology and healthy lifestyles  
to protect the fragility of young  
people and territory”**

Route A  
LABORATORY  
**Epigenetics, nutrition and  
correct lifestyles**

Route B  
LABORATORY  
**Food security and  
environmental sustainability**

Route C  
LABORATORY  
**Epigenetics between  
psychology and biology**

Route D  
LABORATORY  
**Drugs and Microbiome**

I luoghi:  
Mappa per orientarsi tra le diverse attività

Bioteecnologie e corretti stili di vita per la tutela  
delle fragilità dei giovani e del territorio



- **Area ROSSA**  
Inizio del percorso esperienziale
- **Area ARANCIONE**  
Epigenetica, Nutrizione e corretti stili di vita
- **Area MAGENTA**  
Sicurezza alimentare e sostenibilità ambientale
- **Area GIALLA**  
Epigenetica tra psicologia e biologia
- **Area ROSA**  
Chiesa Santa Maria della Pace
- **Area BLU (1° Piano)**  
Salotto scientifico
- **Area VIOLA (Piano terra)**  
Salaletta multimediale di approfondimento
- **Area VERDE SCURO**  
Scelte consapevoli, comunicazione, simbolismo cromatico e SPAIC
- **Area VERDE CHIARO**  
Orto sostenibile
- **Area AZZURRA**  
Team building



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