

Using Generative AI to Provide a Personalised Coaching Experience

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1. Executive Summary

This piece of research has begun to look at the area of Generative AI in relation to personalised coaching, a rapidly emerging field where effective human coaching attempts to partner with best practice AI coaching design to create coaching experiences that are effective, efficient, available, and high quality, at scale.

Specifically, it explores the potential, benefits, limitations, and design considerations of generative AI coaching and coaching chatbots (often referred to as 'coachbots') for organisational coaching experiences, focusing on integrating best practices from human coaching with innovative AI capabilities.

The report highlights the advantages of AI coaching, such as increased accessibility and scalability, allowing a wider audience to benefit from coaching services. AI's capacity for personalisation, powered by data analysis, allows for tailored feedback, goal setting, content creation, and potentially enhancing coaching effectiveness. Additionally, AI can automate routine tasks, enabling human coaches to focus on the more complex aspects of coaching.

However, the report also acknowledges the limitations of current AI coaching technology. AI systems may struggle to provide the same level of empathy, emotional intelligence, and nuanced understanding of human behaviour as human coaches. This report stresses the importance of responsible AI development to mitigate potential biases and ethical concerns arising from the use of large datasets.

To address these limitations, the Designing AI Coach (DAIC) framework is highlighted as a possible pathway to responsible design of AI Coaching services. The framework combines the principles of effective human coaching with best practices in AI chatbot design and emphasizes building strong coach-client relationships through trust, empathy, and transparency. It also highlights the importance of aligning AI coaching with evidence-based coaching practices and adhering to ethical guidelines.

Specifically, the DAIC framework offers five design principles for AI coaching chatbots:

- managing user expectations about AI capabilities
- acknowledging and adapting to changes in chatbot behaviour
- ensuring reliability and recovery from errors
- encouraging appropriate self-disclosure
- considering the level of human-likeness in chatbot design.

The report concludes that while AI coaching holds significant promise, it is still an emerging field requiring practitioners to acknowledge the limitations of the technology as it is currently available, and the crucial role of expertise of human coaches.

The latest research suggests that a hybrid coaching model that facilitates a collaborative approach towards coaching between AI and human coaches will strengthen our understanding of what might be possible to deliver more impactful coaching experiences.

Further research and practice is essential to truly be able to compare the effectiveness of human and AI coaching, and how they might complement each other rather than compete with each other. This is crucial to develop user acceptance, and trust in AI coaches. Future work should focus on developing more precise coaching theories, models, and practice to guide AI coaching algorithms so that the promise of the democratisation of coaching can be fulfilled.

2. A note from ChatGPT

As a starting point to this research, we asked ChatGPT (version 3.5 and version 4.0): *“How can generative AI provide a personalised coaching experience?”*. The responses can be found in Appendix I.

While ChatGPT provides a number of examples of how GenAI can support a coaching experience, such as feedback, scheduling, real-world simulations, and on-demand performance support, the personalised element appears a little superficial. What may be missing from a GenAI coaching experience may be the insights that a professional, human coach may provide through a greater understanding of a client’s needs, personality, motivations, challenges, and so forth.

For the purposes of this report, we will focus on professional and career-coaching as health and lifestyle coaching is outside our remit.

3. Introduction

3.1 What is 'coaching' in this context?

For the purpose of this research, we are focusing on professional coaching (such as executive coaching), which the International Coaching Federation (ICF) defines as “partnering with clients in a thought-provoking and creative process that inspires them to maximize their personal and professional potential”¹.

Similarly, Terblanche, (2024) defines organisational coaching as ‘a combination of psychology and adult learning where a one-on-one individual development process is facilitated by a human coach, with the aim of helping people increase their self-awareness and self-efficacy for their own and the organisation’s benefit’ (p. 631).

Professional coaching processes often involve approaches such as active enquiry², positive psychology (Gable & Haidt, 2005), and strengths-based models that are completed collaboratively with the client.

For example, the strengths-based approach was developed as a response to models that focus on the deficit (Seligman, 2018), seeking to view the individual holistically and explore abilities and circumstances, rather than focusing on weaknesses and deficits.

The approach is a “philosophy for working with people to bring about change” (McCashen, 2005).

These are only some of the approaches used by coaching professionals, but it begs the question whether GenAI can replicate these assessments and processes.

Terblanche, (2024) defined AI as the simulation of human intelligence using machines, with the aim of mimicking human reasoning, problem-solving, decision-making, and even creativity, and argues that AI coaching is when the worlds of organisational coaching and AI, in particular generative AI meet.

1

<https://coachingfederation.org/about#:~:text=What%20is%20Coaching%3F,of%20imagination%2C%20productivity%20and%20leadership>

² <https://www.porchlightbooks.com/blog/changethis/2021/active-inquiry>

Coaching and Generative AI are two fields that meet increasingly. Given the emergence and continued development of Generative AI and its promise to transform the world, including the world of work and the world of coaching, it is essential to pursue and find successful implementation in organisations. This needs to be supported by the adoption and integration of AI into professional roles like coaches for example (Diller et al., 2024)

3.2 Digital and AI coaching?

(Passmore et al., 2024) argue that ‘the term ‘digital coaching’ is widely used but has been applied to multiple different formats of coaching’ (p. 31). They explored the variety of terms and aimed to provide clearer definitions of these formats with the view they can be used as a basis for further research into the efficacy of what mode of coaching delivery is best suited to certain types of individuals or specific time of coaching issues they may present with. They argue clear definitions and conceptualisation is required to provide a shared understanding of terminology from which practice and research can be built. Their definitions are provided in Table 1.

