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A Critical Evaluation of Methodological Approaches, Research Design and Methods for Investigating the impact of Artificial Intelligence on Coaching Businesses: A Work-Based Case Study of The Coaching Centre (TCC).

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1. Introduction

Artificial Intelligence (AI) is increasingly transforming professional service industries through automation, personalised customer engagement, intelligent decision support, etc. The coaching industry, traditionally characterised by interpersonal relationships, and human-centred development, is similarly experiencing technological disruption. AI-powered coaching platforms are reshaping how coaching services are delivered while simultaneously creating opportunities and challenges for coaching practitioners and businesses (Graßmann et al., 2020; Passmore and Tee, 2023). Rather than replacing professional coaches, this shift aligns closely with the principles of the Fifth Industrial Revolution (5IR), which emphasises collaboration between humans and intelligent technologies to improve productivity while preserving human creativity, empathy and ethical judgement (Nahavandi, 2019).

1.1 Research Context (The Coaching Centre)

The considered research would investigate the impact of AI on coaching businesses and independent coaching practitioners through a work-based case study of The Coaching Centre (TCC), a coaching practice delivering leadership and personal development coaching to individuals and organisations. Although TCC currently has limited AI adoption, increasing technological innovation presents opportunities to enhance business sustainability and client experience. The researcher will need to broaden the data sources in response in order to add depth and scientific validity to the study.

The coaching sector is undergoing rapid digital transformation. AI-enabled coaching platforms such as BetterUp and CoachHub increasingly integrate machine learning, natural language processing and behavioural analytics into coaching programmes (Passmore and Tee, 2023). These technologies support goal tracking, personalised learning recommendations and continuous client engagement. AI adoption remains uneven for smaller coaching businesses, due to limited technological expertise and uncertainty regarding ethical implications and return on investment (CIPD, 2023). The proposed research therefore seeks to address the overarching question: How does Artificial Intelligence influence coaching businesses and independent coaching practitioners?

1.2 Philosophical background to research

Methodology provides the philosophical and theoretical framework that guides how research is designed, conducted and interpreted. Instead of referring only to the methods used to collect data, methodology includes the assumptions that we as researchers make about the nature of reality, how knowledge is generated and the relationship between the researcher and the phenomenon under investigation (Creswell & Creswell, 2023; Saunders et al., 2023). The understanding of these philosophical foundations is crucial because they influence each individual stage of the research process, starting from the formulation of research questions to the interpretation of findings.

2. Main Findings

Research methodology refers to the overall approach and perspective that guides the research process explaining why specific data are collected, what data are gathered, where they are obtained, and how they are analysed (Collis & Hussey, 2003).

A research paradigm is the system of beliefs and assumptions that shapes how researchers understand reality and conduct research (Kuhn, 1970). It connects three key elements: ontology, epistemology, and methodology. Ontology concerns the nature of reality, while epistemology addresses the nature of knowledge and how valid knowledge can be acquired. Positivism assumes that knowledge is generated through objective measurement, empirical observation and statistical analysis while minimising researcher influence. Interpretivism, however, views knowledge as being co-created through interaction between researchers and participants, recognising that understanding emerges through dialogue, interpretation and contextual meaning (Saunders, Lewis & Thornhill, 2023). Pragmatism combines these perspectives by selecting the methods best suited to addressing the research problem, making it particularly useful for studies that integrate qualitative and quantitative evidence (Creswell & Creswell, 2023).

Selecting an appropriate research paradigm requires researchers to reflect on their worldview, beliefs about reality, and understanding of how knowledge is generated. These philosophical assumptions guide the choice of methodology and ultimately determine the methods used to collect and analyse data.

2.1 Critical Evaluation of Methodological Approaches

Research methodologies provide different approaches to understanding and investigating phenomena, with the choice between qualitative, quantitative and mixed methods depending on the nature of the research problem, the research questions and the type of knowledge the researcher seeks to generate (Creswell & Creswell, 2023).

2.1.1 Qualitative Methodology

Qualitative research seeks to understand people's experiences, perceptions, and behaviours through detailed exploration of social phenomena (Denzin and Lincoln, 2018). For the identified topic of study, qualitative methods would empower the researcher to explore topics such as changes in coaching practice; ethical concerns; perceived opportunities and threats; client expectations; coaches' perceptions of AI; organisational readiness for AI adoption. Qualitative research captures organisational complexity and it generates rich contextual understanding that is unavailable through structured surveys. Understandably, qualitative methods have limitations. Some examples of there would be that findings are not statistically generalisable, sample sizes being generally small and data analysis is time-consuming. With all considered, qualitative methodology is widely recognised as appropriate for exploratory studies investigating emerging organisational phenomena such as AI adoption (Yin, 2018).

