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Exploring Teachers' Use of Educational Technology to Support Self-Regulated Learning in Secondary Education

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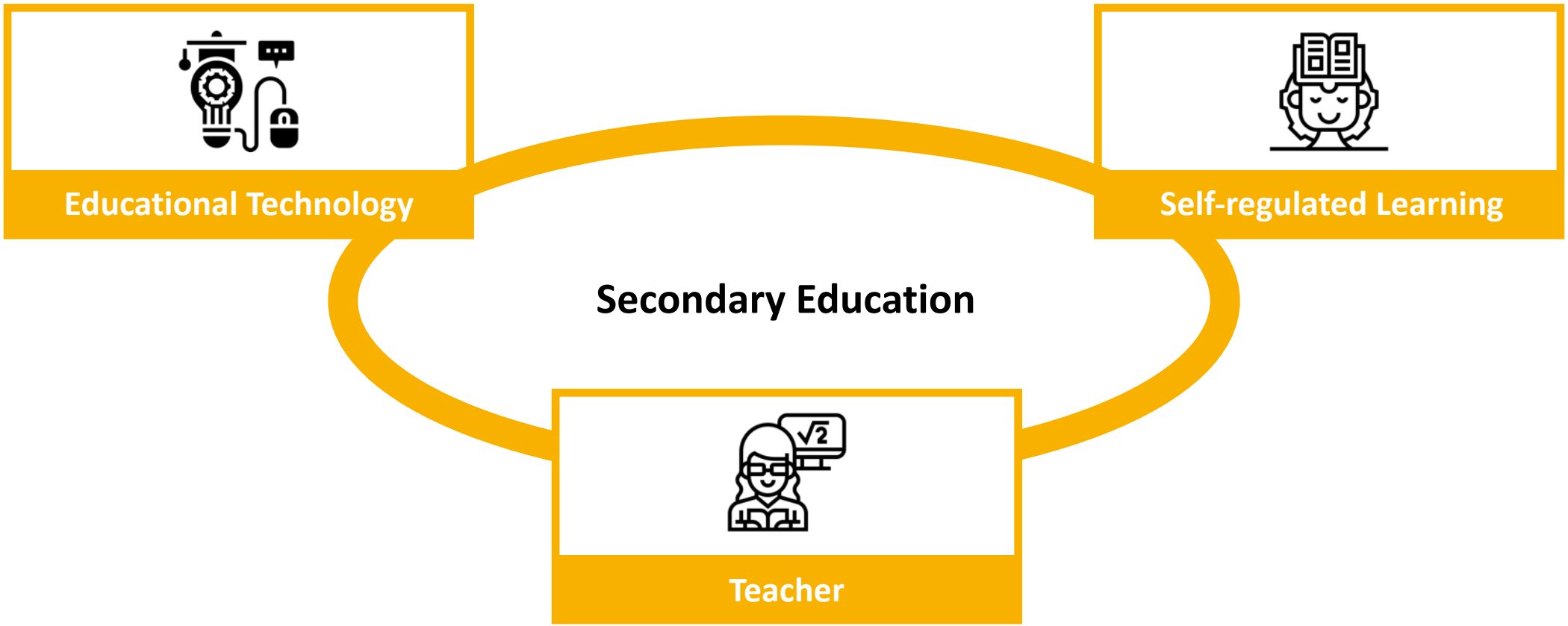

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Teaching Methods & Lesson Design

Attitude & Usage of Ed-Tech (AI-Tools)

?

