

# The state of research on effects of gamification in the context of learning

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*A wee warm up...*



# The challenge

**VI = IX**

# The usual solution

VI  $\neq$  IX

Think in a bit more creative way - 1

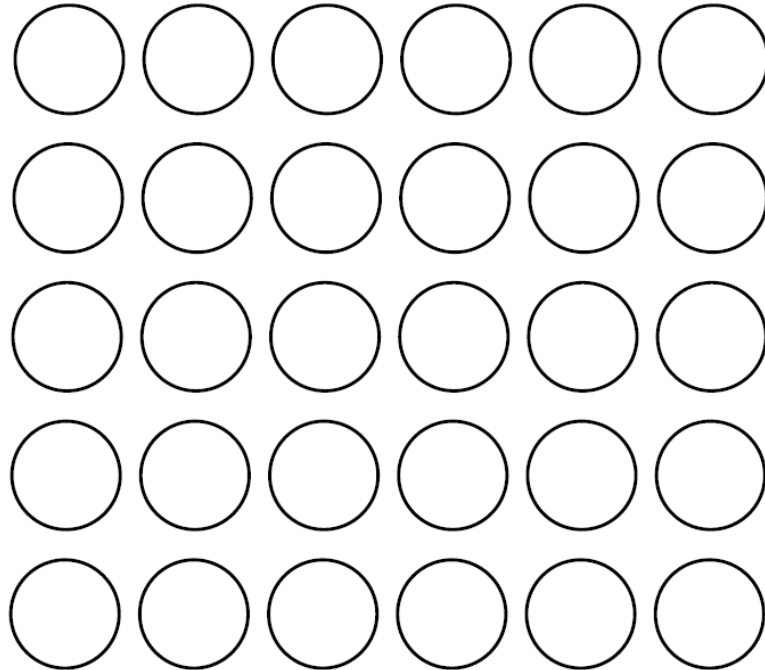
VI = SIX

Think in a bit more creative way - 2

VI = IX6

# And one more game...

## 30 Circles Challenge





# *Methodology in nutshell*



# Comparative secondary research

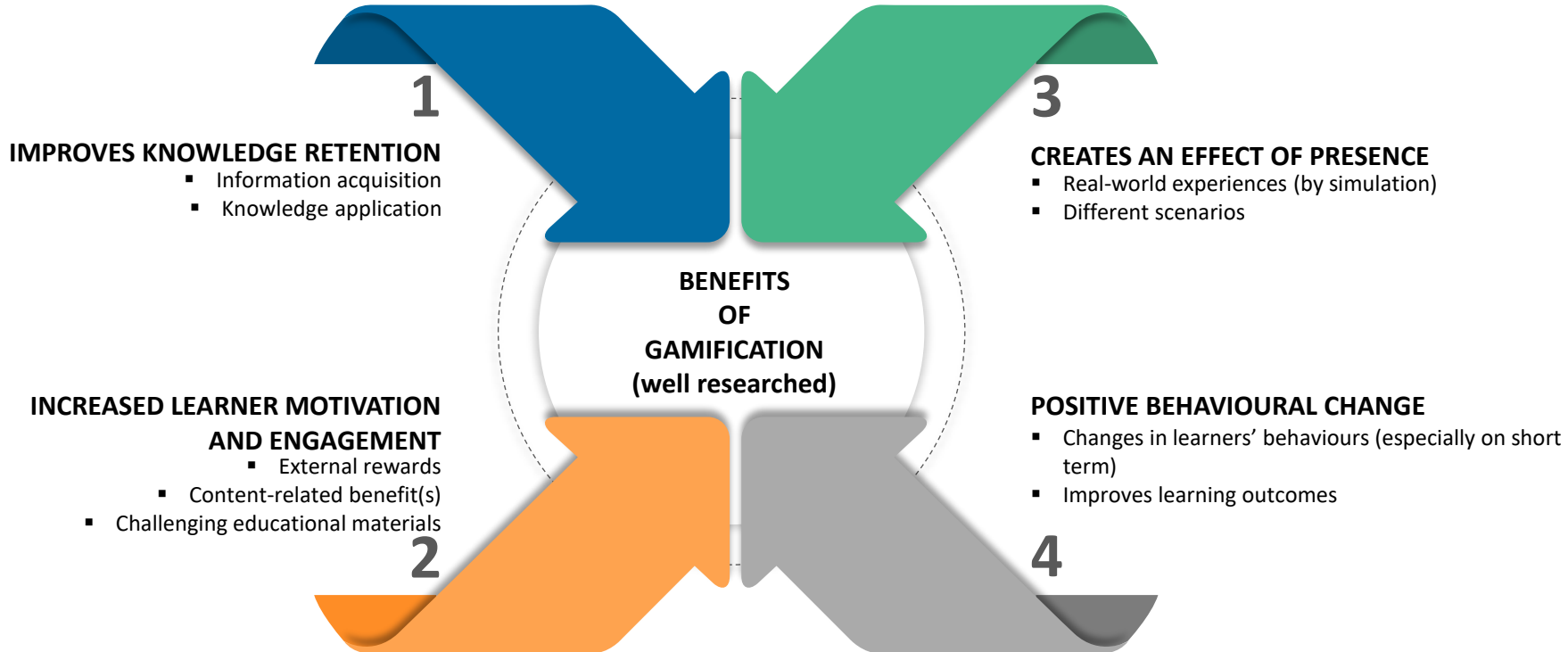
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- Research questions:
  - what are the learning outcomes of using game elements;
  - what are the challenges of gamification;
  - and, what are the future research directions in this field?
- Google Scholar database
  - Empirical studies
  - Only published in years 2021-2022
  - Research only connected with higher education
  - Studies only with insight of the application of gamification (and not only describing them)
- 728 to 13 papers

