

Exploring the Impact of Agile Coaches on Knowledge Management and Organisational Learning: A Systematic Review

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Abstract

This study will systematically review the literature on agile coaches, knowledge management, and organizational learning. While the number of agile coaches in organisations is on the rise, little is known about how these coaches affect knowledge management and organisational learning. Given the critical interdependence between knowledge management and organizational learning, this review examines the influence of agile coaches on these areas. Additionally, it will investigate the specific impact of agile coaches in facilitating the adoption of agile methodologies within software development organizations, with a particular focus on organizational learning. The review employs a systematic literature review methodology guided by the PRISMA framework, ensuring a comprehensive and unbiased synthesis of existing research on this emerging field.

Keywords:

Agile coach, knowledge management, organizational learning, agile methodology, agile software development.

Word count: 2078

1.0 Introduction

Agility is now an essential quality of an excellent organisation because it includes the ability to adapt quickly to changes in the external environment, which is becoming more unpredictable and dynamic (Margherita, Sharifi and Caforio, 2021; Franco, Guimarães and Rodrigues, 2023). This adaptability enables faster response to evolving customer needs that tend to change over time. Thus, this issue cannot be resolved using the traditional method. Nonetheless, maintaining the efficacy of teams or transitioning to agile is challenging (Stray, Memon, and Paruch, 2020) because it involves an entire way of thinking, rather than simply methods or practices.

In this context, an agile coach is a new role that is gaining popularity (O'Connor and Duchonova, 2014) that assists organisations in smoothly adopting the agile method. It is defined as an individual who coaches and facilitates agile teams and managers in adopting and implementing agile practices and processes and value in software development (Parizi, Gandomani and Nafchi, 2014) which is responsible for mitigating problems during agile adoption and making the transition easier and more efficient (Parizi, Gandomani, and Nacchi, 2014; Ziegler, Peisl and Ates, 2023). However, little is known about this role despite its growing as an emerging role in the field and the increasing number of organisations that consider agile coaches as dedicated full-time employment (Pavlič and Heričko, 2018).

In order to better understand the role of the agile coach in organisational learning specifically, it would be valuable to do a systematic literature review to get an in-depth insight of the agile coach in this context.

2.0 Background of agile coach role

Agile coaching is a specialized area of expertise that falls under the larger umbrella of coaching. It is defined as an individual who coaches and facilitates agile teams and managers in adopting and implementing agile practices and processes and value in software development (Parizi, Gandomani and Nafchi, 2014). which is responsible for mitigating problems during agile adoption and making the transition easier and more efficient (Parizi, Gandomani, and Nacchi, 2014). Nowadays, many organisations consider agile coaches as dedicated full-time employment (Pavlič and Heričko, 2018). It is possible to summarise the role of an agile coach as follows, as it has been described by numerous authors in this regard: facilitator, problem solver, coach, teacher, mentor, leader, process anchor, and change management agent (Daljajev et al., 2020; Stray, Memon, and Paruch, 2020). In light of this roles agile coach brings numerous benefits to an organization, the benefits exceed the financial cost of employing an agile coach (O'Connor and Duchonova, 2014). Moreover, in organisations, agile coaching is mostly used for two scenarios (O'Connor and Duchonova, 2014). First, it helps teams and individuals improve their work processes, which improves the practises of companies that already use agile methods (Stray, Memon, and Paruch, 2020). Second, it assists in the adoption of agile methodologies within organisations during times of transformation (Paasivaara et al., 2014). Therefore, the central role of agile coaches in organisations lays a foundation for a comprehensive examination of their significance in the context of organisational learning and development.

However, the agile coach role influence extends beyond the team to the organisation as a whole, necessitating the devotion and investment of numerous factors, one of which is "knowledge" (Stray, Tkalic and Moe, 2020). In accordance with this context, agile projects are likely to failure, and one of the primary contributing factors is the inability

to retain knowledge (Elbanna and Sarker, 2015). Therefore, it is crucial to conduct a review of its function in relation to organisational learning, as knowledge management and organisational learning are inextricably linked; without one, the other wouldn't happen (Fai Pun and Nathai-Balkissoon, 2011).