Teacher Professional Development

Contextual Factors

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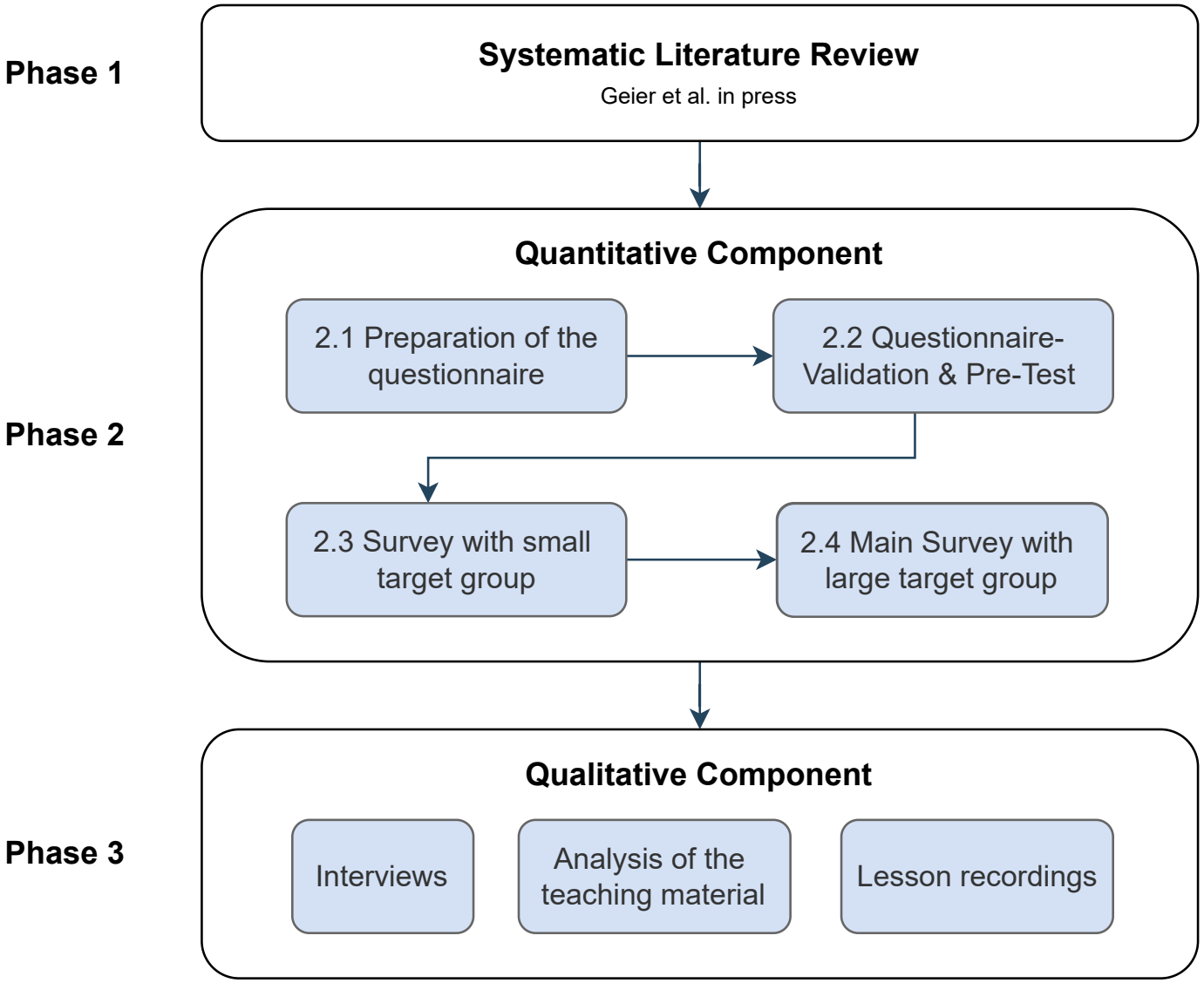

Phase 1
Systematic Literature Review
Geier et al. in press
Phase 2
Quantitative Component
2.1 Preparation of the questionnaire
2.2 Questionnaire-Validation & Pre-Test
2.3 Survey with small target group
2.4 Main Survey with large target group
Phase 3
Qualitative Component
Interviews
Analysis of the teaching material
Lesson recordings

2.4 Main Survey with large target group

2.4 Main Survey

- Based on a Systematic Literature Review (Geier et al. in press)
- Identification of teachers who meet the requirements profile
  - Participants of phase 3

