

Onwards to Human-Centric Technological Frontiers: Assessing Construction Project Managers' Readiness for Industry 5.0

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About Me





Research Gap

Outline

Introduction

This section provides the background for defining the role of a construction project manager, explores the challenges faced in the field, and examines how Industry 5.0 might influence the industry. It also looks at the emerging signs of Industry 5.0 adoption within construction.

Construction Project Managers



WHAT DO THEY DO?



WHAT ARE THEIR
PRACTICE CHALLENGES?





Industry 5.0

Enabling Technology Frameworks

Enabling Technology	Proposed Application	Source(s)
Digital Twin	Reconstruction of physical assets and systems for the optimization of construction management procedures	Jiang et al. (2022), Jiang et al. (2023)
Artificial Intelligence	Scheduling, tender compilation, determination of project scope and cost, evaluation of employee performance and risk assessment	Chou et al. (2014), Kalaivani and Elamparithi (2014), Abioye et al. (2021)
Blockchain	Smart contracts	Sonmez (2021), Wang et al. (2020)
Internet of Things	High speed reporting, reduced communication costs, curtailing of Human errors in reporting	Ghosh et al. (2021)
Cobots	Execution of dangerous tasks	Schöberl et al. (2023)



Systematic Literature Review

The review aimed to explore the current Industry 5.0 landscape and determine its impact on construction project managers' skills. Anticipated contributions included insights into challenges, potential solutions, and the evolving skills landscape in the construction industry.





Review Questions



Question 1

Question 2

Question 3

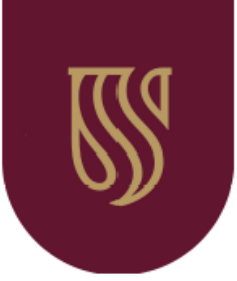


Question 1

How can we know we are in Industry 5.0 within the construction industry?

Question 2

Question 3



Question 1

How can we know we are in Industry 5.0 within the construction industry?

Question 2

What skillset do construction project managers need for Industry 5.0?

Question 3



Question 1

How can we know we are in Industry 5.0?

Question 2

What skillset do construction project managers need for Industry 5.0?

Question 3

What is the state of research regarding construction project management education for Industry 5.0?



This systematic literature review employed a rigorous and iterative methodology. The SPIDER framework was utilized for initial screening, an adapted author matrix facilitated data collection, and a data extraction form ensured meticulous data collection, thus ensuring transparency and reliability. The quality of the literature was assessed using the Critical Appraisal Skills Program (CASP) Qualitative checklists.

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Systematic Literature Review Methodology

Qualitative Evidence Synthesis

Thematic synthesis method

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graph TD; A[Thematic synthesis method] --> B[SPIDER framework to determine inclusion and exclusion criteria]; B --> C[Selected databases include Google scholar, ProQuest, Web of Science, SCOPUS, IEEE Xplore and Academic Search Premier];
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SPIDER framework to determine inclusion and exclusion criteria

Selected databases include Google scholar, ProQuest, Web of Science, SCOPUS, IEEE Xplore and Academic Search Premier