Table 1: Definitions of digitally enabled coaching (Passmore et al., 2024)

Table 1.1 Digitally-enabled coaching terminology

| <i>Term</i> | <i>Definition</i> |
|---|---|
| Online coaching / virtual coaching / e-coaching | These terms have been used to apply to different forms of coaching that are delivered through digital communications, combining audio and visual channels. They have largely been replaced by the term 'digital coaching'. |
| Telephone coaching | This is coaching using an audio channel only. Once popular in the US where distances are large, but now almost completely replaced by online communications. |
| Digital coaching | A synchronous, personal conversation using DT-enabled audio and video channels of communication between a human coach and a human client to empower the client in their self-development (Diller & Passmore, 2023). |
| Coaching platform | A provider of software that enables audio and visual communications, usually combined with other tools to facilitate record keeping, diary management, and learning. |
| AI coachbot | A computer-generated response, which either follows a predetermined script or LLM from which the software selects a response. |
| AI coaching | The process of delivering a synchronous or or asynchronous coaching using a computer as the coach instead of a human coach. |
| VR (virtual reality) | VR is the term used for computer-generated 3D environments which are presented using head-worn computer devices that occlude the physical world, enabling the user to explore and interact with the content. True VR is created using two different content streams, one presented to each eye, thus creating depth of perception so that the user has a sense of being immersed in the digital experience. VR content can be 3D generated or filmic, interactive or passive, and can be a personal experience or shared by many users connecting to the same digital environment across a network. |

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3.3 Personalisation and coaching

Coaching is an inherently personal experience based on a trusting relationship between coach and client. Coaching theories and practices are built on theoretical constructs that are most effective when personalised. They include personalised goal setting (Deci & Ryan, 2000), providing specific and targeted feedback (Ericsson, 2006), personalised support to foster growth (Vygotsky, 1978), support for individual's emotional needs (Grant, 2023), improved self-awareness (Boyatzis, 2006), and behavioural change (Wilson, 2011).

Successful application of these constructs through a strong coaching model can ultimately lead to impactful, meaningful, and sustainable behaviour change.

Some of the most well-known coaching models include:

1. **GROW Model:** Focuses on Goals, Reality, Options, and Will.
2. **OSKAR Model:** Emphasizes Outcome, Scaling, Know-how, Action, and Review.
3. **CLEAR Model:** Stands for Contracting, Listening, Exploring, Action, and Review.
4. **FUEL Model:** Focuses on Frame the conversation, Understand the current state, Explore the desired state, and Lay out a path forward.
5. **SMART Goals:** Though often used in goal setting, it's related to coaching in clarifying Specific, Measurable, Achievable, Relevant, and Time-bound goals.

A sixth model, the PRACTICE model, is worth mentioning as it is leveraged in Graßmann & Schermuly's 2021 study which is discussed later in this report. The PRACTICE model (Palmer, 2007), see Table 2, is based on the GROW model (Whitmore, 2010), but is more detailed and structured, not only focused on achieving a specific goal, but also on evaluating solutions and learning from the process. It is typically used in more complex situations where ongoing reflection and adaption is important and what is true to the iterative nature of coaching.

Table 2. The revised PRACTICE coaching model sequence (Palmer, 2022)

| Steps | Possible questions, statements and actions |
|---|---|
| 1. Problem identification | <p>What's the problem or issue or concern or topic you wish to discuss? What would you like to change? Any exceptions when it is not a problem, issue or concern? How will we know if the situation has improved? On a scale of 0 to 10 where '0' is nowhere and '10' is resolved, how near are you now today, to resolving the problem or issue? Any distortions or can the problem or issue be viewed differently? Can you imagine waking up tomorrow morning and this problem (or issue or concern) no longer existed, what would you notice that was different?</p> |
| 2. Realistic, relevant goals developed (e.g. SMART goals) | <p>What do you want to achieve? Let's develop specific SMART goals.</p> |
| 3. Alternative solutions generated | <p>What are your options? Let's note them down.</p> |
| 4. Consideration of consequences | <p>What could happen? How useful is each possible solution? Let's use a rating 'usefulness' scale for each solution where '0' is <i>not useful at all</i>, and '10' is <i>extremely useful</i>.</p> |
| 5. Target most feasible solution(s) | <p>Now we have considered the possible solutions, what is the most feasible or practical solution(s)?</p> |
| 6. Implementation of Chosen solution(s) | <p>Let's implement the chosen solution by breaking it down into manageable steps. Now go and do it!</p> |
| 7. Evaluation | <p>How successful was it? Rating 'success' scale 0 to 10. What can be learnt? Can we finish coaching now or do you want to address or discuss another issue or concern?</p> |

4. Affordances of AI for Coaching

4.1 AI coaching chatbots (coachbots) capability for professional coaching

One question that is often asked in relation to generative AI in general and the use of generative AI for professional coaching is whether or not GenAI can be compared to the skills and capabilities of a human. Plotkina & Sri Ramalu (2024)'s systematic literature review examined this question in the context of AI coaching chatbots. They identified the strengths and weaknesses of AI coaching chatbots, considering their potential to complement and potentially replace certain aspects of human coaching. They also highlighted the current limitations and ethical concerns.