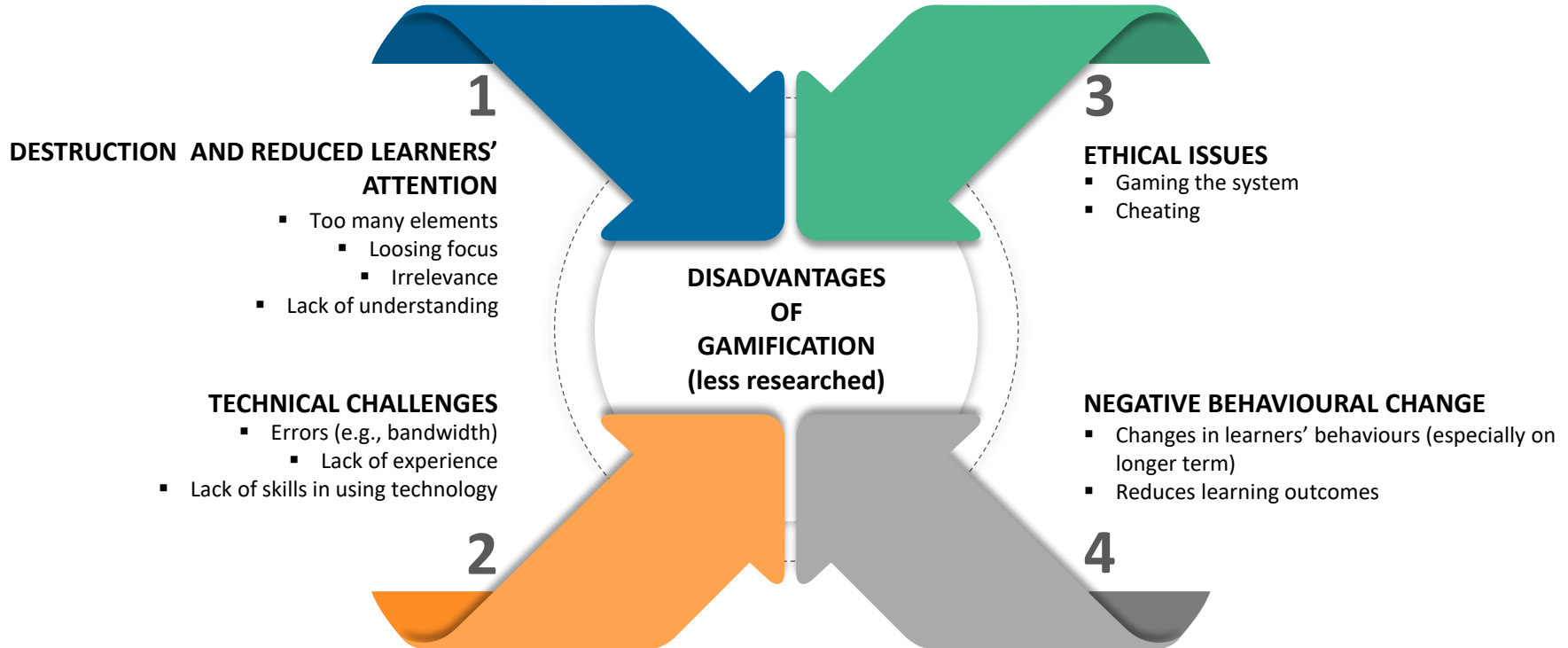
# *Results and Discussion*



# Four key benefits of gamification



# Four key negative effects of gamification



# *Further research directions*



# Research directions

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- Systematic comparison of gamified and non-gamified learning environments
- Best design solutions in game-based learning
- Potential of automation – personalised design
- Conducting longitudinal study (change or perpetuation of results over time)
- Development of evaluation tools
- Gamification for social-emotional development (not only in professional)
- Holistic research of games (content, design, colours, screen components)
- Aspects of personalisation (gender, age, demography, type of activity etc.)
- How to increase professional competences?
- Cultural differences and cultural impacts (input vs. output)
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# Reserach directions

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- Validate instructional advantages of gamification (is any) (e.g., examinations)
- The impact of gamification on learners' behaviour
- Objective measures for validate the effects
- Educational strategies and gamification
- Separate valuation of game mechanics and elements (all studies used gamification elements in combination)
- Measurement of students' satisfaction
- VR, AI...

*Thank you for your attention.*

