

DESIGNING INSTITUTIONAL SUPPORT FOR GENERATIVE AI ADOPTION: BUILDING ON STEM TEACHERS' DESIRED AND ACTUAL USE

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GenAI Innovation in Education

Benefits of GenAI to Support Student Learning

Immediate, Scalable Feedback
(Lee & Moore, 2024)

Tutoring & Support
(Pardos & Bhandari, 2024)

Active learning & Metacognitive Reflection
(ElSayary, 2024)

Barriers

Low Faculty Adoption despite positive attitudes
(Kim et al., 2025; Kamoun et al. 2024)

Insufficient Knowledge & Training
(Chounta et al., 2022; Antonenko & Abramowitz, 2023; Al-Abdullatif, 2024)

Institutional Guidelines Lacking
(Kim et al., 2025)

Supporting GenAI at EPFL

LEARN

(1): Collect **evidence** on faculty adoption of **GenAI** and associated characteristics

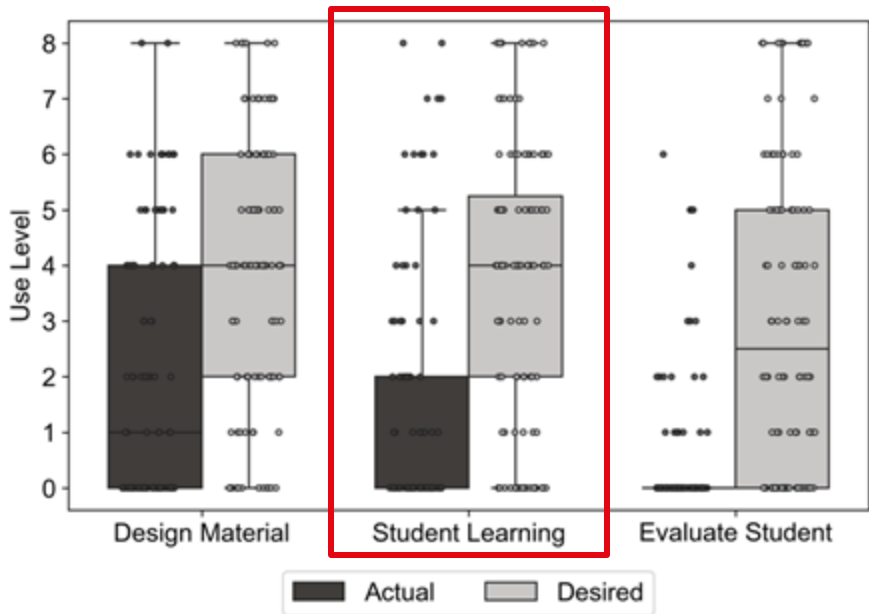
CAPE

(2): Develop **targeted initiatives** to support effective and innovative use

CEDE

(3): Design **practical tools** for effective and innovative use

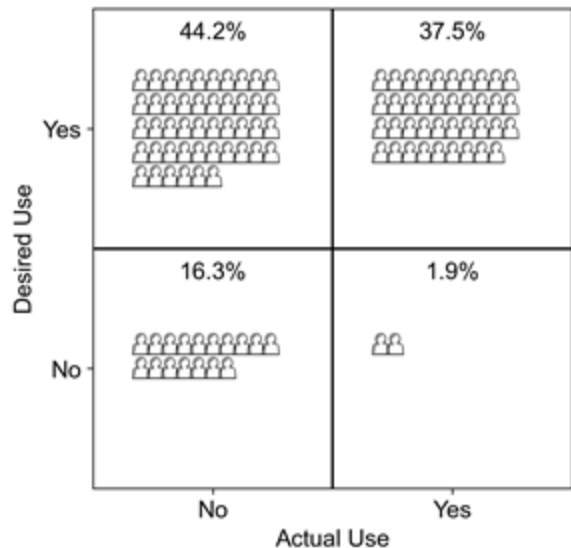
Actual and Desired Use of GenAI by EPFL Faculty