Plotkina and Ramalu conclude that currently, AI coaching cannot replace human coaching. However, AI coaching is effective for narrow tasks such as goal attainment, support for various psychological conceptions and the induction of reflective processes. AI coaching therefore could be a helpful tool or assistance for human professional coaches and enhance their performance in coaching interventions. Examples provided include coaching session analysis and providing ongoing support to coachees.

AI Coaching does however fall short in replicating the complexity of coach-coachee relationships and long-term real coaching interventions. AI Coaching cannot show the same empathy or adaptability of a human coach that is necessary to address and support sophisticated and personalised approaches that a coachee might need.

4.2 A study comparing the effectiveness of human coaching and AI coaching

Research on AI Coaching is only beginning to surface and more and ongoing work is required to fully understand the potential and shortcomings of using AI technology for what is considered to be an inherently human experience. Further insights will also highlight the need for human coaches to enhance their skills and perhaps practice their profession alongside AI.

(Terblanche et al., 2022) aimed to contribute to the field of research and echo the findings of Plotkina and Ramalu and stated that one of the most important components of coaching success is the coach-client relationship, and the current lack of ability of AI to reflect and

relate to true human intelligence and emotion brings the ability of AI coaching into question. In order to investigate this claim, they carried out two longitudinal randomised control trials conducted over a period of 10 months with one group receiving coaching from a human coach and another from an AI coach. Surprisingly, they found the AI coach to be as effective as the human coach by the end of this trial, and that both were significantly more effective compared to the control groups in both studies.

Factors that contributed to the effectiveness of the AI Coach (a chatbot called Vici) were firstly a rigorous application of goal theory to the AI chatbot design, allowing for consistency in coaching interaction, and secondly, the AI chatbot was available 24/7 which arguably allowed study participants to interact with it when they wanted. This could have led to more optimal engagement. This also relates to the final point that the AI coaching participants could interact with the chatbot as often as they liked, whereas the human coaching was limited to a monthly session. If participants used the AI chatbot more, they experienced greater goal attainment.

4.3 The potential benefits of AI Coaching

Based on their randomised trial study, (Terblanche et al., 2022) argue that AI coaching could democratise coaching and make it more accessible to people needing a coaching service who otherwise would not be able to access human coaching services because they are not available or are too expensive. If coaching becomes more widely available through AI coaching, accessibility will increase, and more people might be able to benefit from a coaching experience. Human coaches could work alongside and learn from AI coaches whereas AI coaches could complement by providing more routine support, allowing the human coach to improve skills in areas where AI is currently limited such as building relationships, understanding complex situations, and providing consistent but individualised support to clients.

(Graßmann & Schermuly, 2021) explored the capabilities of AI coaching by analysing its performance on each step of the PRACTICE coaching model (Palmer, 2007) . They found that AI coaching was successful in guiding clients through many steps of the coaching process, including developing realistic goals, generating alternative solutions, and considering

consequences. The AI coach also did well at tasks that involved long chains of logic, tolerance for errors, and explanations of decisions. They argue that the use of AI coaching can be augmented by human coaches, or focus on pre-defined coaching topics, for example stress management or a pre-defined behavioural goal resulting from a learning activity to promote learning transfer. In addition, (Graßmann & Schermuly, 2021) also recommend exploring ways to integrate diagnostics in coaching practice, for example norm-based feedback or visualisation. While available, these are not often included in human coaching practice but could provide more insight in the client's needs and professionalise the coaching profession.

AI coachbots offer numerous advantages that enhance and support personal growth and learning. They can keep detailed records of communications, enabling continuity and deeper insights into a user's progress over time. These chatbots can be trained with any text in any language, making them versatile and accessible to a global audience. By asking appropriate questions, they facilitate meaningful conversations and encourage self-reflection, supporting a self-coaching approach that is both cost-effective and widely accessible. AI coaching chatbots are designed to make learning impactful and aligned with concrete goals, remaining neutral and unbiased while respecting clients' choices and autonomy. Additionally, they collect trends and gain insights into how clients express their challenges and aspirations, providing valuable data that can support and enhance human coaching services.

4.4 The potential disadvantages of AI Coaching

Plotkina and Ramalu (2024) highlight a number of ethical considerations. One example addressed in relation to Generative AI, such as Chat-GPT, is that while these tools can generate human-like conversations, show empathy, and ask coaching-style questions, they do so in an unsupervised capacity. This lack of supervision is considered unethical and does not meet coaching standards. Plotkina and Ramalu stress the importance to address these ethical challenges and continue research into both the potential and limitations of using AI Coaching tools in order to ensure responsible development and implementation.

Graßmann & Schermuly (2021) identified several disadvantages of AI coaching. Perhaps the most prominent concern relates to the transparency of AI; clients might feel the need to better understand how a Generative AI coach reached a decision about them, especially when the results are surprising or might indicate a deeper personality diagnostic. These explanations would have to be programmed into the technology, similar to how a human coach would provide explanations and interpretations in real life coaching practice.

