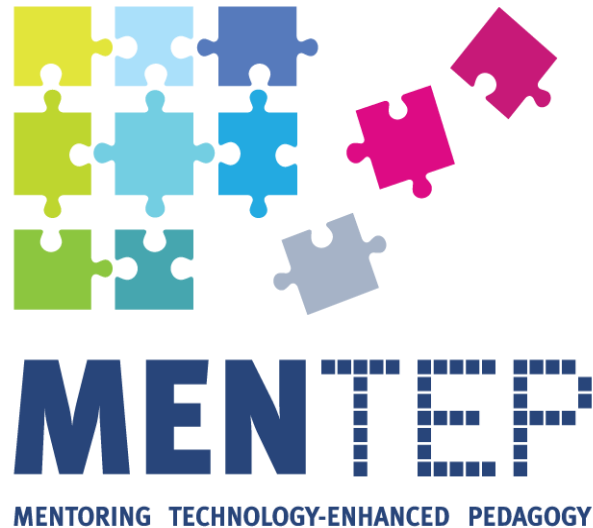


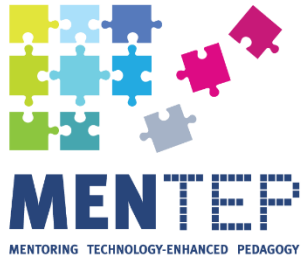
Final MENTEP Conference
27 March 2018
Bruxelles



How to run a policy experimentation?

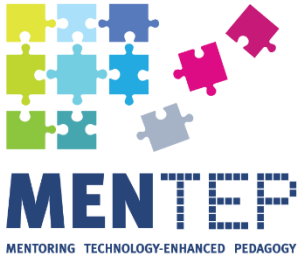
Workshop 1 – Success factors in policy experimentations

Giovanni Abbiati
Davide Azzolini
Daniela Piazzalunga
Enrico Rettore
Antonio Schizzerotto



How can we test if an intervention works?

Implementing an RCT in 10 steps



1

Start with a well
specified question

Does the **Technology-Enhanced Teaching Self-Assessment Tool (TET-SAT)** have an impact on teachers' **TET competences**?

The
INTERVENTION

Does the **Technology-Enhanced Teaching Self-Assessment Tool (TET-SAT)** have an impact on teachers' **TET competences**?

The
OUTCOME

Do you have a 'cause-effect'
question in mind?

YES



Running an experimental
research design *could be* an
option

NO



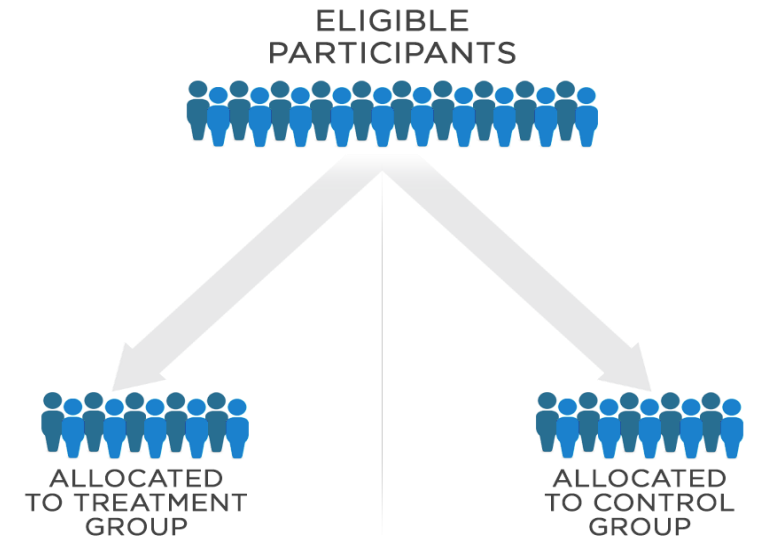
Running an experimental
research design *is not* an
option

What is an experiment in policy analysis?

Think about a clinical trial...

Clinical trials are aimed at **testing the efficacy of a given drug**.