The previous systematic review concentrated on the roles, responsibilities, and skills of agile coaches in general (Stray, Memon, and Paruch, 2020). This suggests that another systematic review should be investigated in order to examine its function in relation to organisational learning and knowledge management. Additionally, as the agile role is emerging relatively, it is appropriate to conduct a systematic review, as the systematic literature review is a suitable method for synthesising an emerging research field (Cronin, Ryan and Coughlan, 2008).

As organisational learning will be the lens of this systematic literature review, the first question will aim to collect general agile coach practices and influence in knowledge management and organisational learning, and the second question will analyse agile coach influence and role in organisational learning theory. The theory of organisational learning by Argyris and Schön (1978) explains how organisations continuously create, share and acquire knowledge through distinct processes: single-loop learning, which detects and corrects errors without challenging underlying norms, asking about are we doing things correctly? (Argyris and Schön, 1978; Romme and Witteloostuijn, 1999). Double-loop learning, which investigates and alters governing variables and actions, asking about: are we doing the right things? (Argyris and Schön, 1978; Romme and Witteloostuijn, 1999). Additionally, a number of authors have proposed an additional form of organisational learning, which is commonly referred to as "triple-loop" learning (Tosey, Visser, and Saunders, 2012). Triple-loop is a term that denotes the process of "learning how to learn" (Flood and Romm, 2018; Romme and Witteloostuijn, 1999). Therefore, the researcher has prepared the following review questions:

RQ1:

What practices do agile coaches use to influence knowledge management and organisational learning?

RQ2:

How do agile coaches, through their impact on organisational learning and knowledge management, contribute to single-loop, double-loop, and triple-loop learning?

3.0 Methodology

3.1 The research design

In order to overcome the limitations of traditional reviews, a systematic literature review will be implemented. The review will utilise the PRISMA protocol to conduct a systematic review of the literature. In order to ensure a comprehensive and transparent review process, the PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) procedure was implemented (Page et al., 2021). This protocol offers a comprehensive and organised approach to literature synthesis, guiding the selection, screening, and inclusion of pertinent research (Page et al., 2021). Figure 1 illustrates the current status of this systematic literature review on the PRISMA diagram, which is distinct in colour (yellow).

