



ZNL

TransferZentrum
für Neurowissenschaften
und Lernen

Research for the educational practice

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Transfer Center for Neuroscience and Learning

- Neuroscience provides impulses for research on learning
- An interdisciplinary team transfers and creates knowledge about learning in order to improve the learning in and outside the educational system

People

At the start: founded in April 2004 with money for 5 full-time positions for 5 years

Part of Psychiatric hospital:
colleagues are medical doctors and researchers in the area of cognitive neuroscience

Currently: 40 staff (psychologists, educational scientists, biologists, sociologist, teacher)
No tenure positions, often part-time

A blue-tinted microscopic image of a neuron, showing its cell body and branching processes, serves as the background for the top header.

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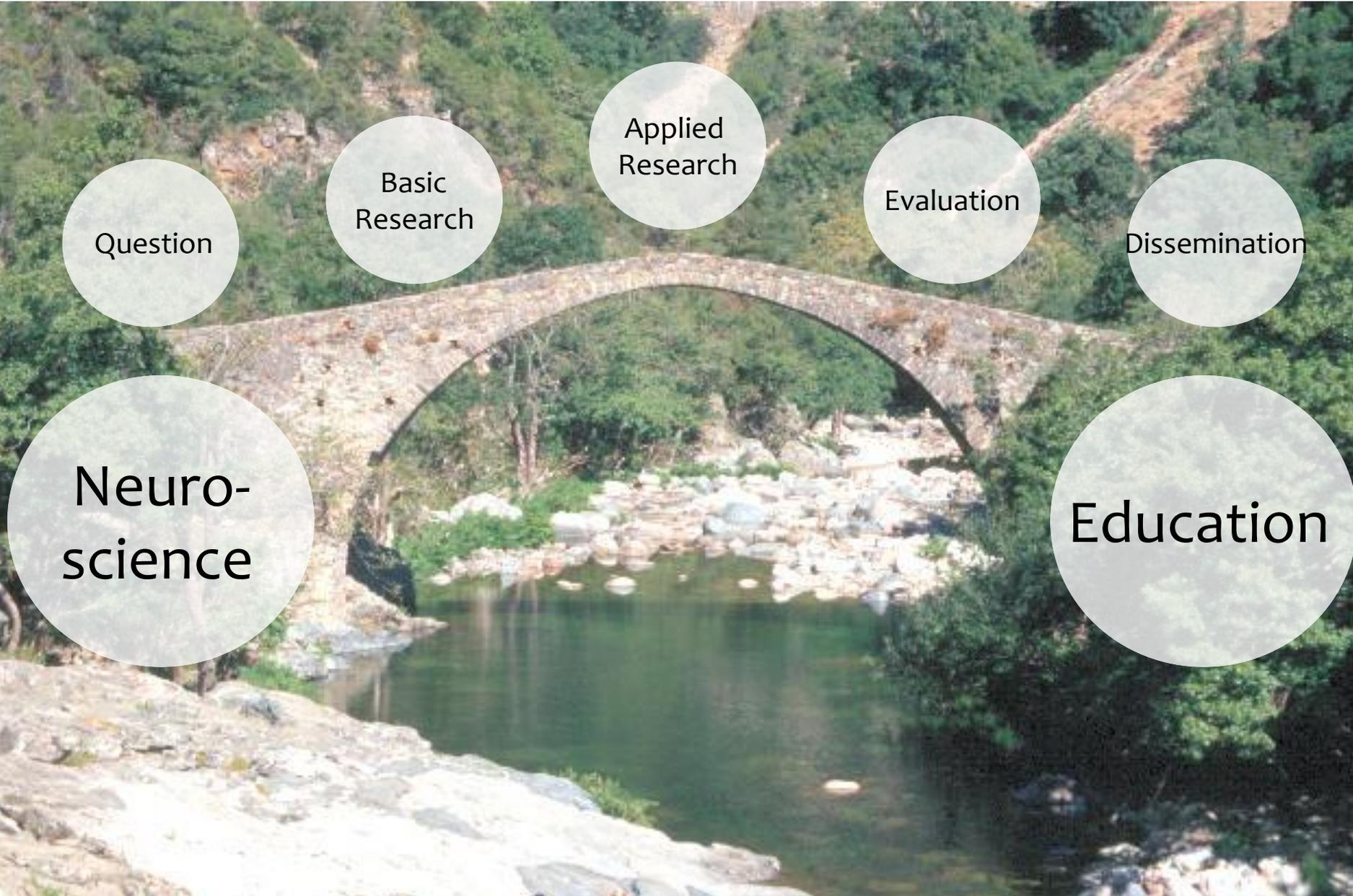
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Transfer needs a special research approach