Data Extraction and Synthesis

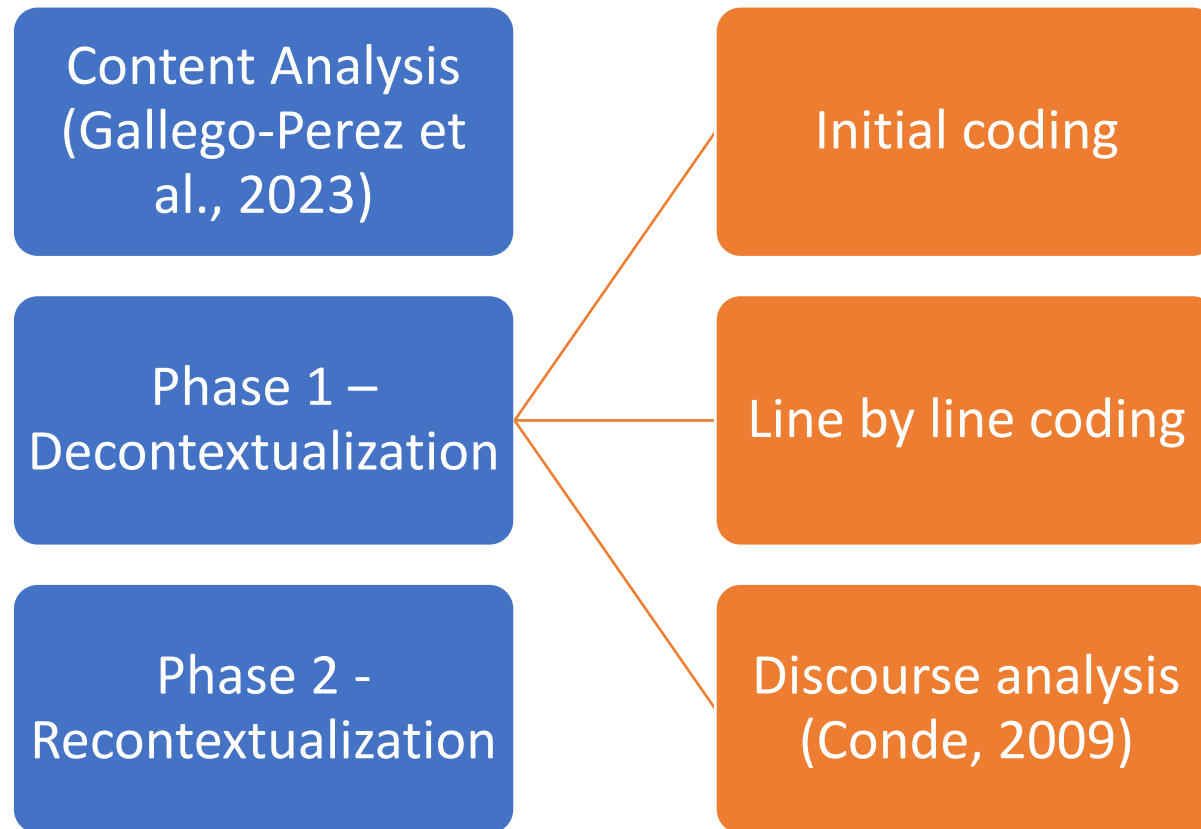


TWO STAGED EXTRACTION PROCESS
(FLEMMING AND NOYES, 2021)



CRITICAL APPRAISAL SKILLS PROGRAM
FOR QUALITY ASSESSMENT, (MAJID AND
VANSTONE, 2018)

Analysis





Systematic Literature Review Findings

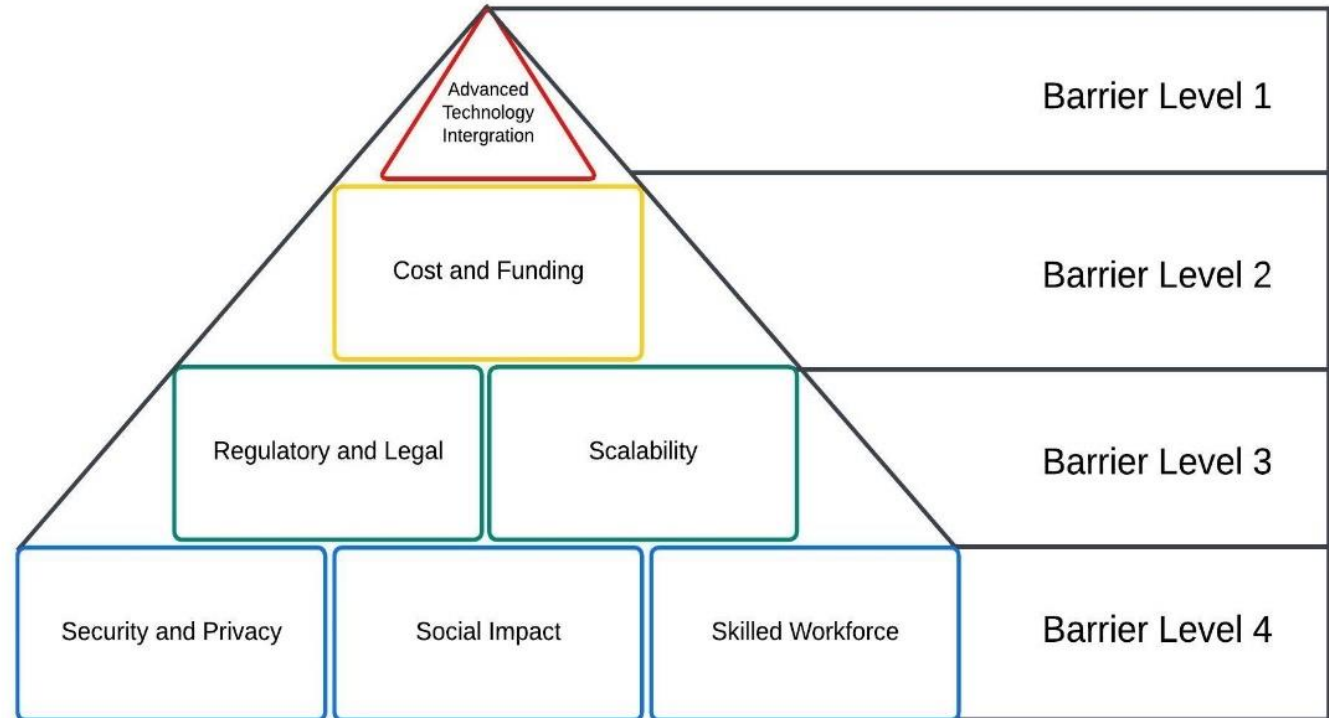
The literature review revealed a scarcity of research on Construction Project Managers' skills in Industry 5.0, attributed to the historically limited focus on research and development in the construction sector. Despite industry growth, research investment remained low (Musarat et al., 2023).