2.1.2 Quantitative Methodology

In contrast, quantitative research adopts a structured approach that seeks to measure variables objectively and identify patterns through numerical data and statistical analysis (Creswell & Creswell, 2023). Within the proposed study, quantitative methods could assess things like: organisational performance; digital readiness; coaching outcomes; client satisfaction; frequency of AI usage and perceived usefulness. Though quantitative research also enhances reliability because all participants respond to identical questions using standardised measurement scales. Quantitative methods cannot adequately explain why participants hold particular perceptions regarding AI or how organisational culture shapes adoption. Consequently, while surveys could complement this research, they would be insufficient as the sole methodological approach.

2.1.3 Mixed Methods Research

Mixed methods research intentionally integrates qualitative and quantitative approaches within a single study to provide a more comprehensive understanding of a research problem (Creswell & Plano Clark, 2018). Rather than viewing the two approaches as competing, mixed methods recognises that each addresses different aspects of the experience. Quantitative data can establish patterns and trends in AI adoption, while qualitative data can explain why those patterns exist and how AI is experienced in practice. This integration enhances the depth, breadth and credibility of the findings through methodological triangulation (Saunders et al., 2023).

In comparison, qualitative research offers depth but limited breadth, quantitative research offers breadth but limited depth, whereas mixed methods combines the strengths of both while reducing many of their individual limitations. The main disadvantage of mixed methods is that it requires additional time, methodological expertise and resources to collect, analyse and integrate two forms of data. However, given that the study seeks to investigate both the measurable impact of AI on coaching businesses, a mixed methods approach is considered the most appropriate, it allows the researcher to quantify patterns of AI adoption while simultaneously exploring the experiences and perceptions that shape those patterns.

2.2 Critical Evaluation of Research Designs

Research design provides the logical framework that links the research questions to the methods used for data collection and analysis, ensuring that the study is conducted systematically and rigorously (Creswell & Creswell, 2023). Selecting an appropriate research design is particularly important in work-based research because it influences the extent to which findings are applicable to organisational decision-making.

2.2.1 Experimental Research Design

An experimental design seeks to establish cause-and-effect relationships by manipulating independent variables while controlling external influences (Saunders et al., 2023). Although experimental research offers high internal validity and can demonstrate causal relationships, it is poorly suited to the proposed study. AI adoption within coaching businesses occurs naturally within dynamic organisational environments, making it impractical and ethically challenging to manipulate variables

or randomly assign participants to treatment groups. Consequently, an experimental design would oversimplify the social and professional realities of coaching practice.

2.2.2 Action Research Design

This design is particularly relevant to work-based learning because it combines inquiry with organisational improvement through iterative cycles of planning, action, observation and reflection (Coghlan & Brannick, 2014). This design would enable the researcher to implement AI initiatives within the coaching practice, evaluate their effectiveness and refine organisational practices accordingly. Its strength lies in producing practical outcomes that directly benefit the organisation. However, action research requires sustained organisational intervention, collaboration and repeated evaluation cycles, which may exceed the available time and resources. In addition, the close involvement of the researcher may increase the risk of bias, requiring careful reflexive practice.

2.2.3 Mixed Methods Research Design

Considering the complexity of AI as both a technological innovation and a social experience, a mixed methods case study is considered the most effective research design. A case study provides the contextual depth necessary to understand how AI is influencing coaching businesses, while a mixed methods approach enables the integration of quantitative evidence on AI adoption with qualitative insights into coaches' experiences, ethical concerns and professional identity. This combination supports methodological triangulation, enhances the credibility of the findings and aligns with the pragmatic philosophy underpinning work-based research. It also balances academic integrity with practical relevance, producing findings that can inform evidence-based decision-making for coaching businesses and independent coaching practitioners.

2.2.4 Case Study Research Design

The Case Study design investigates a contemporary phenomenon within its real-life context using multiple sources of evidence (Yin, 2018). This design is particularly appropriate for examining AI adoption within a coaching business because it enables the researcher to explore organisational processes, business strategies and individual experiences simultaneously. Data can be collected through surveys, interviews and

document analysis, allowing for methodological triangulation and a comprehensive understanding of the phenomenon. The proposed research naturally aligns with a case study design because it focuses on TCC as a single organisation and seeks to understand how AI influences its coaching practice, business sustainability and organisational decision-making. Rather than attempting to generalise across the entire coaching industry, the study aims to generate a rich understanding of AI adoption within the specific organisational setting.

2.3 Critical Evaluation of Data Collection Methods

Selecting appropriate data collection methods is fundamental to ensuring that sufficient and credible evidence is gathered to answer the research questions. Given the exploratory nature of the proposed study, qualitative methods are most appropriate as they enable an in-depth understanding of how Artificial Intelligence (AI) is influencing coaching businesses and independent coaching practitioners.

Semi-structured interviews are considered the primary data collection method because they provide rich, detailed insights into participants' experiences and perceptions while allowing flexibility to explore emerging issues (Kvale & Brinkmann, 2015). They also provide flexibility for participants to elaborate upon their experiences while allowing researchers to probe emerging themes (Kvale and Brinkmann, 2015).