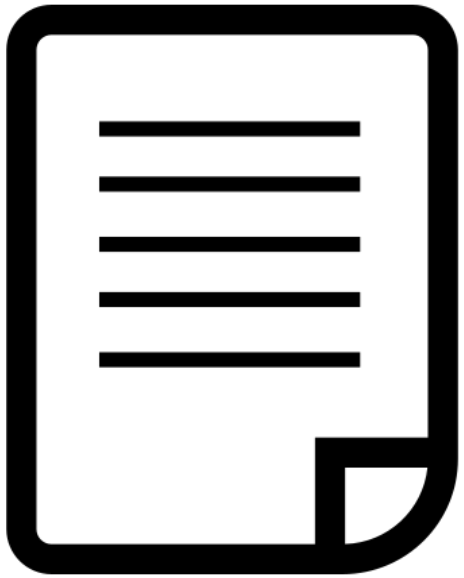
2.4 Main Survey

- Running between March 17 and May 3

- Survey numbers
  - 120 schools directly contacted (mainly by phone)
  - 639 participants
  - **387 fully completed questionnaires** (incl. 28 from phase 2.3)
  - Over 50% with confirmation to further investigations

2.4 Main Survey - Sections

- Teacher's SRL competences
- Self-regulated teaching/learning
- Attitude to and usage of Educational Technologies
- Teacher Professional Development



Teacher's SRL Competences

- Predictor for fostering SRL within students
- Standardized questionnaire from Li Sanchez & Schwinger (2023)
  - 27 items
- Additional item: Acquisition of new knowledge on topics relevant to one's own teaching in a **self-determined manner**

Self-regulated Teaching/Learning

- Planning and time management
  - *During the learning process, I make sure that students set their own learning goals.*
- Motivation
  - *In the learning process, it is important to me that students have a sense of achievement.*
- Emotion
  - *During the learning process, I support students in dealing with setbacks and failures.*

Self-regulated Teaching/Learning

- Metacognition
  - *In the learning process, I encourage students to reflect on the learning process.*
- Learning strategies
  - During the learning process, I support students in the use of learning strategies.

Educational Technologies

- Attitude to and usage of Educational Technologies
  - *I consciously use digital learning content for independent learning.*

- Usage of generative AI tools

Teacher Professional Development

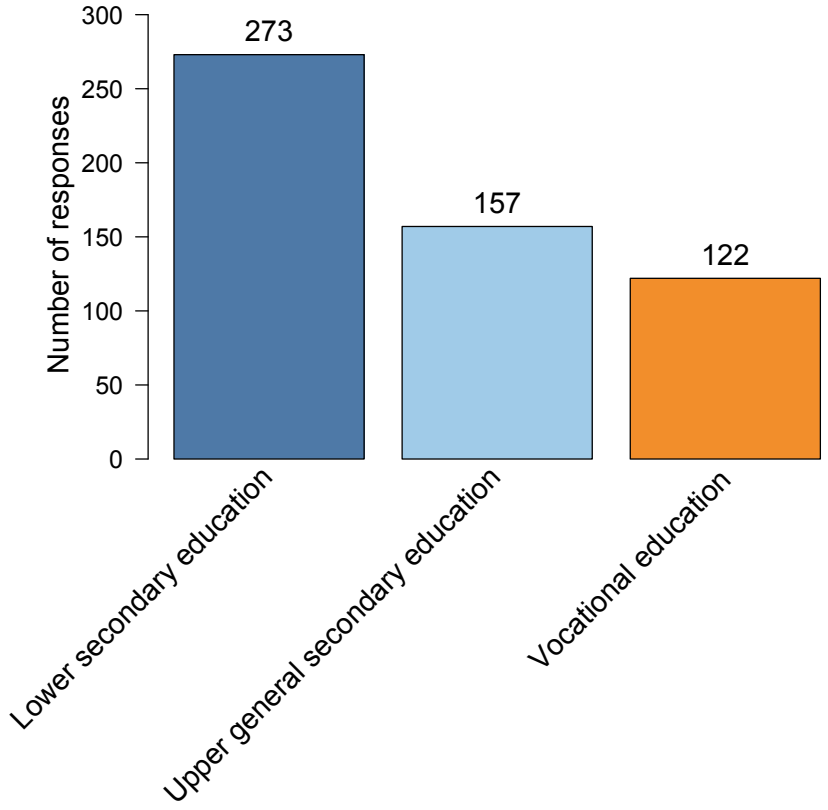
- Engagement in TPD
  - *I attend training courses on the use of educational technologies in the classroom.*