Emergent Concepts



- Barriers to Industry 5.0






Based on the findings of the systematic literature review, the following insights are proffered.

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Research Discussion



Review Question 1

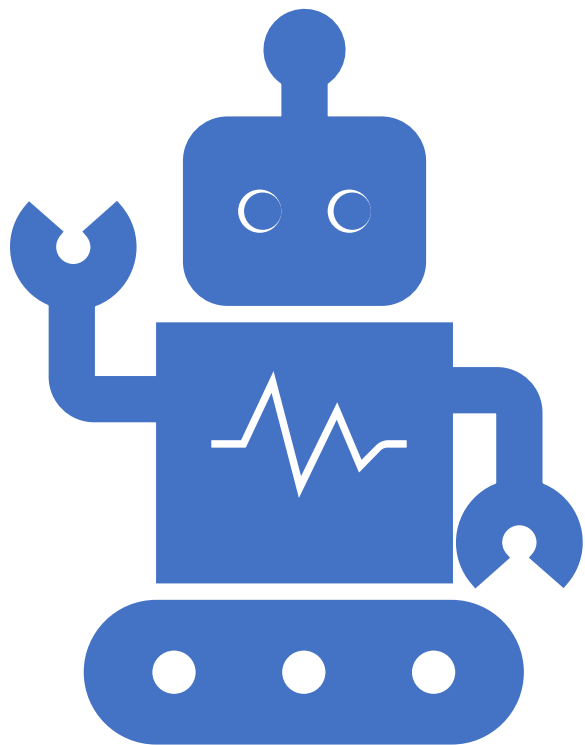
*How can we know we are in Industry 5.0 in
the construction industry?*