Several researchers and organisations (Duffy & Passmore, 2010), (International Coaching Federation, 2015), (Stern, 2019) have pointed out that AI can currently not understand human intentions, setting conflicting goals or evaluate the content of the goals set. It is therefore recommended that AI coaching should be combined with human coaching. AI coaching can focus more on homework for the client that allows them to expand the learning experiences and leave the more in-depth reflection for the human coaching sessions.

The International Coaching Federation's 2024 Framework involves the setting up of a task force as well as focused AI Coaching Standards to address some of the concerns related to AI coaching such as bias and disclosure of sensitive information³.

³ <https://coachingfederation.org/app/uploads/2024/06/The-ICF-Artificial-Intelligence-Coaching-Framework-and-Standard-v0.16.pdf>

4.5 Predictions of future research directions in AI coaching

Graßmann & Schermuly (2021) identified a number of areas for development necessary to improve the AI coaching experience. The first is to conduct more research (similar to, for example, Terblanche et al., (2022)) that compares human coaching with AI coaching on specific capabilities.

Secondly, they recommend the development of more precise coaching theories and models that can be used to guide the AI coaching algorithms. Thirdly, they argue that the difference in how a coaching relationship is established between AI coaching and human coaching could be a differentiating factor in the effectiveness of AI coaching. Future research should explore the differences in how the relationship is established and what factors might influence it.

5. A model for AI coaching design

Empirical studies on the design and effectiveness of organisational coaching chatbots, powered by AI, are not plentiful and limited to the health sector rather than wide organisational application (Terblanche, 2020). The Designing AI Coaching framework (Figure 1) provides a blueprint for creating AI coaching systems within organisations, especially effective chatbots. The framework aims to blend the successful aspects of human coaching with effective chatbot design principles.

5.1 DAIC model facet one: effective human coaching

The first aspect for a strong AI coaching model stems from the coach-coachee relationship. This is the first and foremost principle of quality human coaching that researchers agree on (De Haan et al., 2016; Graßmann & Schermuly, 2021; McKenna & Davis, 2009). Trust, empathy, and transparency are all aspects that support a strong coach-coachee relationship. Trust in particular is predictive of a strong relationship and consists of three elements:

- Ability: the trust instilled by the skills and competencies of a person
- Benevolence: the perception of being acted towards in a well-meaning manner, and
- Integrity: a measure of adherence to agreed-upon principles between two parties.

The second principle of human coaching that underpins the DAIC framework is evidence-based practice (Grant, 2014). Coaching is often criticised for ‘borrowing’ models and frameworks from other professions without empirical verification (Theeboom et al., 2014). Any AI coach approach should be based in theoretically sound coaching approaches (Spence & Oades, 2011).

The third principle of human coaching that underpins the DAIC framework is sound ethical practice. Concerns over ethics are increasing as more AI coaches are used by people who increasingly expect that the AI coach algorithms are unbiased and ethical (Grant, 2014). According to Kamphorst, (2017) four ethical and legal issues are particularly applicable to pay attention to in the context of AI coaching:

1. Privacy and data protection: it must be clear to the user what data is obtained from a coaching session, where it is stored, and who has access to it.
2. Autonomy: coaching is process of self-directedness whereby the focus of the coach is to empower the coachee. AI coaching systems could potentially manipulate the coachee conflicts with the self-directedness nature of coaching (Luthans et al., 2008).
3. Liability and division of responsibilities: the responsible creation of AI coaching systems could be constrained by the diverse levels of stakeholders that create those systems. It is therefore important to ensure liabilities and responsibilities are managed to ensure the needs of the intended service user.
4. Biases: AI relies on large amounts of data originating from many different sources, leading to a potential risk of inherent biases. These need to be made explicit and avoided where possible (Schmid Mast et al., 2015)

5.2 DAIC model facet two: best-practice AI coaching chatbot design

Terblanche (2020) identified five design principles for AI coaching chatbots that are included in the DAIC framework. They are:

5.2.1 Level of human likeliness: how human-like should an AI chatbot be?

The debate centres on balancing emotional engagement while avoiding the 'uncanny valley', a phenomenon where highly human-like bots can create discomfort. Research suggests that less human-like, text-based chatbots are less likely to trigger this negative effect compared to those with a human-like avatar. However, certain human-like features, such as having a name and engaging in casual conversation, can enhance users' sense of social presence, making the chatbot seem more relatable and anthropomorphic without necessarily invoking the uncanny valley (Xu et al., 2017; Ciechanowski et al., 2019; Araujo, 2018).

5.2.2 Managing capability expectations

It is vital for an AI chatbot to communicate its purpose and capabilities (especially AI's limitations) transparently to manage the expectations of the user. This is important to build and maintain a trusting relationship between the AI coach and a coachee and prevents

disappointment with the value of the experience because expectations are not being met (Lovejoy, 2019; Jain et al., 2018).

5.2.2 Changing behaviour

Lovejoy (2019) also points out that AI chatbot coaches are likely to change their behaviour as they continuously learn from continued usage. Coachees would have to be made aware that the nature of their interactions with the AI coach might change, and that they are leveraged to improve the capabilities of the AI coach. In an experiment using Co-pilot as a self-reflection coach, Arakawa & Yakura, (2024) aimed to prevent the impact of these expected AI coach behaviour changes by putting a human coach in the lead of a hybrid coaching experience whereby the human coach and coachee set individual coaching goals, and the coachee used Co-pilot AI in a pre-agreed manner.