Across different applications, 86.3% of teachers (N=109) expressed a **desire to use GenAI tools** to a greater extent than they currently do

81.7% of teachers wish to integrate GenAI to support student learning, but the **majority do not actually use it yet**

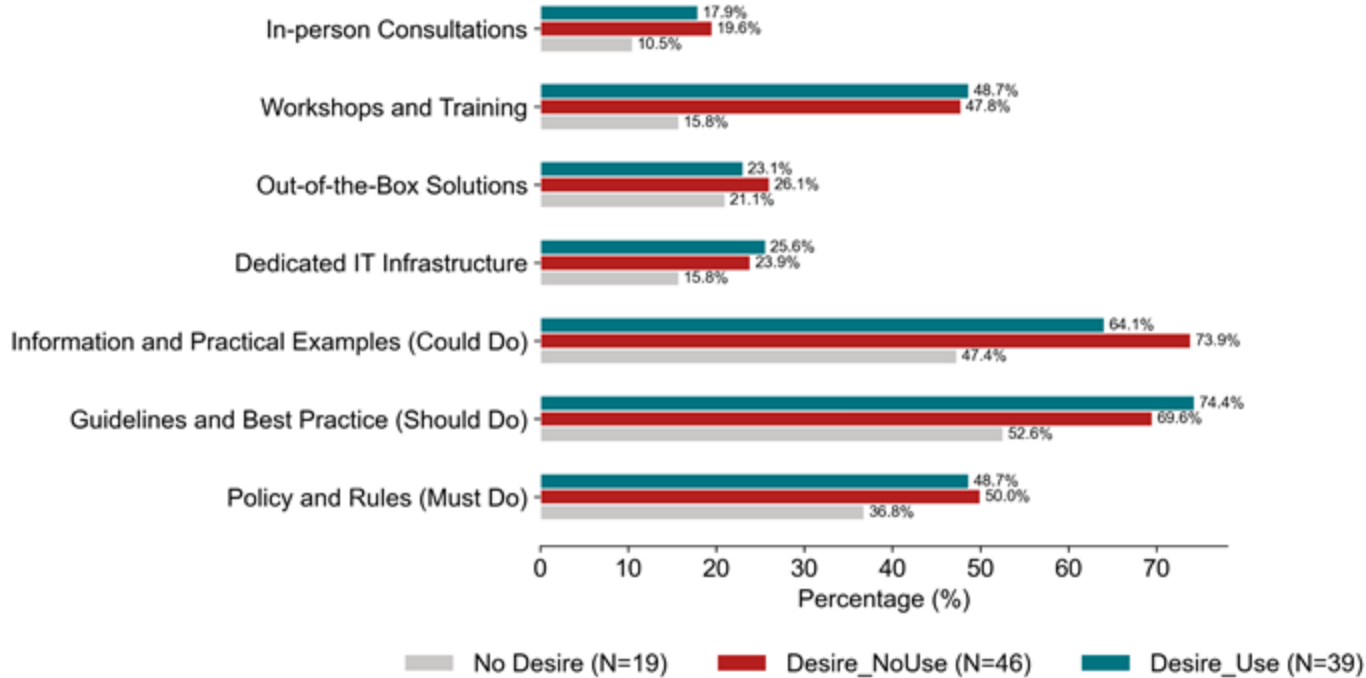
Different adopter profiles:



Factors Influencing Adopter Profiles

Hindering/Facilitating Factors	Desire to Use	Actual Use (when desired)
AI Attitude	+	=
Understanding	=	=
Skill	+	+
Usefulness	+	+
Feasibility	+	+
Loss of control	-	=
Threat	-	=
Perceived encouragement	+	=

Faculty Support Needs



Needs according to adopter profile:

All teachers requested guidelines and best practices

Teachers who had yet to start using GenAI need information and practical examples

Teachers who did not desire to use GenAI showed overall lower demand for support

IMPLICATIONS: CREATE INITIATIVES WITH THEORIES OF INNOVATION AND CHANGE

EPFL context

LITERATURE

HOW CAN THAT BE
EFFECTIVELY
TRANSLATED INTO
PRACTICE?