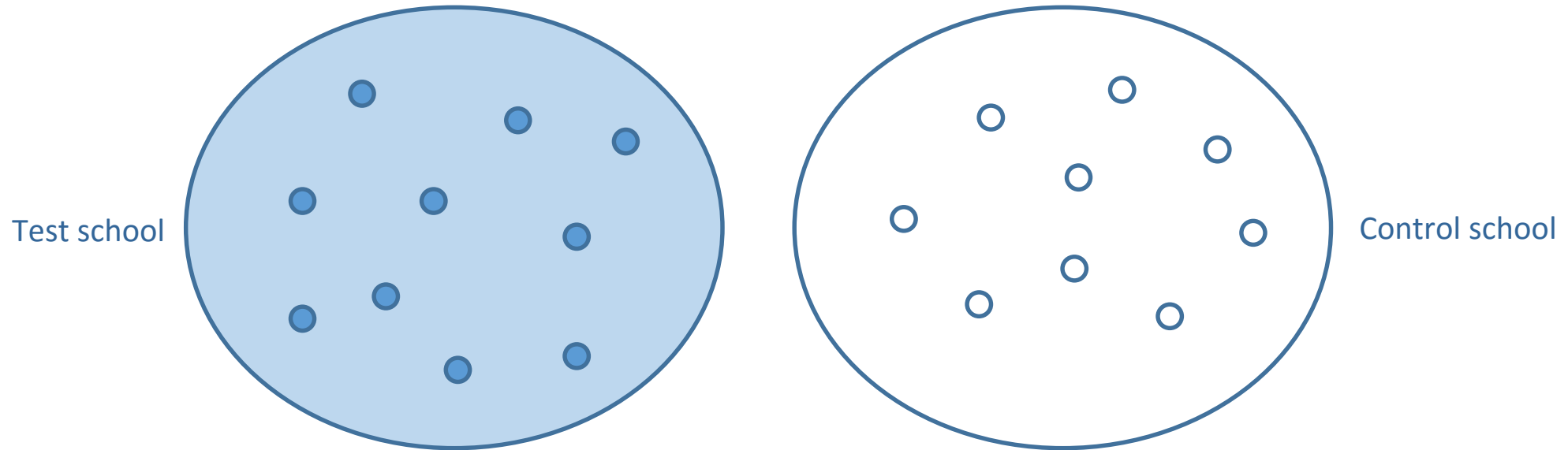
Randomisation ensures that **the control group represents the counterfactual**, i.e. the situation we would observe in the treatment group if the members of the latter had not taken the drug.



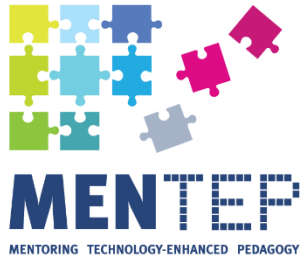
The MENTEP experiment

Teachers in the “**test**” schools receive a set of **encouragement e-mails** explaining how to use the TET-SAT and why they should.

Teachers in “**control**” schools receive no information.



- Encouraged teachers: **Treatment group**
- Non-encouraged teachers: **Control group**



2

Identify *measurable* outcomes

An overview of the MENTEP outcomes

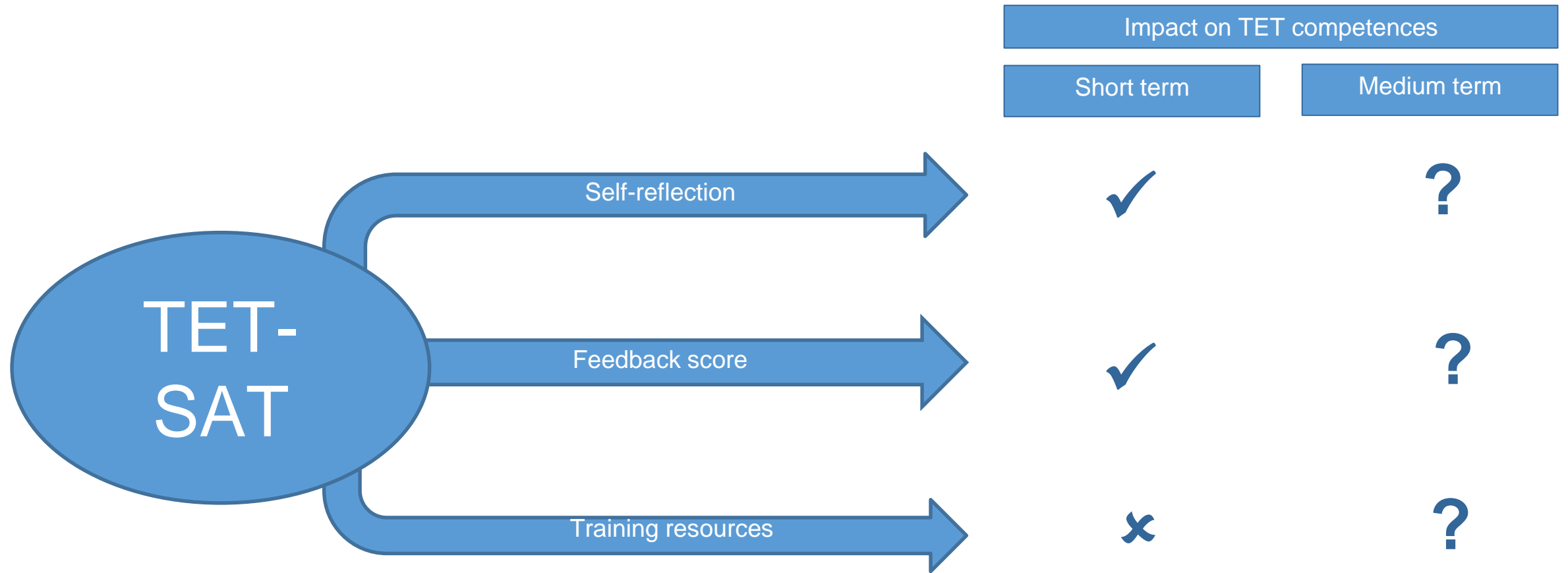
- Self-assessed TET competences:
 - Teacher's self-assessed competences to support pupils for ICT use in class
 - Teacher's self-assessed competences to use ICT for instructional design
- Views on ICT in teaching and learning
- Use of ICT in the classroom
- Use of ICT devices and software
- Participation in ICT-related training