5.2.2 Reliability

AI coaches are learning continuously and are therefore by definition not perfect. This can disengage coachees from using it, but on the other hand, research shows that users might prefer to converse with AI chatbots that are imperfect (and perhaps considered more human-like?). There appears to be a window of opportunity for a chatbot to recover from mistakes if it acknowledges the mistakes and emphasises the fact that it is learning continuously (Lovejoy, 2019; Medhi Thies et al., 2017).

5.2.2 Disclosure

Even though AI coaches cannot replace a human coach, they can be helpful to disclose personal information that would provide a human coach with the knowledge to provide personalised coaching experiences. Lee & Choi, (2017) found no significant relationship between self-disclosure and building a trust relationship between a conversational agent and user, however (Lee et al., 2020) found there may be a positive interaction between trust in the chatbot, participant self-disclosure behaviour and trust in a human mental health practitioner. While more research is required, the use of AI chatbots to encourage the level of client disclosure necessary for a high-quality coaching intervention, offers an interesting design consideration for any AI coaching chatbot.

5.3 The Designing AI Coach (DAIC) framework

The DAIC Framework (Figure 2), takes both design facets (effective human coaching and best practice AI chatbot design) into consideration (Terblanche, 2020). The model stipulates that an effective AI coaching chatbot should target specific outcomes like goal attainment, well-being, self-awareness, or behavioural change. Furthermore, the chatbot's model should align with validated theoretical frameworks that support these outcomes. Additionally, the framework highlights the importance of fostering a strong coach-coachee relationship within the chatbot's interaction model. The chatbot's behaviour should also adhere to an organizational coaching ethical code, respecting the unique requirements and conventions of the organizational environment.

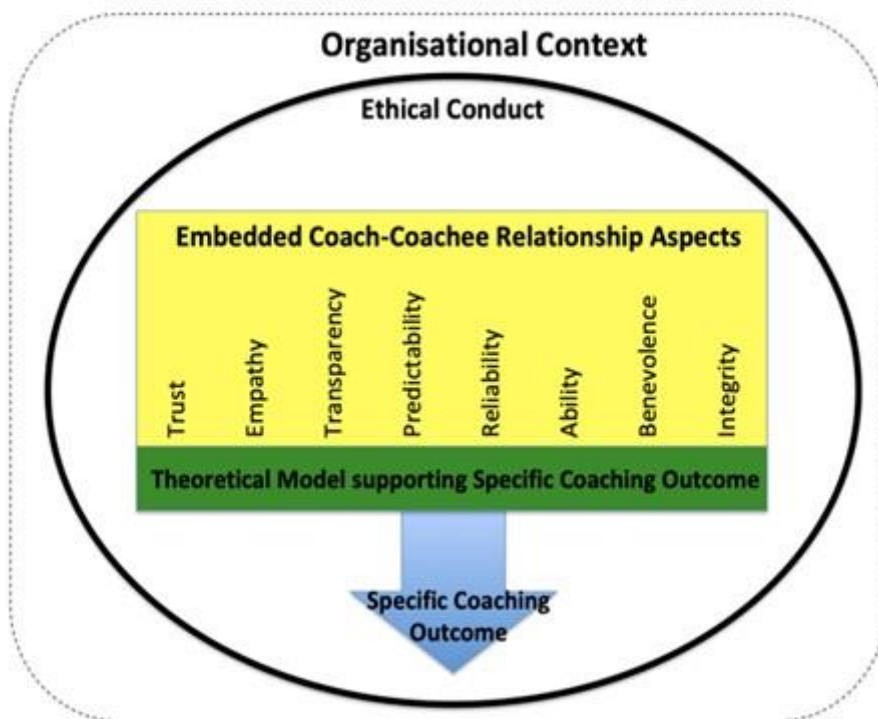


Figure 2: The Designing AI Coaches (DAIC) Framework (Terblanche, 2020)

In addition, Table 3 presents a summary of best-practice chatbot design considerations mapped to aspects of a strong relationship between coach and coachee.

Table 3: Chatbot design practices to support strong coach-coachee relationships (adapted from Terblanche, 2020)

| Coach Attribute | Chatbot design consideration |
|-----------------|--|
| Trust | <ul style="list-style-type: none"> • Avoid the 'uncanny valley' effect⁴ • Communicate data privacy agreement • Create consistent chatbot personality • Reduce security and privacy concerns |
| Empathy | <ul style="list-style-type: none"> • Use a human name and human-like conversational cues • Remember user's likes, dislikes, and preferences across sessions |
| Transparency | <ul style="list-style-type: none"> • Reveal non-humanness • Practice self-disclosure • Showcase purpose and ethical standards |
| Predictability | <ul style="list-style-type: none"> • State possible behaviour change due to continuous learning • Find a balance between a predictable personality and sufficient human-like variation • Use conversational context in interactions |
| Reliability | <ul style="list-style-type: none"> • Fail gracefully • Monitor chatbot performance and reliability • Provide confirmation messages |
| Ability | <ul style="list-style-type: none"> • Use established theoretical models (e.g. goal attainment) • Use personalisation and avoid generic responses |
| Benevolence | <ul style="list-style-type: none"> • Communicate positive intent • Demonstrate a positive attitude and mood |
| Integrity | <ul style="list-style-type: none"> • Clearly communicate limitations • Clarify purpose in the introductory message |

Terblanche (2020) highlights that AI in organisational coaching is still an emerging field, requiring more research on the effectiveness of chatbots in tasks like goal achievement and emotional intelligence development. Such insights could enhance the scalability and accessibility of AI coaching. Additionally, studying user acceptance and trust in AI coaches, would clarify their role alongside or independent of human coaches. While AI coaches are initially inspired by human counterparts, they may evolve distinct capabilities, necessitating further empirical investigation to optimize their design and better understand their potential in coaching contexts.