Cultural-Historical Activity
Theory (CHAT)

(Engeström, 2001)

Diffusion of Innovation
Theory (DOI)

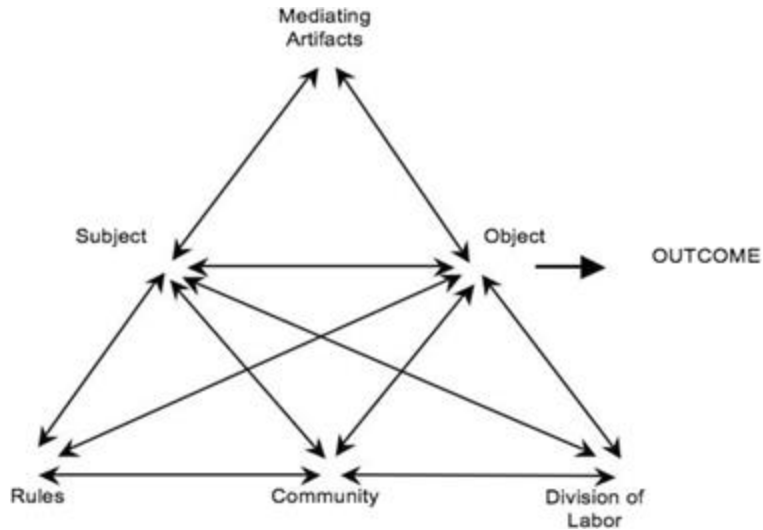
(Rogers, 1983)

Well-established
theories

Systemic view of
change

CHAT

Change as a result of dynamic interaction among 6 components



DOI

Factors influencing diffusion:

“Rogers (1983) defines diffusion as the process by which an innovation is *communicated through certain channels, over time among the members of a social system.*”

- **5 stages of innovation**
- How innovation is perceived
- Different adopter categories
- Nature of information transfer