The special research approach

- Psychology as science that answers questions no one has asked ...
- Science not for the sake of science but as service for practitioners in need
- Building bridges by doing translational research – from “bench-to-bedside”





Auditive Perception & Learning to Read and Write

EEG-Study:
Phoneme
discrimination in
children at risk

Webbased Screening:
Phoneme
discrimination in
kindergarten children

MRI-Study:
Auditive perception
in adult dyslexics

Psychophysics:
Tresholds of perception
and Learning to read
and write

Predictive validity of a
discrimination
questionnaire

RT and MRI-Study:
Discrimination of
vowel length in adult
dyslexics

Neuro-
science

Education

Physical Exercise and Learning

Intervention:
The influence of
jogging on attention
and memory

Evaluation:
Physical exercise at
school and cognitive
ability, mood and
attention

EEG study:
Physical Exercise and
executive control
(and genes)

Intervention:
Watching TV and
physical activity

Development and
Evaluation of
Movement games

Intervention:
Preventing Obesity in
elementary school
children

Neuro-
science

Education

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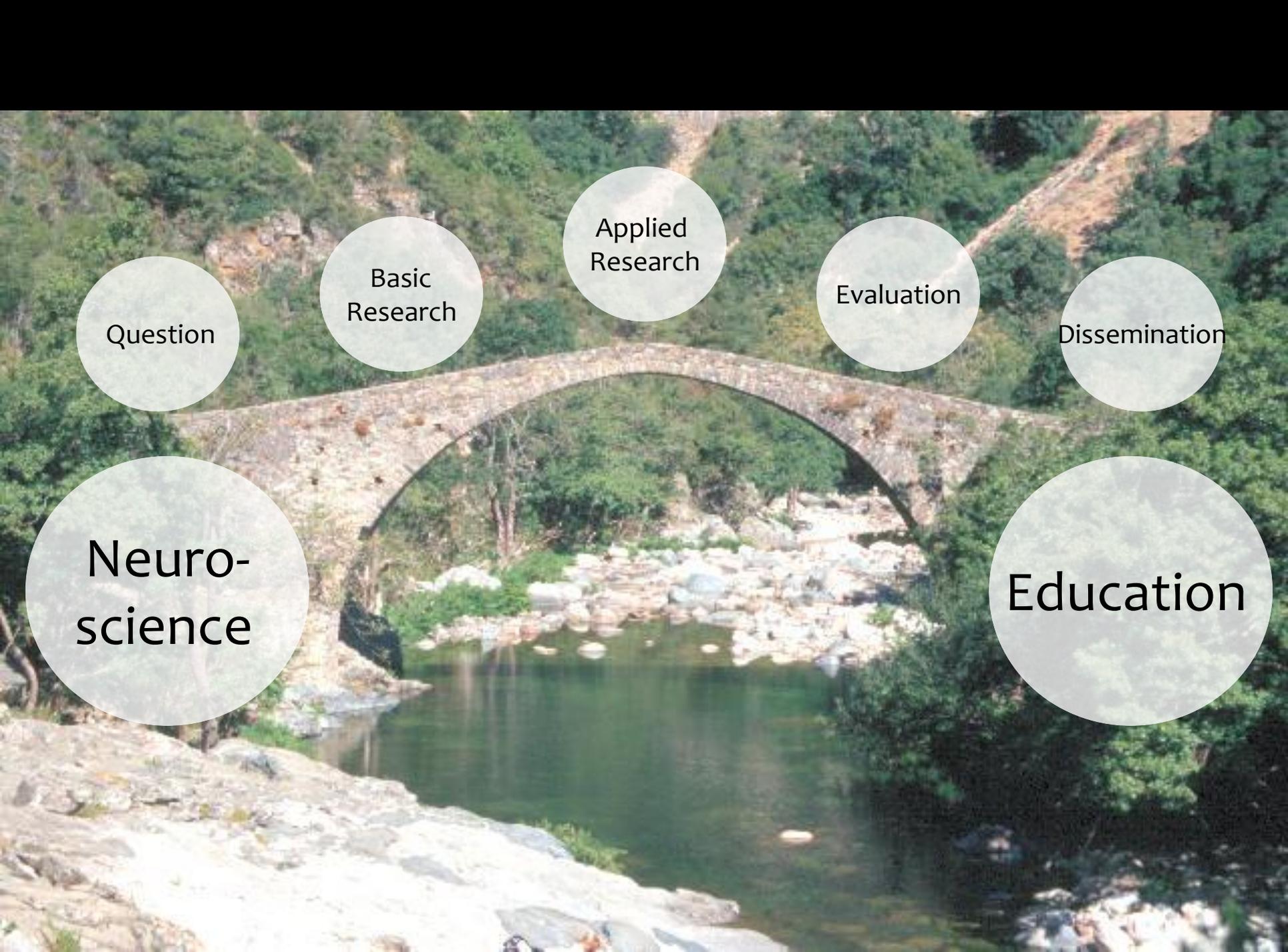
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Special kind of researchers