⁴ <https://www.britannica.com/topic/uncanny-valley>

6. AI Coaching: Where are we now?

It is clear from the research that organisational coaching has great benefits for how employees are developed and supported, while the power and efficacy of AI, especially generative AI holds a promise to permanently change how coaching is performed by improving personalisation and democratising access to quality coaching.

However, while we seem to be on the cusp of a big change, it has not happened yet, and more work is required to ensure it happens reliably and effectively. The challenge, according to Terblanche, (2024) is “how to optimally leverage AI in organisational coaching for exponential gains” (p. 631).

Terblanche identifies four main applications of AI in organisational coaching: coach emulation, coach support, coach education, and coaching data analysis

6.1 Coach emulation

According to Terblanche (2024), existing AI coachbots, such as Coach Vici⁵ and Aimy⁶, operate autonomously and replicate human coaching functions in a cost-effective way that is available 24/7 to provide coaching to all employees. This point of view is supported by a study (Terblanche et al. 2022) that demonstrates their effectiveness in specific coaching contexts, even though which contexts specifically is not provided.

6.2 Coach support

Triadic coaching, where a client is coached by both a human coach and AI coach, provides a plausible future application of AI coaching. Diller et al., (2024) refer to triadic coaching as ‘hybrid coaching’. The underlying concept is that AI systems and human coaches combine their strengths to deliver the most effective and comprehensive coaching experience. AI could apply its capabilities in data analysis, task automation and feedback provision, while

⁵ <https://www.coachvici.com/>

⁶ <https://www.coachhub.com/aimy/>

the human coach focuses on building relationships, providing emotional support and address complex human needs that AI is not able to fully grasp.

Other specific hybrid coaching approaches such as AI-assisted coaching, and human-in-the-loop coaching are mentioned in addition to triadic coaching, however little evidence is provided about what these approaches are of what their efficacy is.

6.3 Coach education

Diller et al., (2024) highlight threats that AI coaching is perceived to pose by a sample of 436 coaches from 50 different countries. Overall, the majority of businesses considered AI coaching to be a threat to their profession, their sense of control, and their identity as coaches.

They are more likely to have lower activation and negative opinion towards the use of AI in coaching practice, and are generally less curious about it

Diller et al. state that the outlook is that AI will become essential in coaching and offer five implications for shifting the focus from AI being a threat to adapting AI into coaching. They are:

1. Reduce AI related fear, for example through mindfulness and affirmations to foster adaptability
2. Enhance control via education, boosting digital literacy and openness to AI
3. Collaborate with AI, by combining human intuition with AI efficiency for ethical and effective decision-making
4. Foster innovation and create supportive organisational cultures that are open to human-centric AI
5. Design responsible AI to ensure fairness, accountability, and inclusivity through ethical frameworks

6.4 Coaching data analysis

Another advantage put forward is that AI coaches collect and analyse valuable data from human coaching sessions to detect trends and patterns on employee sentiment,

engagement, recurring themes, and team performance during interactions that would be difficult for humans to identify.

While certain studies (Terblanche et al., 2022; Terblanche & Kidd, 2022) suggest that users appear quite happy to adopt the use of coaching bots and disclose personal information, others like Diller et al., (2024), and Dwivedi et al., (2023) express concerns and limitations regarding the quality of AI coaching, especially their limited empathy and potential for bias.

7. Recommendations

The topic of AI coaching is exciting from both a (personalised) learning, technology, and human development perspective as it holds a great promise to provide higher quality coaching interventions for more people who might benefit from them from a personal wellbeing or performance perspective.

As with many generative AI initiatives, a great deal of work still needs to be done to ensure that human expertise and generative AI technology meet in a way that satisfies all parties involved in the coaching process. Most importantly the coach and the coachee, who ensure effective coaching by building a relationship based on trust. Building trust throughout a coaching intervention is considered the cornerstone for effective coaching.

Through the research in this report, we argue the possibilities and potential are currently still somewhat weighed down by concerns for human coach job security, trusting technology with an inherently human experience, client disclosure, data protection, confidentiality, and user experience, valid concerns that need to be addressed.

As a follow-up to this initial research report, we recommend continuing the research effort on AI coaching and exploring how coaching experiences might become an effective hybrid of AI and human coaching and what design considerations need to be met to achieve this.

Specifically, we would propose the following questions to consider:

- How can we leverage the data collected by AI coaching bots to provide insights for human coaches and improve the overall effectiveness of coaching programmes?
- What different hybrid coaching models exist and how can their effectiveness be evaluated in different coaching contexts?
- How can organisations prepare human coaches for the integration of AI into coaching practices and mitigate the perceived threats to their profession, control, and identity?