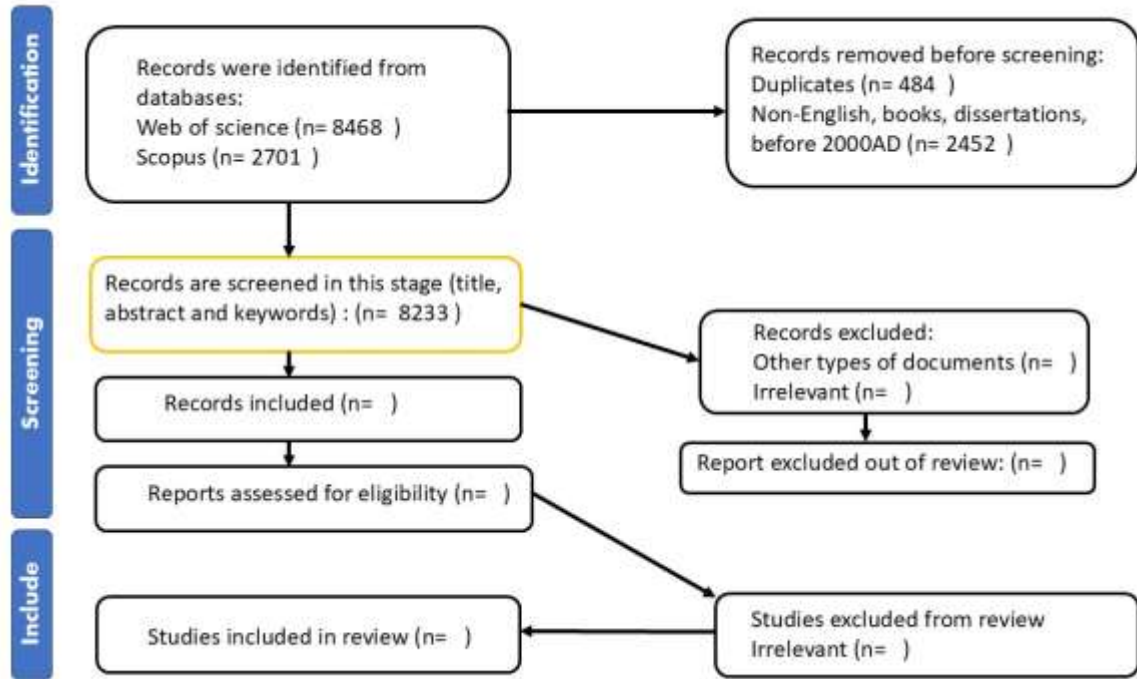


Figure 1: PRISMA diagram showing the current phase in colour.

3.2 identification phase

Initially, the researcher conducted a review to identify the most frequently used terminologies in the discipline. The agile coaches' terminologies, which was inspired by (Stray, Memon, and Paruch, 2020). The knowledge and learning that we applied in general to capture all relevant publications have been incorporated. Additionally, a relevant terminology has been added until the researcher assumed that the relevant keywords had been identified. The final Boolean strings is in the next table.

Boolean strings	("Agile" OR "Scrum" OR "Lean" OR "XP" OR "Kanban" OR "DevOps" AND "coach*") AND ("knowledge") AND ("learn*" OR "memory" OR "information" OR "adapt*" OR "resilien*" OR "experience" OR "cognition" OR "insight" OR "chang*" OR "adjust*") AND ("agile" OR "kanban" OR "scrum" OR "lean" OR "xp" OR "devops" AND "project" OR "software" OR "approach" OR "information" AND "system" OR "information" AND "technology" OR "method*" OR "methodology" OR "approach" OR "model")
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Table 1: Boolean strings used in the search.

4.0 Searching and Screening Phase

4.1 Databases search

In this study, Scopus and Web of Science are selected as the primary databases due to their relevance to the research focus and support from prior systematic reviews. The inclusion of Web of Science alongside Scopus in this study is informed by recent developments and insights from prior reviews. Stray, Memon, and Paruch (2020) in a systematic literature review on agile coach roles and responsibilities, searched both Scopus and Web of Science, but ultimately selected Scopus only, noting that Web of Science returned few additional articles and did not yield new results beyond those already found in Scopus. However, that review was conducted in 2020, nearly five years ago. In the present study, although the Boolean string and focus differ slightly, Web of Science is included because it now yields a substantial number of relevant articles (6,574). Moreover, its relevance is further supported by prior systematic literature reviews related to knowledge management and agile projects, such as (Yanzer Cabral, Ribeiro and Noll, 2014; Bjørnson and Dingsøyr, 2008; Idrees *et al.*, 2023), all of which included Web of Science in their database selection strategies.

Building on prior reviews (particularly the systematic literature review on agile coach role) by Stray, Memon, and Paruch (2020), this study integrates both Scopus and Web of Science, two databases frequently used in systematic reviews (Güzel, Vizueteluciano and Merigó-Lindahl, 2025). Scopus is widely regarded as the most comprehensive citation and abstract database, while Web of Science indexes high-impact journals, especially in the fields of management and organisational studies (Aghaei Chadegani *et al.*, 2013). Moreover, they hold the most extensive collections of peer-reviewed research in the social sciences (Li *et al.*, 2017). Therefore, both databases are included to ensure comprehensive and high-quality literature coverage in this review.

The final search query was executed in January 2025 in the following manner:

- Scopus

The researcher used Boolean search strategies to find appropriate publications from 2000 to 2025. The search procedure made use of the search query to guarantee thorough coverage of every article during this time frame.

The initial search result in a total of 2,701 results in all fields search. However, after excluding non-English records and entries classified as "book type" from the database, the final number of relevant results was reduced to 2,143.

- Web of science

The number of results were found in the first search using the same Boolean search strings is 8,468. However the total number of relevant findings was reduced to 6,574 following the exclusion of theses and dissertations, records written in languages other than English, and publications that were published before to the year 2000 AD.

