Job stability, anxiety, student well-being, and social contacts: Insights from network data science into educators' feelings and attitudes during the COVID-19-induced school closure

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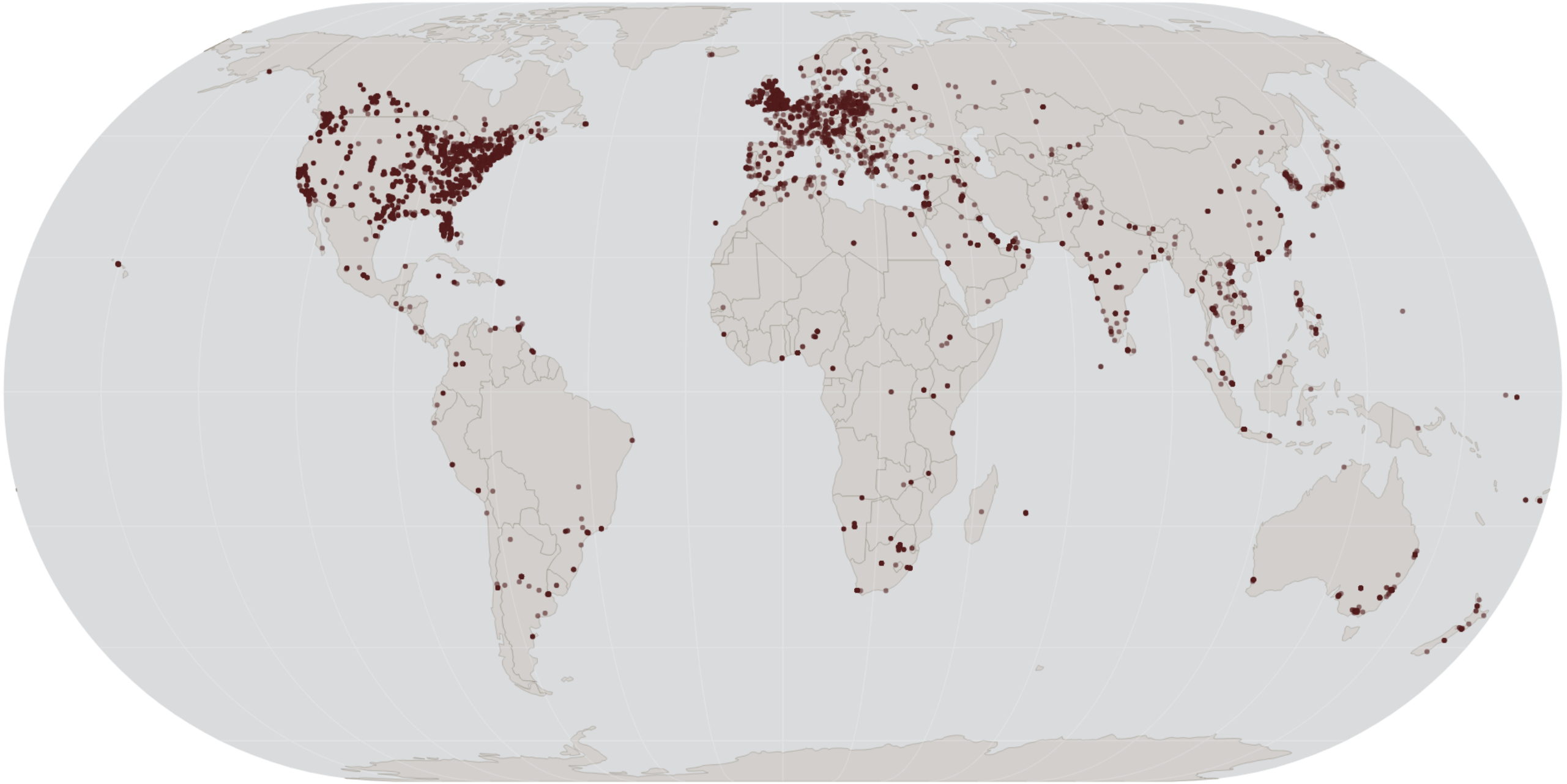
Background