- How can AI coaching chatbots be used to support self-directed learning and self-coaching initiative, and how can their design be optimised for this purpose?
- How can AI coaching be effectively integrated into existing coaching models such as GROW or PRACTICE to improve coaching outcomes? (or the other way around)
- What would an AI coaching chatbot design look like when it takes into account concerns around privacy, data security, bias, and transparency in coaching interventions?

As the research continues and coachbots become more sophisticated and integrated into corporations, the Learnovate Centre intends to continue with its up-to-date State of the Art/State of the Market research, testing of associated GenAI tools, and development of use cases.

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Appendix I | Let's ask ChatGPT

| <i>We asked ChatGPT the following question: "How can Generative AI provide a personalised coaching experience?"</i> | |
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| ChatGPT 3.5 | ChatGPT 4.0 |
| <p>Generative AI can significantly enhance personalized coaching experiences by providing tailored insights, real-time feedback, and personalized recommendations that adapt to the user's goals, progress, and unique learning style. Here's how it can deliver a truly customized coaching experience:</p> | <p>Generative AI can create highly personalized coaching experiences by adapting to individual needs, preferences, and learning styles in real time. Here's how it can be utilized effectively in coaching:</p> |
| <p>1. Understanding User Context and Goals</p> <ul style="list-style-type: none"> ● Initial Assessment: Generative AI can conduct an interactive initial assessment to understand a user's current skill level, strengths, weaknesses, and specific goals. ● Personalized Goal Setting: Based on user inputs and analysis of historical data, the AI can help set personalized, achievable goals. For example, if the user's goal is fitness, it can suggest a mix of aerobic and strength training routines tailored to their abilities. | <p>1. Customized Content Creation</p> <ul style="list-style-type: none"> ● Personalized Exercises: AI can create exercises or tasks based on a person's goals, progress, and areas of improvement. For example, a fitness coaching AI might design unique workout routines based on the user's fitness level, preferences, and injuries or limitations. ● Tailored Learning Materials: For skills coaching (e.g., public speaking, coding), AI can provide personalized learning resources, examples, and analogies that align with the user's current knowledge level and preferred learning style. |

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| <p>2. Real-Time Feedback and Adaptive Guidance</p> <ul style="list-style-type: none"> ● Continuous Improvement: The AI can monitor a user’s progress and provide instant feedback to help improve performance. In a language learning app, for example, it can detect pronunciation errors and suggest corrections immediately, helping users improve faster. ● Adaptive Recommendations: Generative AI can adjust difficulty levels or suggest new strategies based on the user’s evolving needs. For a user struggling with particular skills, it might generate additional exercises, resources, or step-by-step guidance that addresses those specific challenges. | <p>2. Real-Time Feedback and Insights</p> <ul style="list-style-type: none"> ● Progress Tracking: By continuously analyzing user inputs, AI can offer real-time feedback, such as identifying language patterns in communication skills training or suggesting improvements in writing. ● Emotional and Sentiment Analysis: AI can detect sentiment in text, voice, or facial expressions, helping coaches understand a user’s emotional state and adapt sessions to keep them motivated or provide support during challenging times. |
| <p>3. Simulating Real-World Scenarios</p> <ul style="list-style-type: none"> ● Role-Playing and Scenario Simulations: In areas like public speaking, job interview prep, or customer service training, generative AI can create realistic scenarios for users to practice. For example, it can simulate different types of audience reactions, allowing users to refine their skills in a safe, controlled environment. ● Decision-Making Practice: AI can offer complex, branching scenarios where users make decisions and receive feedback on the outcomes, which is particularly useful in fields like leadership training and business strategy. | <p>3. Simulated Scenarios and Role-Playing</p> <ul style="list-style-type: none"> ● Practice Environments: AI can simulate realistic scenarios for coaching, such as role-playing difficult conversations for leadership training or virtual interviews for job coaching. It can also adjust the difficulty level to match the user’s growth. ● Interactive Q&A Sessions: With natural language understanding, AI can answer specific questions or engage in back-and-forth conversations, |

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| | <p>providing dynamic responses that adapt to the user's queries and knowledge gaps.</p> |
| <p>4. Enhanced Learning Materials</p> <ul style="list-style-type: none"> ● Customized Content Generation: AI can create personalized study materials, exercises, or even practice tests based on a user's progress. For someone learning coding, it might generate coding challenges that align with their current knowledge and goals. ● Multimodal Learning Options: For those who prefer visual or auditory learning, generative AI can create graphics, videos, or interactive presentations, enhancing engagement and making learning materials more accessible to different learning styles. | <p>4. Goal Setting and Accountability</p> <ul style="list-style-type: none"> ● SMART Goal Tracking: AI can help users set Specific, Measurable, Achievable, Relevant, and Time-bound (SMART) goals and monitor progress over time, providing reminders and celebrating milestones to keep users engaged. ● Accountability Reminders: With scheduled check-ins or nudges, AI can encourage consistent behavior toward goals, whether it's practicing mindfulness daily, completing training exercises, or meeting work-related deadlines. |
| <p>5. Behavioral and Motivational Insights</p> <ul style="list-style-type: none"> ● Gamification and Motivation: AI can track a user's engagement and adjust the experience to encourage progress. This can include gamified elements like levels, rewards, or challenges that increase motivation. For fitness, this might mean unlocking achievements for reaching milestones, which helps keep the user motivated. | <p>5. Behavioral and Cognitive Coaching</p> <ul style="list-style-type: none"> ● Personalized Cognitive Techniques: AI can apply principles from cognitive-behavioral coaching to guide users through self-reflection exercises or help them reframe negative thoughts, improving resilience and self-awareness. |