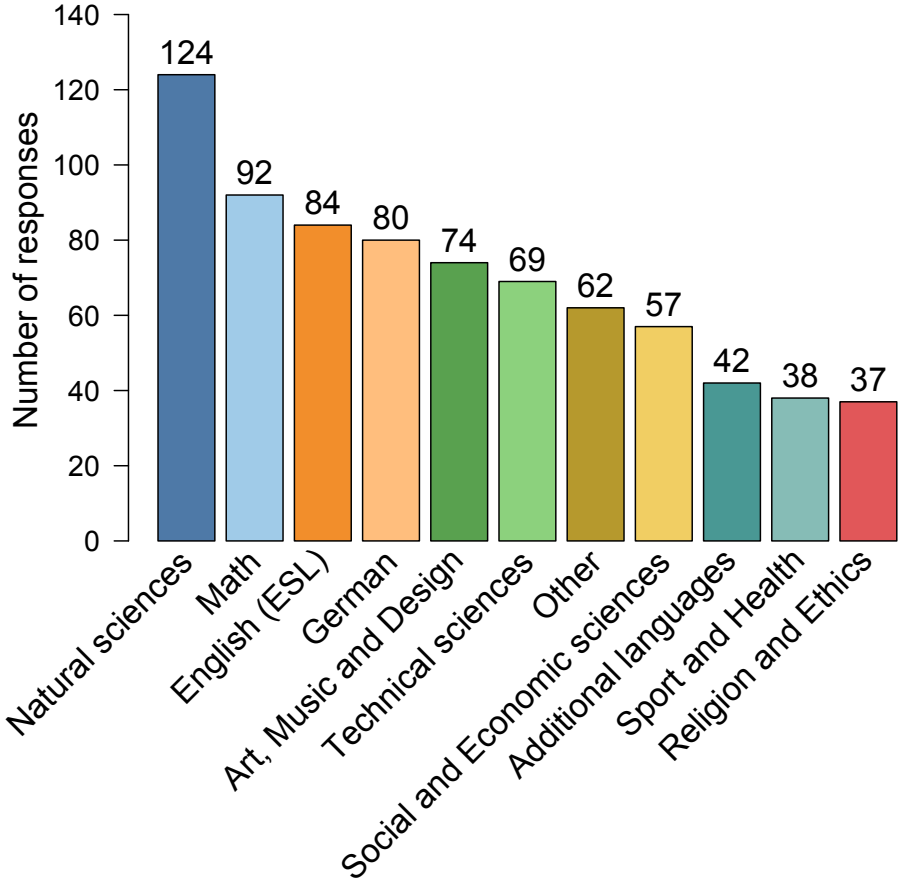
- Corresponding item: Acquisition of new knowledge on topics relevant to one's own teaching **through external input**

Demographic Data

- Years in service
- Type of school(s) teaching at
- Teaching subject(s)
- No gender