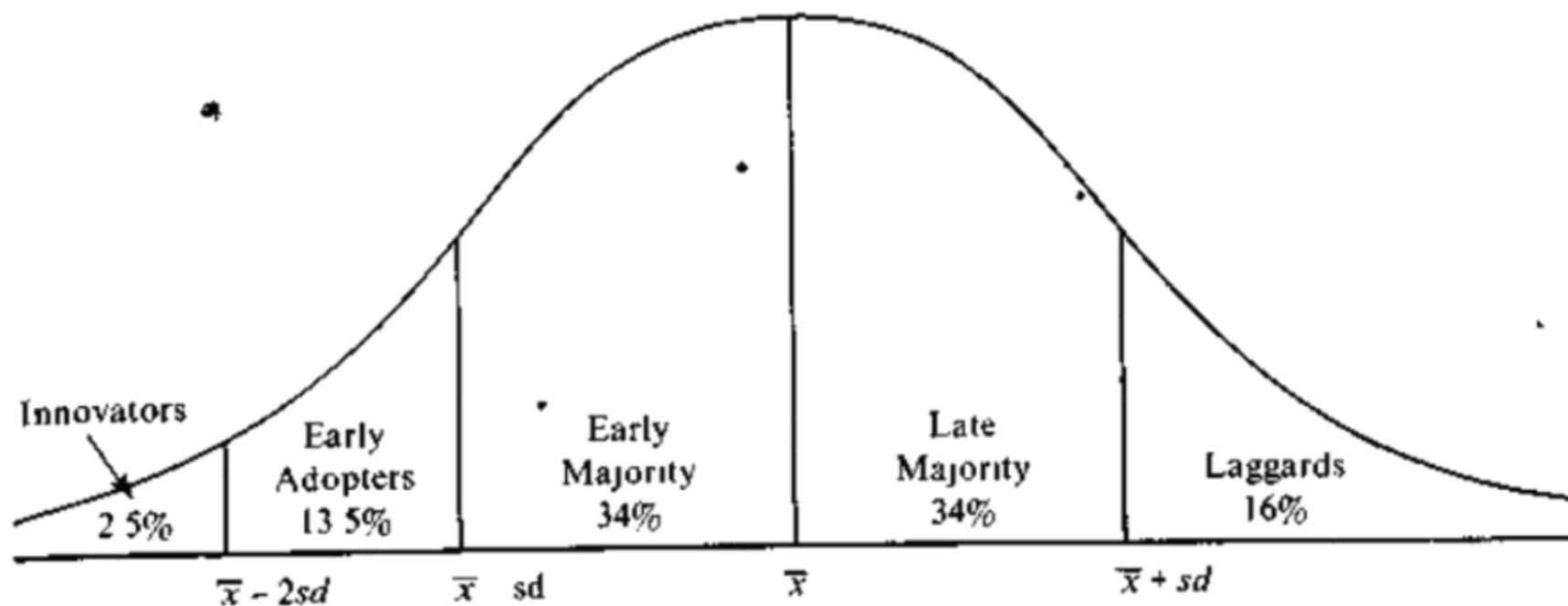
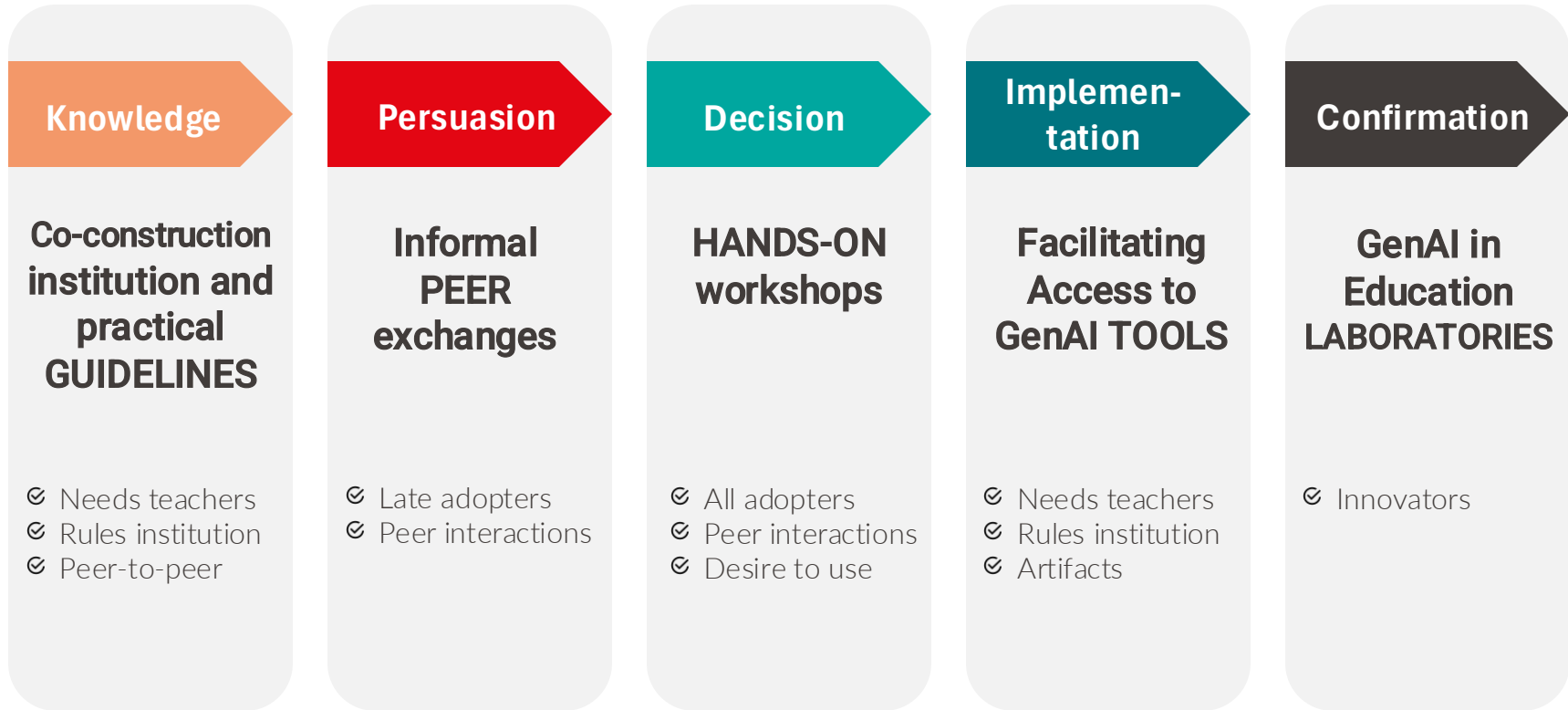