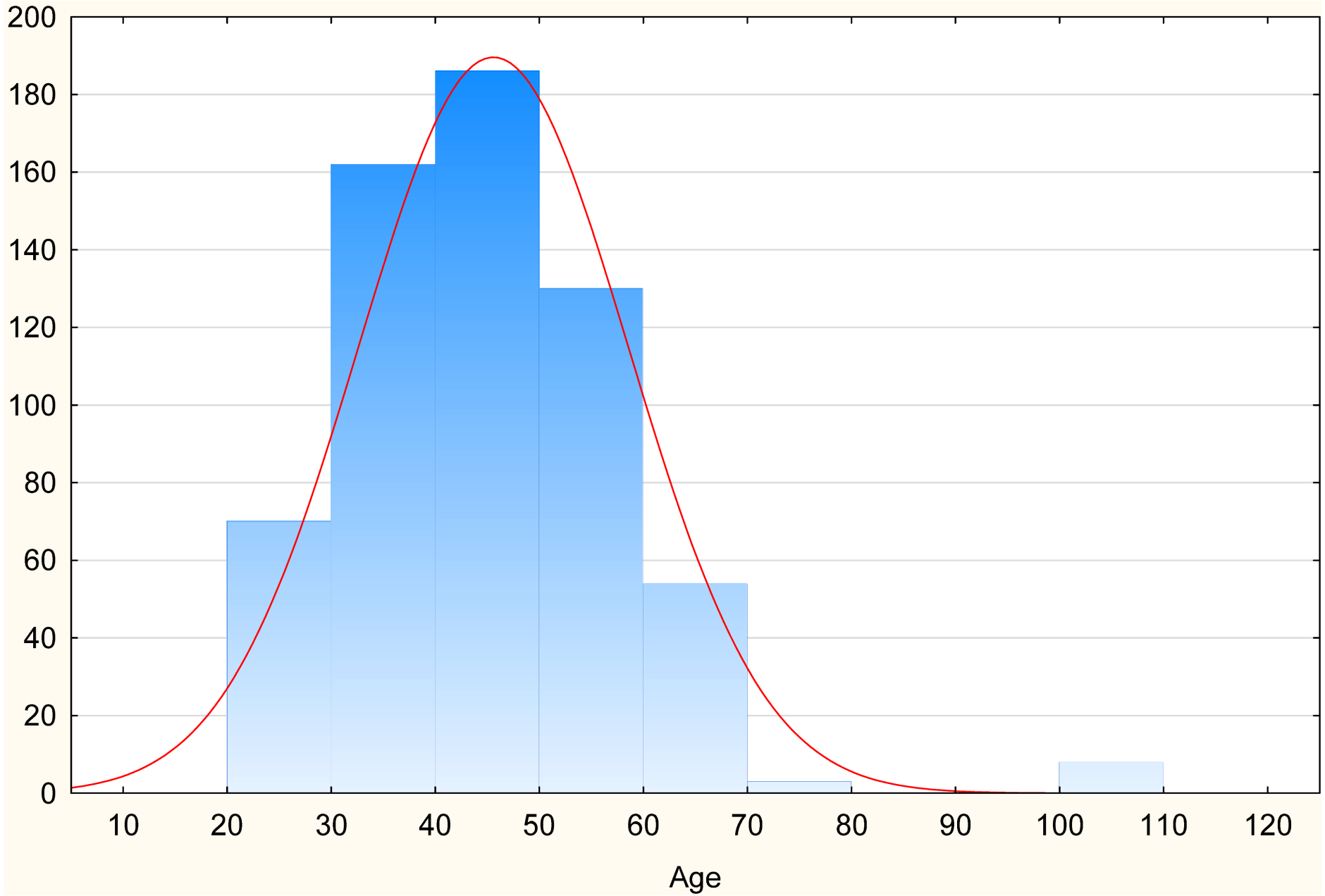
The current global SARS-CoV-2 pandemic has affected educational systems all over the world, throwing educators and learners into the necessity of **shifting to emergency remote instruction**, often with no time given for preparation. The unprecedented challenges of distance teaching, lockdown, and social distancing have collectively exerted a profound impact on educators' and learners' lives on personal, familial, social, emotional, cognitive, economic, and professional levels.

In some countries, teachers + learners together account for **nearly 20% of the population** (e.g. 1.8% and 17.3% of Poland's population, respectively).

The study

Since April we have been carrying out a global longitudinal study (so far involving **over 7,300 participants** from **102 countries**; average completion rate: 32%), looking at **435 interlocking factors** that have potentially influenced stakeholders' health, wellbeing, and effectiveness in teaching and learning during school closures. In particular, we have aimed to understand what **circumstances, behaviours, attitudes and psychological traits** have facilitated the shift, and what caused difficulty.