4.2 Inclusion and exclusion criteria

The researcher exported the metadata of each of the results, including the title, year, abstract, and document type, into an Excel file. The criteria that will be used for inclusion and exclusion are shown in the following table:

Inclusion Criteria
• Studies specifically related to agile coaches and agile coaching.
• Research focused on knowledge management within the context of agile software development with mentioning to the agile coach role.
• Publications written in English.
• journal articles, book chapters, and conference papers.
Exclusion Criteria
• Studies that do not mention the role of the agile coach.
• Non-English publications.
• Books, mapping studies, and systematic reviews.
• Studies published before the year 2000.

Table 2: Inclusion and exclusion criteria.

4.3 Filtering (the current task in progress)

The researcher will proceed with the filtering and selection phase of the systematic literature review to ensure that only the most relevant studies are included. This phase will follow a structured approach, beginning with an initial screening of titles, keywords, and abstracts. A full-text review will then be conducted to exclude studies that do not align with the research focus, (particularly those that do not mention the role of the agile coach specifically). The ongoing selection process will be essential in shaping the study's scope, ensuring a focused and well-supported analysis of agile coaches, knowledge management, and organizational learning. The final set of publications will serve as the foundation for examining how agile coaches contribute to knowledge retention and organizational learning within agile software development, helping to establish a clearer understanding of their impact in this context.

5.0 Next step

5.1 Analysing the results

In this stage, the study will employ thematic analysis, a widely used method for identifying and summarising patterns in qualitative data (Braun and Clarke, 2024). The analysis will follow Braun and Clarke's (2006) six-phase framework: (1) familiarisation with the data, (2) generating initial codes, (3) searching for themes, (4) reviewing themes, (5) defining and naming themes, and (6) producing the final report.

The first research question will be addressed inductively, allowing themes to emerge naturally from the literature due to the general and exploratory nature of agile coaches' practices and influence. Building on these findings, the second research question will be analysed through a theory-informed lens, drawing on organisational learning theory (specifically the concepts of single-loop, double-loop, and triple-loop learning). This is followed by the presentation of the data analysis and synthesis results.

References

- Aghaei Chadegani, A. et al. (2013) 'A comparison between two main academic literature collections: Web of Science and Scopus databases', *Asian Social Science*, 9(5), pp. 18–26.
- Argyris, C. and Schön, D.A. (1978) *Organizational learning: a theory of action perspective*. Reading, MA: Addison-Wesley.
- Bjørnson, F.O. and Dingsøyr, T. (2008) 'Knowledge management in software engineering: A systematic review of studied concepts, findings and research methods used', *Information and Software Technology*, 50(11), pp. 1055–1068. Elsevier.
- Braun, V. and Clarke, V. (2006) 'Using thematic analysis in psychology', *Qualitative Research in Psychology*, 3(2), pp. 77–101.
- Braun, V. and Clarke, V. (2024) 'Thematic analysis', in *Encyclopedia of Quality of Life and Well-Being Research*. Cham: Springer International Publishing, pp. 7187–7193.
- Cronin, P., Ryan, F. and Coughlan, M. (2008) 'Undertaking a literature review: a step-by-step approach', *British Journal of Nursing*, 17(1), pp. 38–43.
- Daljajev, K., Scott, E., Milani, F. and Pfahl, D. (2020) 'A study of the Agile coach's role', in *Product-Focused Software Process Improvement: 21st International Conference, PROFES 2020, Turin, Italy, November 25–27, 2020, Proceedings 21*. Springer International Publishing, pp. 37–52.
- Elbanna, A. and Sarker, S. (2015) 'The risks of agile software development: learning from adopters', *IEEE Software*, 33(5), pp. 72–79.
- Fai Pun, K. and Nathai-Balkissoon, M. (2011) 'Integrating knowledge management into organisational learning: A review of concepts and models', *The Learning Organization*, 18(3), pp. 203–223.
- Flood, R.L. and Romm, N.R. (2018) 'A systemic approach to processes of power in learning organizations: Part I – literature, theory, and methodology of triple loop learning', *The Learning Organization*, 25(4), pp. 260–272.
- Franco, M., Guimaraes, J. and Rodrigues, M. (2023) 'Organisational agility: systematic literature review and future research agenda', *Knowledge Management Research & Practice*, 21(6), pp. 1021–1038.
- Güzel, O., Vizuete-Luciano, E. and Merigó-Lindahl, J.M. (2025) 'A systematic literature review of the Pay-What-You-Want pricing under PRISMA protocol', *European Research on Management and Business Economics*, 31(1), p. 100266.
- Idrees, H., Xu, J., Haider, S.A. and Tehseen, S. (2023) 'A systematic review of knowledge management and new product development projects: Trends, issues, and challenges', *Journal of Innovation & Knowledge*, 8(2), p. 100350. Elsevier.
- Margherita, A., Sharifi, H. and Caforio, A. (2021) 'A conceptual framework of strategy, action and performance dimensions of organisational agility development', *Technology Analysis & Strategic Management*, 33(7), pp. 829–842.