Transfer needs a special kind of researchers

- Interdisciplinarity: appreciating the perspective of the other sciences
- Science as Service: Working on the problems of the real world in a system that almost punishes that research
- Teaming up specialists
(people who know much about little)
with generalists
(people who know a little about much)
to integrate findings and build bridges



Question

Basic
Research

Applied
Research

Evaluation

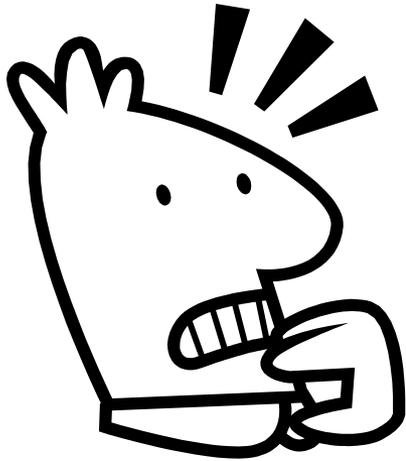
Dissemination

Neuro-
science

Education

Bringing research into educational practice (for innovation)

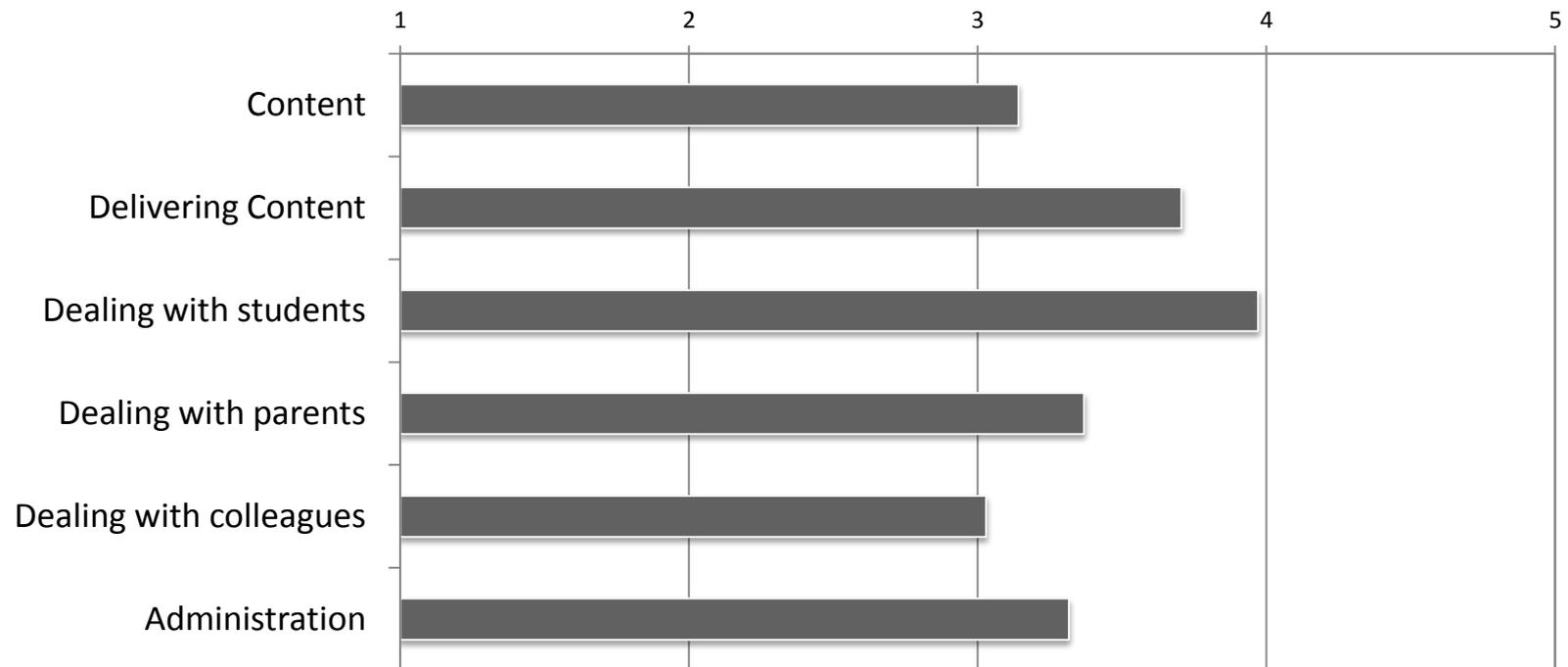
If a fairy grants me a wish ...



- Kevin doesn't do his homework, imposed sanctions don't help
- Nikolai refuses to read out aloud and disturbs the class with foul language
- Volkan beats up the geeks on the schoolyard
- Abigail doesn't care for prime numbers
- Emily declares: The teacher has never talked about the European province that was part of the test. Her parents want to see the headmaster.