2.4 Main Survey - Initial Insights

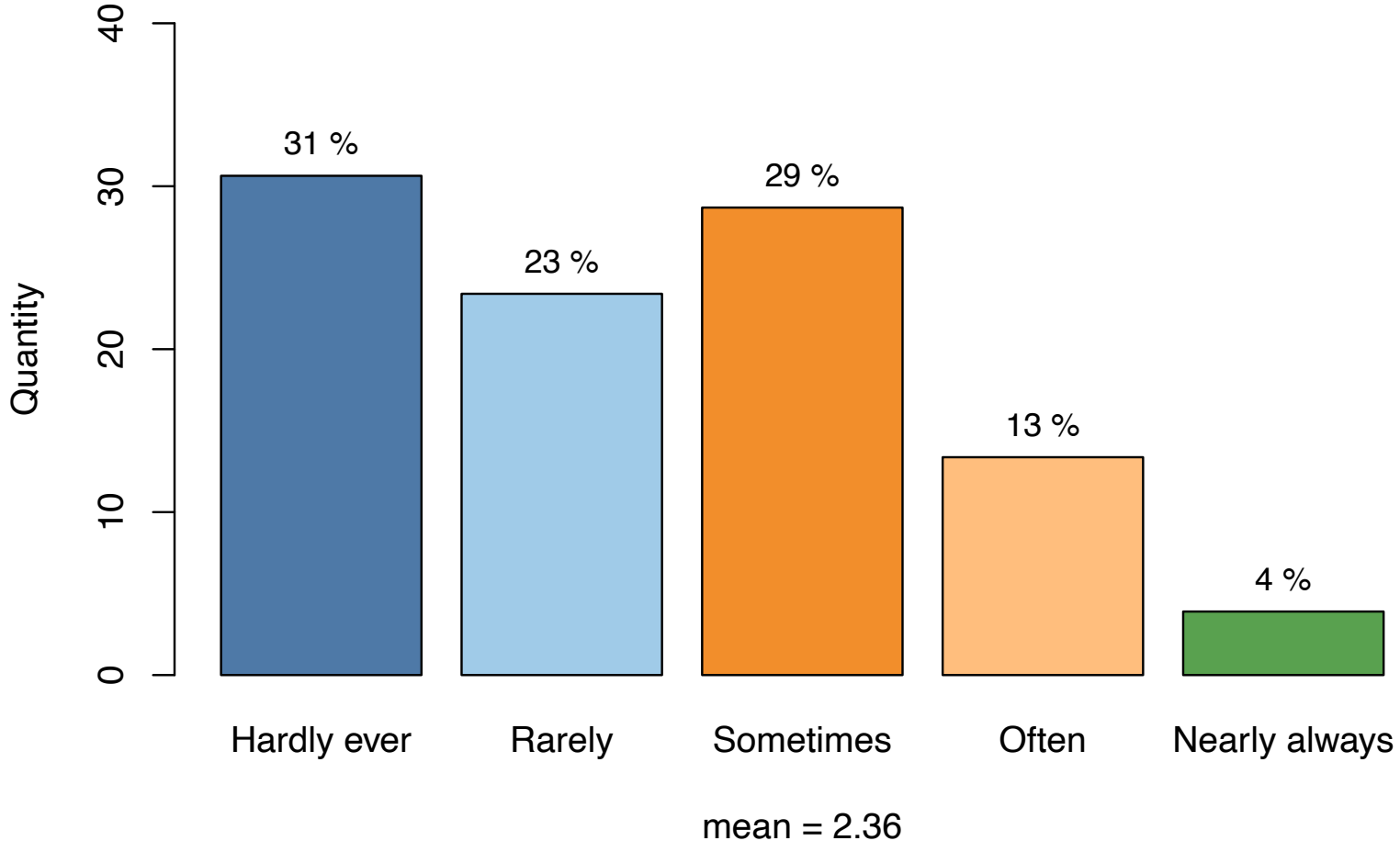




2.4 Main Survey - Initial Insights

- Cronbachs Alpha values indicate good internal consistency
  - $\alpha > 0.85$
- Correlation between teachers' SRL competences and self-regulated teaching/ learning

Use of GenAI for personalized learning

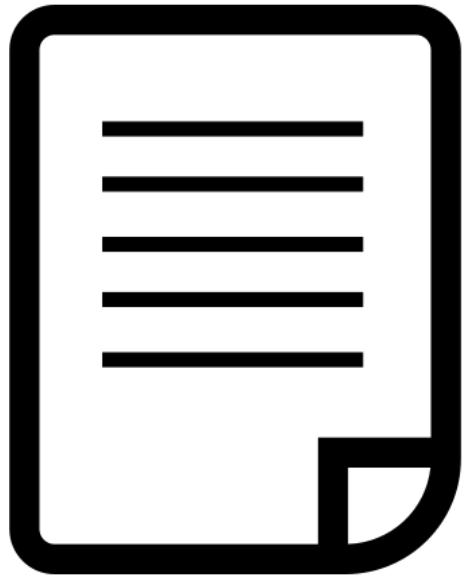


Outlook - Phase 3

- Analysis of teaching material + classroom observation + interview
- Concept Theoretical saturation
- Different subjects & school types

Interview Guide

- teaching methods, learning environment and material
- selection and use of educational technologies
  - AI-Tools
- approach to professional development
- context factors and conditions



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Acknowledgements

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Questions?

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