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Age

Psychological perspective

Albert Bandura's social learning theory

Individuals' functioning, including the acquisition of knowledge and skills, is determined by the interaction of:

- **individual factors** (beliefs, attitudes, expectations, prior knowledge, personality traits…),
- **behaviours** (individual actions, decisions and statements), and
- **the social and physical environment** (resources, consequences of actions, other people and surroundings…)

These three groups of factors also seem to determine how individuals deal with the requirements and challenges of remote instruction.

"Human action, being socially situated, is the product of a dynamic interplay of personal and situational influences." (Bandura, 1999:155)

Methods

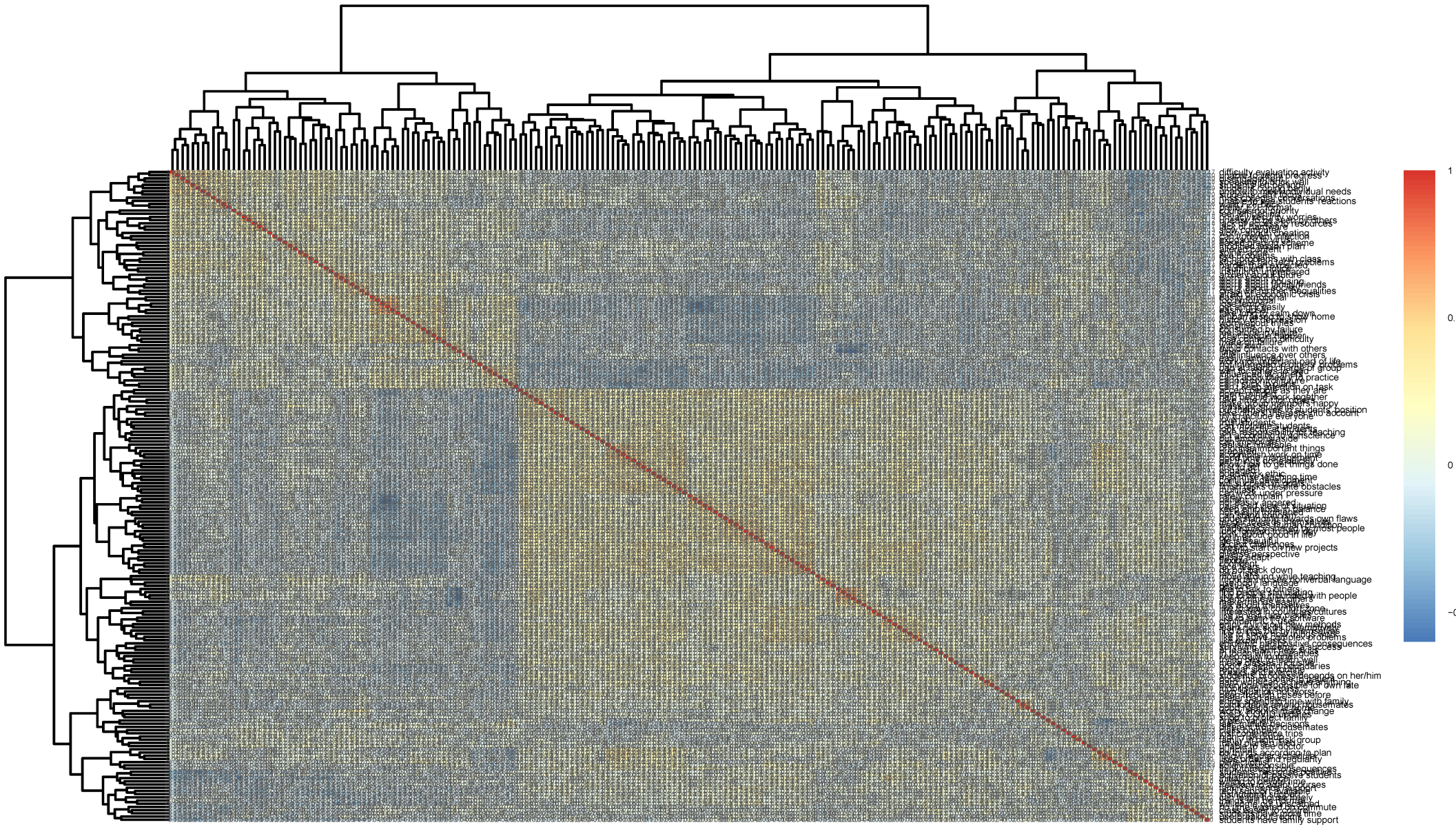
435-item online questionnaire comprising:

Higher-level constructs	Example variables/subscales
General professional experience	type of school and classes, semester schedule
Remote teaching-related experiences & attitudes	attitudes toward remote teaching logistics communication/interaction problem solving perception of student coping with remote learning
Well-being during the COVID-19 pandemic	health-related attitudes toward COVID-19 future expectations daily routines/habits situational stability emotional coping with lockdown active coping social support and prosocial involvement

Methods (ctd.)