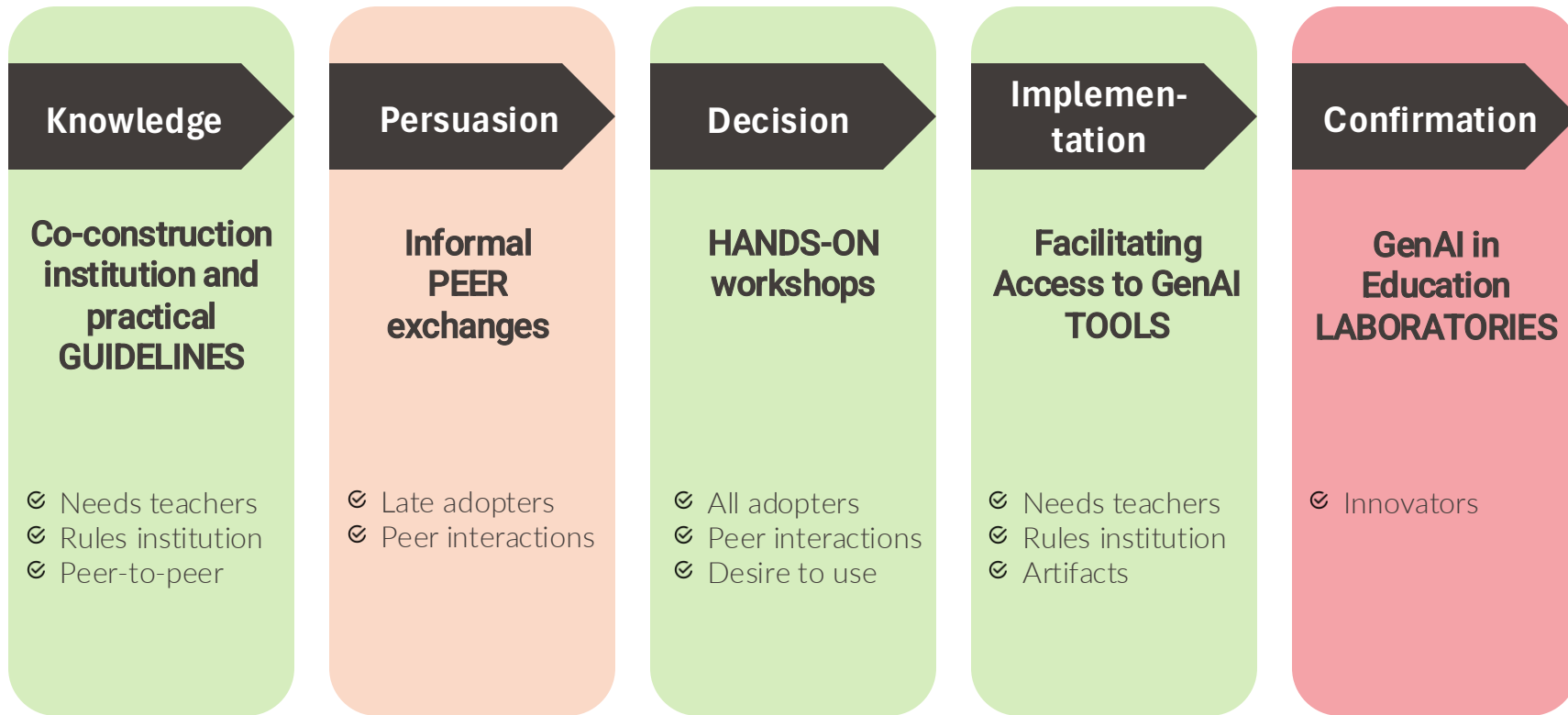
Innovativeness and Adopter Categories