3

Make the theory of
change explicit

What do we expect?

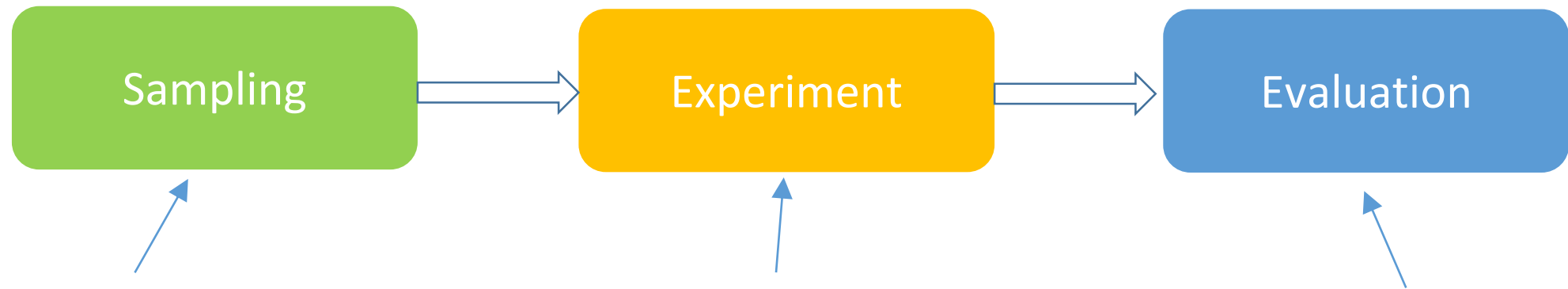
Three possible **channels** linking the TET-SAT to TET competences



4

Carefully plan the field operations

The three phases of the MENTEP experimentation

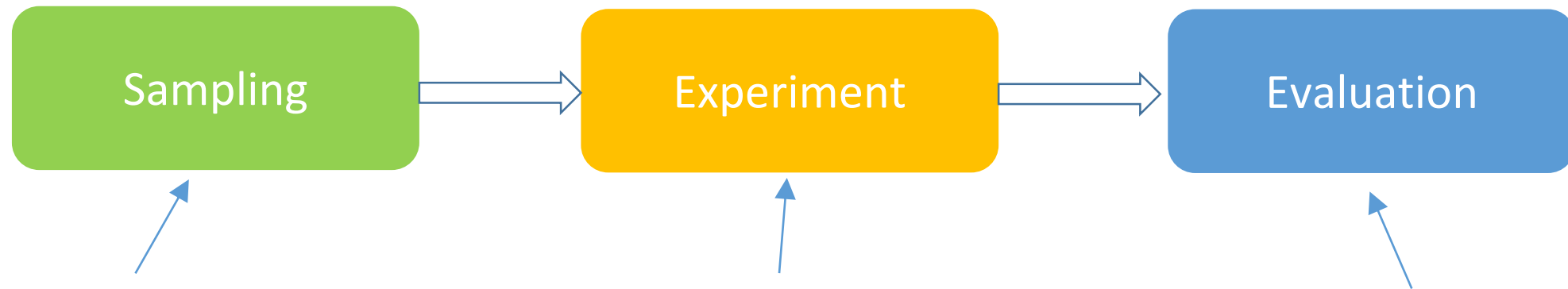


Selecting the schools and teachers
that are going to be part of the
experiment

Implementing the randomised
encouragement design for the
evaluation of the TET-SAT