Although interviews are time-intensive and susceptible to interviewer bias, they are well suited to exploring the complex and evolving nature of AI within coaching practice. Questionnaires may complement interviews by collecting standardised data on AI awareness, digital literacy and attitudes towards AI from a larger sample; however, their structured format limits the depth of understanding required for this study (Bryman, 2021).

Document analysis provides valuable contextual evidence by examining existing organisational records, such as, client feedback and AI implementation plans (Bowen, 2009). This could strengthen the credibility of the findings when used alongside interviews. This method is cost-effective, supports methodological triangulation and enables comparison between organisational intentions and actual practice.

Observation, as a data collection method, offers the opportunity to examine coaching sessions, AI-assisted administrative processes and digital workflows within their

natural setting, enabling the researcher to compare reported behaviours with actual practice (Denzin & Lincoln, 2018). However, its application in coaching research is constrained by ethical considerations relating to confidentiality, informed consent and the potential influence of the researcher's presence on participant behaviour. As a result, observation is considered a supplementary method, while semi-structured interviews, supported by questionnaires and document analysis, provide the most effective combination of data collection methods for investigating the impact of AI on coaching businesses. Unlike quantitative research, qualitative studies are commonly evaluated using the criteria of trustworthiness, comprising credibility, transferability, dependability and confirmability (Lincoln and Guba, 1985).

From a quantitative perspective, reliability and validity remain relevant where questionnaires or organisational metrics are incorporated.

Ethical considerations as an Insider Researcher

Ethical conduct is fundamental to the credibility and integrity of work-based research. Since the proposed study will investigate AI adoption within the researcher's organisation, ethical considerations extend beyond institutional requirements to include professional coaching ethics, organisational responsibilities and researcher accountability. Ethical approval should therefore be obtained from the relevant university ethics committee before commencing data collection.

A cornerstone of ethical research is informed consent, whereby participants voluntarily agree to participate after receiving sufficiently explained information about the study (Bell, Bryman and Harley, 2022). Participants should receive a detailed participant information sheet regarding the research. Written informed consent should be obtained prior to interviews or questionnaires. With the professional relationship that may exist between the researcher and coaching clients, particular care must be taken to ensure that participation is genuinely voluntary.

Another crucial consideration is confidentiality and anonymity. Coaching relationships rely heavily on trust and confidentiality. Consequently, protecting participants' identities is especially important within this research. Identifiable organisational information should be reported only where necessary and with appropriate permission. Interview recordings, transcripts and consent forms should be securely stored using password-protected devices and encrypted cloud storage where permitted by institutional policy.

Access should be restricted to the researcher and supervisory team. Since TCC is a relatively small organisation, indirect identification presents a particular risk. Even where names are removed, participants may be identifiable through job roles or unique experiences. Careful reporting and aggregation of findings are therefore required to minimise deductive disclosure. As AI becomes increasingly integrated into coaching practice, ethical issues surrounding algorithmic bias, transparency and human oversight become increasingly important (Floridi and Cowls, 2019).

The most widely discussed challenge to be aware of, concerns researcher bias. This could be anything from existing beliefs regarding AI adoption to coaching practice or organisational performance that may unconsciously influence interview questioning. To minimise these risks, the researcher will adopt a reflexive approach throughout the study. Reflexivity requires researchers to critically examine how their own beliefs, experiences, professional role and assumptions may influence the research process (Finlay, 2021).

Conclusion

The evaluation within this report demonstrated that methodological choices must align with the research problem, philosophical assumptions and organisational context to produce findings that are both academically rigorous and practically relevant. While qualitative and quantitative methodologies each offer valuable insights, neither independently provides a sufficiently comprehensive understanding of AI as both a technological innovation and a human-centred organisational phenomenon. Consequently, a pragmatic mixed methods methodology was identified as the most appropriate approach because it integrates measurable evidence of AI adoption with rich insights into coaches' experiences, ethical concerns and professional practice.

Among the research designs considered, a mixed methods case study emerged as the most suitable because it facilitates an in-depth exploration of AI within its real-life organisational context. Semi-structured interviews were identified as the primary data collection method, complemented by questionnaires and document analysis to strengthen the breadth and credibility of the evidence. Finally, the report highlighted the ethical responsibilities associated with insider research, informed consent, confidentiality and anonymity as essential safeguards. Collectively, the methodological

decisions provide a strong foundation for examining how AI is reshaping coaching businesses and supporting evidence-based organisational decision-making.

Recommendations

It is recommended that the study adopts a mixed methods case study supported by semi-structured interviews, questionnaires and document analysis. Ethical strictness should be maintained through informed consent, robust data protection procedures to ensure credible, trustworthy and practically applicable findings within the coaching profession.

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