Figure 7-2. Adopter categorization on the basis of innovativeness.





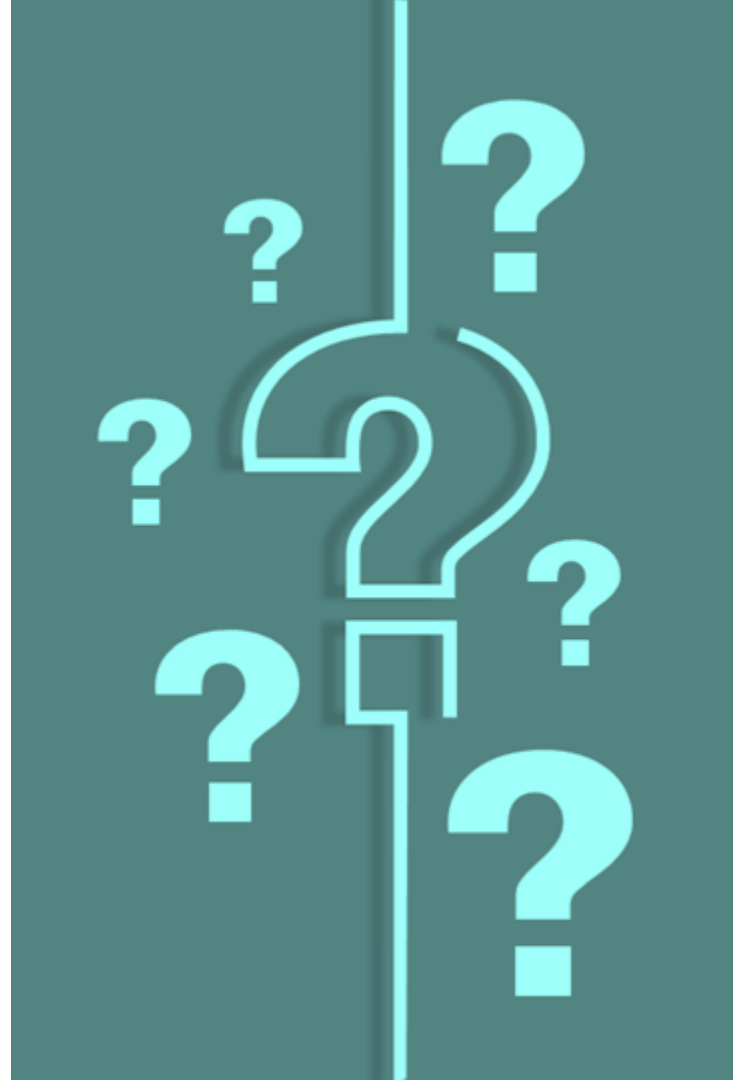
- Your practices and experiences with AI innovation?
- Did you follow a process or it is coming up organically?
- Is it important to have initiatives formalized?
- Successful initiatives?

THANK YOU!

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Perception of innovation

Perception of the attributes of innovation

- **Relative advantage:** is the degree to which an innovation is perceived as **being better** than the idea it supersedes. (*Rogers, 1983 p.213*)
- **Compatibility:** is the degree to which an innovation is perceived as **consistent** with the existing values, past experiences, and needs of potential adopters. (*Rogers, 1983 p.223*)
- **Complexity:** is the degree to which an innovation is perceived as relatively **difficult to understand and use**. (*Rogers, 1983 p.230*)
- **Trialability:** is the degree to which an innovation **may be experimented with** on a limited basis. (*Rogers, 1983 p.231*)
- **Observability:** is the degree to which the results of an innovation are **visible** to others. (*Rogers, 1983 p.232*)