Support for teachers

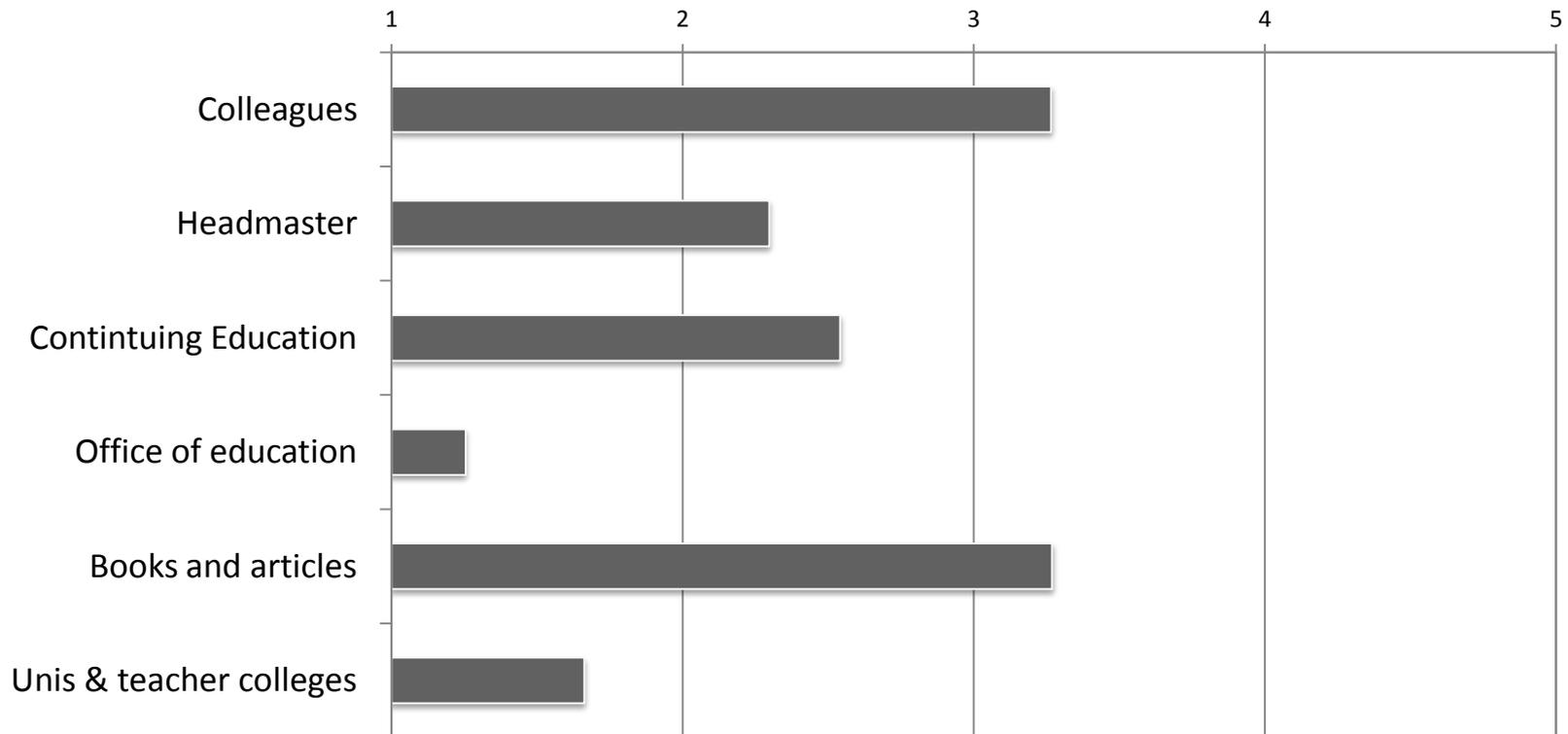
Wish for more support [1 = not at all; 5 = very much]



Support for teachers

Used support from ...

[1 = not at all; 5 = always]



Why is support from universities and teacher colleges not used?

- Never thought about this option
- Would not know where to turn to
- Are they competent enough?

“People there lost contact with reality of school. Their experiences are decades old or they were never or only very briefly at school.

They are so specialized that we cannot talk to them about complex problems: Some know about school books and what ought to be learnt but nothing about how children learn. Some are expert for content but don't know about the students of a certain age. Some know children only from books and brief school visits.”

Where do practitioners turn to?

- The medical system has general practitioners
- Hotels have receptionists and front desks



If the fairy grants me a wish for bringing research into educational practice

- Give teacher / schools access to similar kind of educational help desk people who
 - have a good grounding in school reality
 - know a lot about research of the diverse field associated with school and learning
 - are supported by research that is relevant for practice
- With the task to
 - Take ownership of the practitioners' problems
 - Provide information or organize additional help

 **Bedankt!**