Assessing whether the TET-SAT
changed teachers' competences

The three phases of the MENTEP experimentation



Selecting the schools and teachers that are going to be part of the experiment

External validity

“the extent to which the results of our experiment can be generalized to the entire teacher population”

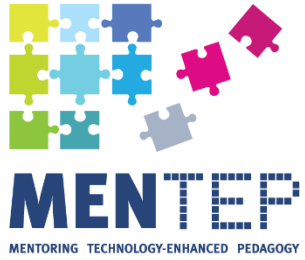
≠

Implementing the randomised encouragement design for the evaluation of the TET-SAT

Internal validity

“how well our experiment is done, i.e. treatment and control groups are actually comparable”

Assessing whether the TET-SAT changed teachers' competences



5

Recruit schools and teachers

The MENTEP sampling and recruitment approach

A) Define the target population

“Eligible schools” are publicly funded ISCED-2 schools with a satisfactory degree of ICT equipment (low students/pc ratio and ICT infrastructure such as broadband)

B) Obtain the complete list of schools

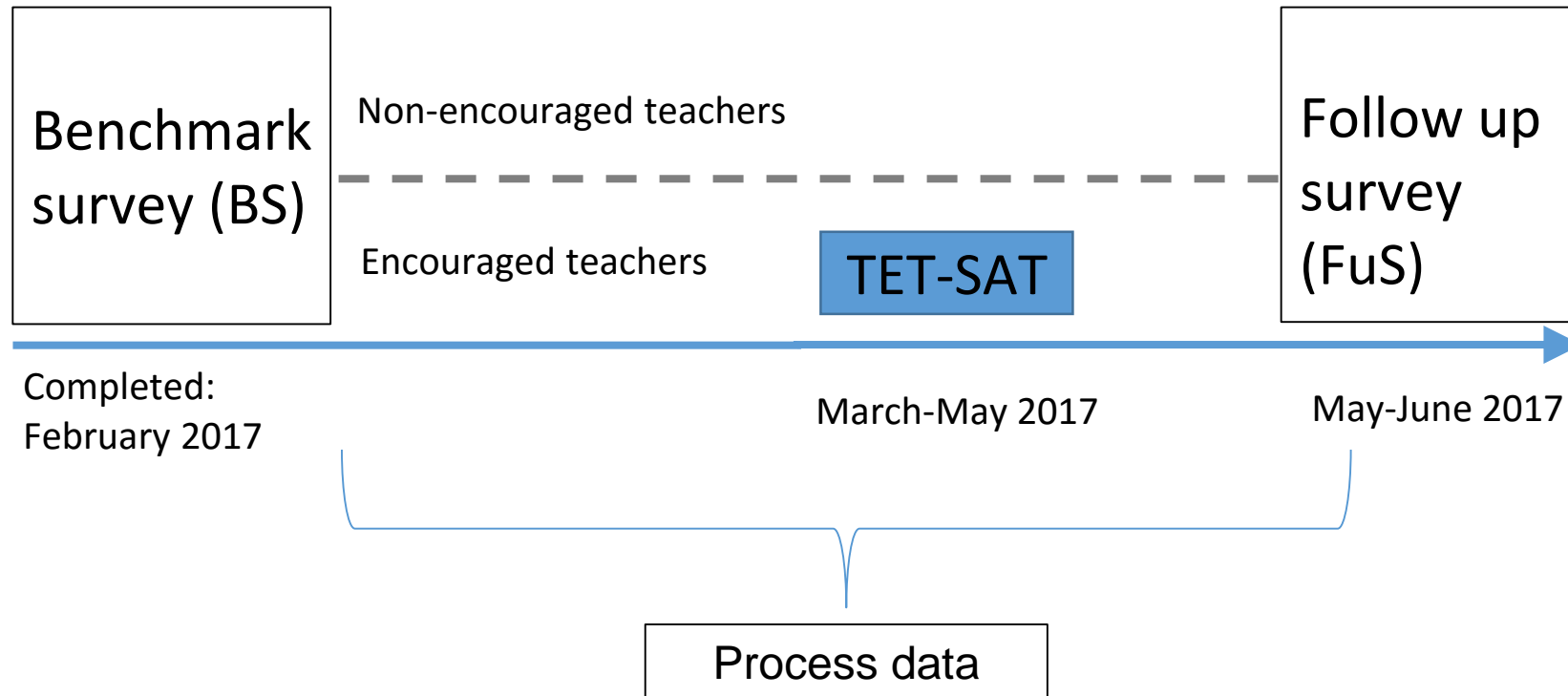
C) Draw a representative sample of schools and teachers

D) Invite, recruit and replace

6

Collect the relevant
data at the right time

The MENTEP data collection



The MENTEP data collection

Benchmark survey (BS)

Before the intervention all sampled teachers completed an on-line benchmark survey to

- (a) assess their TET competencies
- (b) collect a rich set of information on their educational and professional experience.