Li, X., Wu, P., Shen, G.Q., Wang, X. and Teng, Y. (2017) 'Mapping the knowledge domains of Building Information Modeling (BIM): A bibliometric approach', *Automation in Construction*, 84, pp. 195–206.

O'Connor, R.V. and Duchonova, N. (2014) 'Assessing the value of an Agile coach in Agile method adoption', in Barafort, B., O'Connor, R.V., Poth, A. and Messnarz, R. (eds) *Systems, Software and Services Process Improvement: EuroSPI 2014*. Communications in Computer and Information Science, vol. 425. Berlin, Heidelberg: Springer. Available at: https://doi.org/10.1007/978-3-662-43896-1_12.

Page, M.J., McKenzie, J.E., Bossuyt, P.M., Boutron, I., Hoffmann, T.C., Mulrow, C.D., Shamseer, L., Tetzlaff, J.M., Akl, E.A., Brennan, S.E. and Chou, R., (2021). The PRISMA 2020 statement: an updated guideline for reporting systematic reviews. *bmj*, 372.

Paasivaara, M., Väättänen, O., Hallikainen, M. and Lassenius, C. (2014) 'Supporting a large-scale lean and agile transformation by defining common values', in Dingsøyr, T., Moe, N.B., Tonelli, R., Counsell, S., Gencel, C. and Petersen, K. (eds) *Agile Methods: Large-Scale Development, Refactoring, Testing, and Estimation*. Springer International Publishing, pp. 73-82.

Parizi, R.M., Gandomani, T.J. and Nafchi, M.Z. (2014) 'Hidden facilitators of agile transition: Agile coaches and agile champions', in *2014 8th Malaysian Software Engineering Conference (MySEC)*, pp. 246-250. IEEE.

Pavlič, L. and Heričko, M. (2018) 'Agile coaching: the knowledge management perspective', in *Knowledge Management in Organizations: 13th International Conference, KMO 2018, Žilina, Slovakia, August 6–10, 2018, Proceedings 13*. Springer International Publishing, pp. 60-70.

Romme, A.G.L. and Van Witteloostuijn, A. (1999) 'Circular organizing and triple loop learning', *Journal of Organizational Change Management*, 12(5), pp. 439–454.

Stray, V., Memon, B. and Paruch, L. (2020) 'A systematic literature review on agile coaching and the role of the agile coach', in *Product-Focused Software Process Improvement: 21st International Conference, PROFES 2020, Turin, Italy, November 25–27, 2020, Proceedings 21*. Springer International Publishing, pp. 3-19.

Stray, V., Tkalic, A. and Moe, N.B. (2020) 'The agile coach role: coaching for agile performance impact', *arXiv preprint*, arXiv:2010.15738.

Tosey, P., Visser, M. and Saunders, M.N. (2012) 'The origins and conceptualizations of "triple-loop" learning: A critical review', *Management Learning*, 43(3), pp. 291–307.

Yanzer Cabral, A.R., Ribeiro, M.B. and Noll, R.P. (2014) 'Knowledge management in agile software projects: A systematic review', *Journal of Information & Knowledge Management*, 13(01), p. 1450010. World Scientific.

Ziegler, A., Peisl, T. and Ates, A., 2023, August. The Future of Agile Coaches: Do Large Companies Need a Standardized Agile Coach Certification and What Are the Alternatives?. In *European Conference on Software Process Improvement* (pp. 3-15). Cham: Springer Nature Switzerland.