Higher-level constructs	Example variables/subscales
Perceived Stress Scale (Cohen *et al.*, 1983)	
Character strengths/Psychological capital*	locus of control, experience-seeking, curiosity, creativity, courage, tranquillity, patience, flexibility, planfulness, organization, self-discipline, perseverance, responsibility, understanding, leadership, sociability, nonverbal expressiveness, optimism, emotional reactivity *Self-Compassion Scale – Short Form* (SCS-SF; Neff, 2011)
Social background	

*Subscales measuring personality traits, which constitute the components of character strengths/ psychological capital, were selected from the *International Personality Item Pool* (IPIP). The subscales are composed of 4 to 6 items with Cronbach's alpha values ranging from .50 to .85.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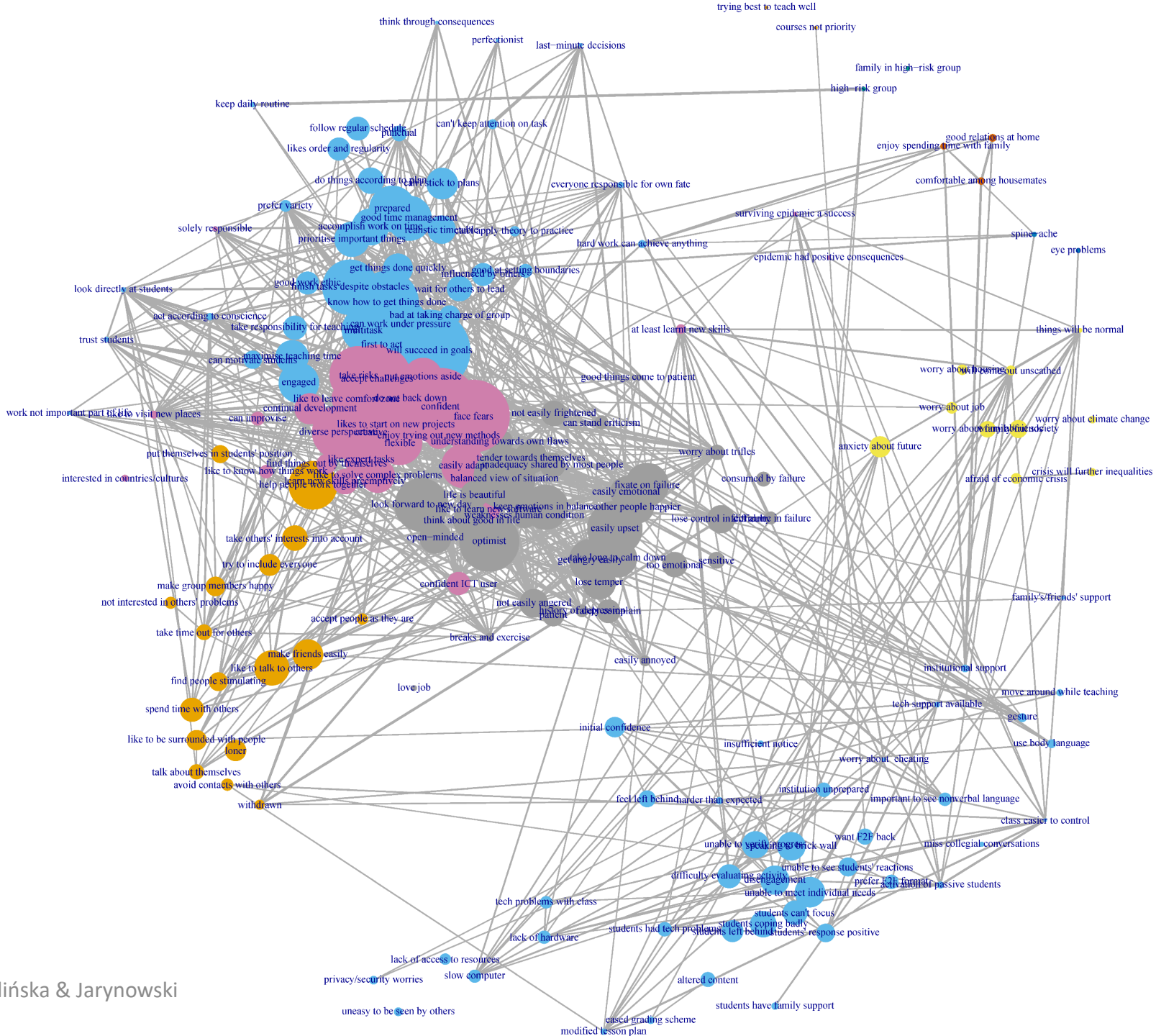
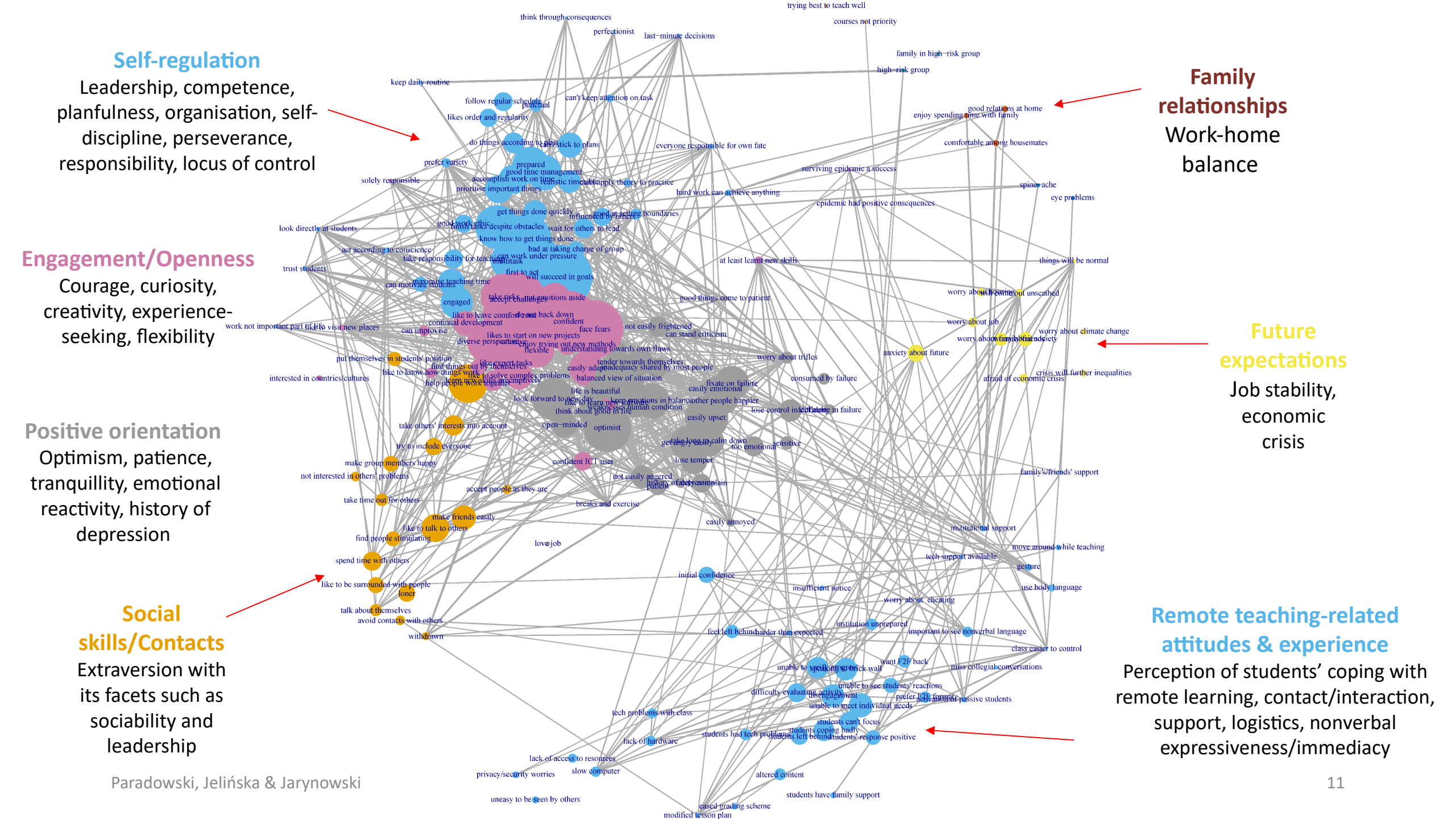