Contemporary

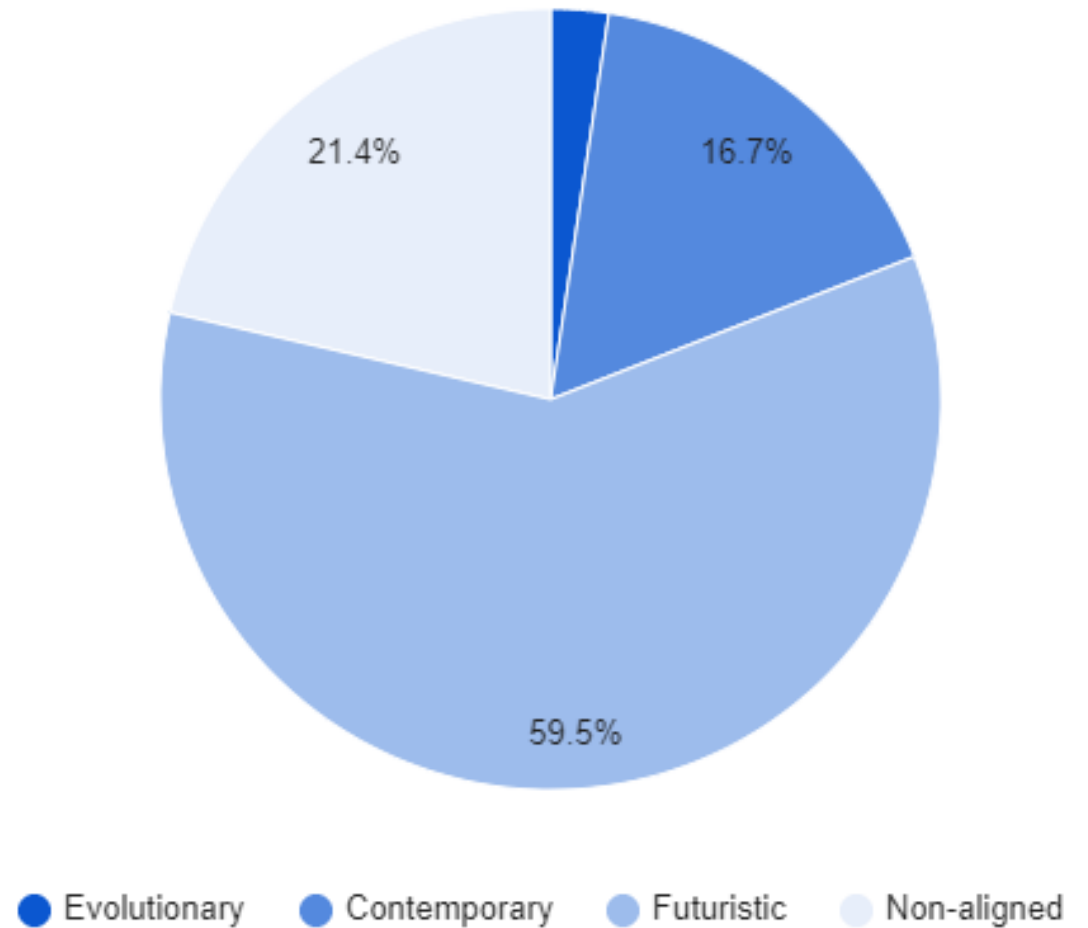


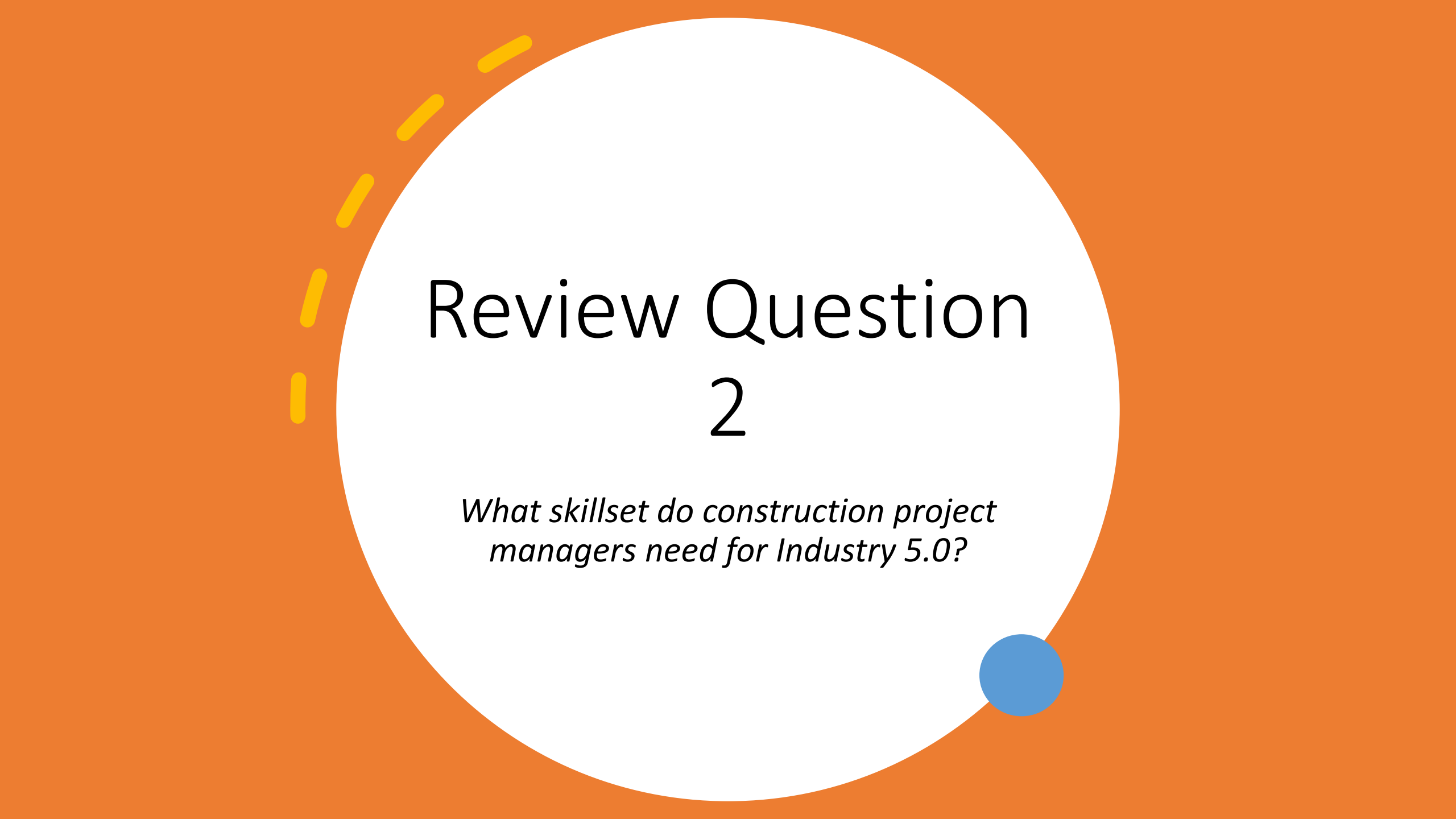
Evolutionary



Futuristic

Schools of thought distribution





Review Question 2

What skillset do construction project managers need for Industry 5.0?

Review Question 3

*What is the state of research regarding
construction project management
education for Industry 5.0?*

Conclusion and Recommendations