→ BS is used to check the actual comparability of the groups

Follow-up survey (FuS)

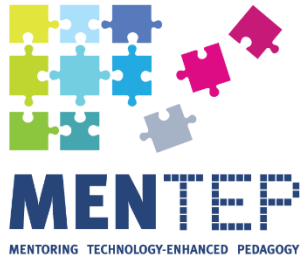
After the intervention, all sampled teachers re-assessed their TET competences.

→ FuS provides the measures of outcome variables

Process data

User behavior traces automatically generated by the platform **during the intervention**

→ provide information on actual usage of the tested tool

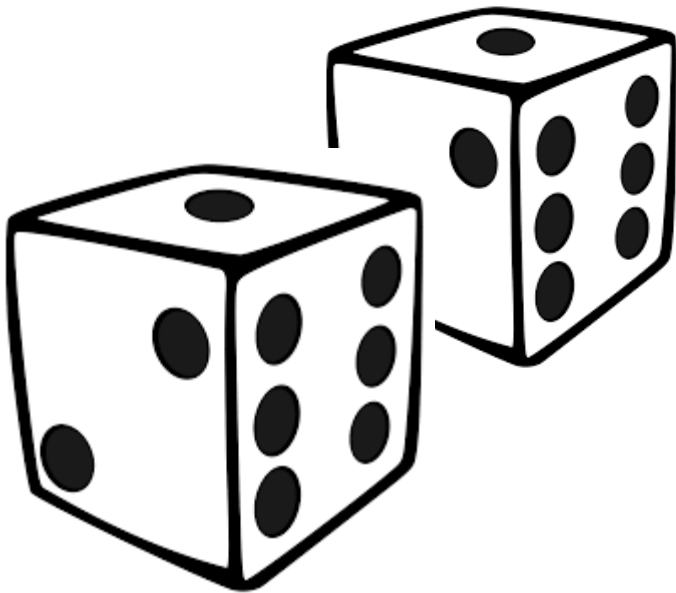


7

Randomise!

Randomly allocate sample units to either the treatment or the control group

... Better if an independent institution does it for you!



Check the units' compliance with random assignment

Monitor and keep track of any non-compliance

8

Check actual
statistical equivalence
of the two groups

Balancing test

Variables		Control	Treated
Gender	<i>Female</i>	74.6	73.7
Age	<i><30</i>	3.2	1.2
	<i>30-49</i>	57.7	57.6
	<i>49<</i>	39.1	39.2
Subject	<i>Humanities</i>	43.3	41.9
	<i>Science</i>	31.1	31.8
	<i>Other</i>	25.6	26.3
ICT training	<i>None</i>	8.5	10.1
Positive views towards ICT	<i>std. factor</i>	-0.01	-0.00
Use of ICT in lessons	<i>std. factor</i>	0.005	-0.00
Collaboration with colleagues about TET	<i>std. factor</i>	1.86	1.80
Basic ICT tools used in classroom	<i>std. factor</i>	0.011	-0.05
Educational ICT tools used in the classroom	<i>std. factor</i>	0.016	-0.00
Self-assessed TET ability	<i>std. factor</i>	0.011	-0.02

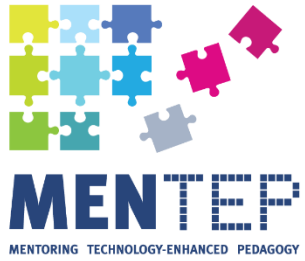
9

Beware of the loss of
participants
(attrition)!

Follow-up survey completion rates

The two groups	Number of teachers		Response rate (FUS/BS)
	Benchmark Survey	Follow-up Survey	
Non-encouraged teachers	3,641	2,861	78.6%
Encouraged teachers	2,750	1,917	69.7%
Total	6,391	4,778	74.8%

Despite the different response rates across groups, **the equivalence of the two groups is still there!**



10

Analyse the data

- ✓ Link the empirical findings with the ‘theory of change’ explicated at the beginning
- ✓ Wrap up conclusion in both a technical and non-technical fashion