trying best to teach well
courses not priority
think through consequences
perfectionist
last−minute decisions
family in high−risk group
high−risk group
keep daily routine
follow regular schedule
punctual
can't keep attention on task
likes order and regularity
good relations at home
enjoy spending time with family
do things according to plan
can't stick to plans
everyone responsible for own fate
comfortable among housemates
prefer variety
prepared
good time management
surviving epidemic a success
solely responsible
accomplish work on time
realistic timeframe
can apply theory to practice
prioritise important things
hard work can achieve anything
spine ache
eye problems
epidemic had positive consequences
get things done quickly
good at setting boundaries
influenced by others
look directly at students
good work ethic
finish tasks despite obstacles
wait for others to lead
know how to get things done
act according to conscience
bad at taking charge of group
take responsibility for teaching
can work under pressure
multitask
trust students
at least learnt new skills
things will be normal
first to act
will succeed in goals
maximise teaching time
can motivate students
worry about illness
will come out unscathed
engaged
take risks
put emotions aside
accept challenges
good things come to patient
like to leave comfort zone
do not back down
confident
worry about job
work not important part of life
like to visit new places
continual development
face fears
not easily frightened
worry about climate change
can improvise
likes to start on new projects
can stand criticism
worry about family's health
diverse perspectives
enjoy trying out new methods
flexible
understanding towards own flaws
anxiety about future
put themselves in students' position
worry about trifles
like expert tasks
tender towards themselves
find things out by themselves
easily adapt
inadequacy shared by most people
like to know how things work
like to solve complex problems
balanced view of situation
consumed by failure
afraid of economic crisis
crisis will further inequalities
interested in countries/cultures
plans new skills scrupulously
help people work together
fixate on failure
life is beautiful
easily emotional
look forward to new day
like to learn new software
keep emotions in balance
other people happier
weaknesses human condition
lose control in failure
think about good in life
easily upset
take others' interests into account
open−minded
optimist
get take long to calm down
too emotional
sensitive
try to include everyone
confident ICT user
lose temper
make group members happy
not interested in others' problems
not easily angered
family's/friends' support
history of depression
patient
accept people as they are
take time out for others
breaks and exercise
make friends easily
easily annoyed
like to talk to others
institutional support
find people stimulating
love job
move around while teaching
tech support available
spend time with others
gesture
initial confidence
like to be surrounded with people
insufficient notice
use body language
loner
worry about cheating
talk about themselves
avoid contacts with others
institution unprepared
feel left behind
harder than expected
important to see nonverbal language
withdrawn
class easier to control
want F2F back
unable to verify progress
miss collegial conversations
speaking to a brick wall
unable to see students' reactions
difficulty evaluating activity
disengagement
prefer F2F format
both apathy of passive students
unable to meet individual needs
tech problems with class
students can't focus
students coping badly
students had tech problems
students left behind
students' response positive
lack of hardware
lack of access to resources
privacy/security worries
slow computer
altered content
uneasy to be seen by others
students have family support
eased grading scheme
modified lesson plan



Self-regulation

Leadership, competence, planfulness, organisation, self-discipline, perseverance, responsibility, locus of control

Engagement/Openness

Courage, curiosity, creativity, experience-seeking, flexibility

Positive orientation

Optimism, patience, tranquillity, emotional reactivity, history of depression

Social skills/Contacts

Extraversion with its facets such as sociability and leadership

Family relationships

Work-home balance

Future expectations

Job stability, economic crisis

Remote teaching-related attitudes & experience

Perception of students' coping with remote learning, contact/interaction, support, logistics, nonverbal expressiveness/immediacy

Conclusions

- Self-regulation, openness/engagement, positive orientation and extraversion are highly interconnected clusters comprising the most influential variables
- Positive orientation cluster most central in the network
- Remote teaching-related attitudes and experiences connected to a greater extent with future expectations and to a lesser extent with the positive orientation cluster
- Extraversion cluster almost unconnected to remote teaching-related attitudes and experiences and seems to be of lesser importance

Conclusions

- In (the preliminary stages of) data analysis, network visualisations offer an advantage over other hierarchical methods (such as correlation matrices or PCA graphs) wrt readability and interpretability
- They cut *across* psychological constructs, revealing novel potential relationships between items

Questions for the future:

- What else can we do with the questionnaire data (e.g. generate constructs for subsequent SEM, …)?