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| <ul style="list-style-type: none"> ● Identifying Patterns and Habits: AI can analyse patterns in user behavior to identify when they are most productive, when they might need a break, or if they're losing motivation. With this data, it can offer gentle reminders, encouragement, or adjust goals to keep users engaged. | <ul style="list-style-type: none"> ● Habit Formation: Through data-driven insights, AI can identify patterns in a user's behavior and provide suggestions or motivation to build healthy habits, such as improving time management or practicing self-care. |
| <p>6. Empathy and Soft-Skill Development</p> <ul style="list-style-type: none"> ● Interactive Conversational Coaching: AI can mimic a supportive, conversational tone to make users feel comfortable and encouraged. For mental health or wellness coaching, AI can provide calming exercises, mindful check-ins, and empathetic responses that help users develop positive habits. ● Cognitive Reframing and Reflection: By asking reflective questions or offering perspective-shifting suggestions, generative AI can encourage users to think more deeply about their choices and reactions, which is particularly beneficial in areas like leadership coaching or personal development. | <p>6. Data-Driven Insights and Pattern Recognition</p> <ul style="list-style-type: none"> ● Identifying Strengths and Weaknesses: AI can analyze large amounts of data from previous interactions, highlighting the user's strengths and suggesting areas for improvement. ● Predictive Analytics: AI can predict potential obstacles or challenges a user might face based on their past performance, helping them prepare proactively. |
| <p>7. Tracking Progress and Adjusting the Experience</p> <ul style="list-style-type: none"> ● Data-Driven Insights: AI can generate detailed progress reports that show users where they've improved and areas that need more attention, based on comprehensive data analysis. | <p>7. Personalized Communication Style</p> <ul style="list-style-type: none"> ● Adaptive Tone and Language: Generative AI can adjust its tone, formality, and language style to match a user's preferences, making communication feel more personal and relatable. |

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| <ul style="list-style-type: none"> ● Long-Term Adaptation: As it learns from the user’s interactions and achievements, generative AI can modify its coaching approach, such as by offering advanced materials as the user progresses, or pivoting strategies if progress stalls. | <ul style="list-style-type: none"> ● Cultural and Contextual Sensitivity: By understanding the user’s cultural background or professional context, AI can tailor recommendations and conversations that feel more relevant and respectful. |
| <p>8. 24/7 Accessibility and Instant Support</p> <ul style="list-style-type: none"> ● On-Demand Support: AI offers immediate responses anytime, which is valuable for users needing quick answers or immediate encouragement outside regular coaching hours. For language learners, this might mean instant help with pronunciation, while for fitness users, it could be quick reminders on proper form or technique. ● Flexible Scheduling: Users can engage in their coaching sessions whenever it’s convenient, making coaching accessible and sustainable even for those with busy schedules. | <p>8. Progress Visualization and Reporting</p> <ul style="list-style-type: none"> ● Visual Dashboards: AI can create dashboards to help users visualize their progress, showing trends over time and areas for improvement. ● Regular Progress Reports: Based on interactions and data points, AI can summarize achievements and goals in regular reports, making it easier for users to track their growth and stay motivated. |
| <p>9. Data-Driven Personalization Across Fields</p> <ul style="list-style-type: none"> ● Health and Wellness: Generative AI can create personalized workout and nutrition plans that adjust based on a user’s goals, daily progress, and even biometric data if connected to health devices. | <p>9. Access to a Wealth of Knowledge and Best Practices</p> <ul style="list-style-type: none"> ● Updated and Relevant Information: AI has access to vast resources and can keep the user informed of the latest trends, tools, or techniques relevant to their personal or professional growth. |

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| <ul style="list-style-type: none"> ● Professional Development: In career coaching, it can simulate real-life challenges, provide practice interview sessions, and suggest specific skills to improve based on industry trends. ● Creative Skill-Building: For artistic skills, like writing or music composition, generative AI can generate prompts, critique work, and suggest ways to develop a unique style based on analysis of user submissions. | <ul style="list-style-type: none"> ● Learning on Demand: Users can ask questions anytime and get answers drawn from a large knowledge base, making the AI a 24/7 resource for learning and support. |
| <p>10. Privacy and Ethical Considerations</p> <ul style="list-style-type: none"> ● Confidential Coaching Data: Generative AI can provide highly personalized experiences while also being configured to prioritize user privacy, ensuring personal data and progress are kept secure and confidential. ● Bias Awareness: AI can be trained to avoid biases, ensuring that all feedback is inclusive, encouraging, and appropriate for the individual's cultural and personal context. | |
| <p><i>Generative AI brings a highly responsive, data-driven, and empathetic coaching experience that can support users in ways that mimic, and sometimes even enhance, the personalized guidance offered by human coaches. This adaptability makes AI-based coaching a powerful tool for achieving personal and professional growth in an accessible and engaging way.</i></p> | <p><i>Generative AI's ability to create individualized responses, track user progress, and adapt to changing needs makes it a powerful tool for providing a highly engaging, supportive, and effective coaching experience.</i></p> |