



# Surrendering to the Process: Innovation in Developing CPD for General Practice

Stense Kromann Vestergaard, Ulla Bjerre-Christensen, Anne Mette Morcke & Torsten Risor

To cite this article: Stense Kromann Vestergaard, Ulla Bjerre-Christensen, Anne Mette Morcke & Torsten Risor (2023) Surrendering to the Process: Innovation in Developing CPD for General Practice, Journal of CME, 12:1, 2164141, DOI: [10.1080/28338073.2022.2164141](https://doi.org/10.1080/28338073.2022.2164141)

To link to this article: <https://doi.org/10.1080/28338073.2022.2164141>



© 2023 The Author(s). Published by Informa UK Limited, trading as Taylor & Francis Group.



Published online: 10 Jan 2023.



Submit your article to this journal [↗](#)



Article views: 303



View related articles [↗](#)



View Crossmark data [↗](#)

RESEARCH ARTICLE



## Surrendering to the Process: Innovation in Developing CPD for General Practice

Stense Kromann Vestergaard<sup>a,b</sup>, Ulla Bjerre-Christensen<sup>a</sup>, Anne Mette Morcke<sup>c</sup> and Torsten Risor<sup>b,d,e</sup>

<sup>a</sup>Section of Education, Steno Diabetes Center Copenhagen, Capital Region of Copenhagen, Herlev, Denmark; <sup>b</sup>Section of General Practice, Department of Public Health, Faculty of Health and Medical Science, University of Copenhagen, Copenhagen, Denmark; <sup>c</sup>Centre for Educational Development, Aarhus University, Aarhus, Denmark; <sup>d</sup>Research Unit for General Practice, Department of Public Health, Faculty of Health and Medical Science, University of Copenhagen, Copenhagen, Denmark; <sup>e</sup>Department of Community Medicine, Faculty of Health Sciences, UiT The Arctic University of Norway, Tromsø, Norway

### ABSTRACT

In CME/CPD, a significant part of research is about effectiveness. Attention to the development process can be vital to understand how it impacts progress and results. This study aims to explore an innovative process of applying a combined approach using design-based research, collaborative innovation, and program theory to develop CPD about type 2 diabetes for GPs and clinic nurses with a group of interprofessional stakeholders. In particular, the development process of the combined approach and how it impacts the progress and the activities. We applied two qualitative methods. First, we analysed 159 documents from the development process, and second, eight semi-structured key informant interviews. Data were deductively analysed using 15 predefined elements derived from the combined approach combined with open coding analyses. The analysis showed how the combined approach structured the process. And the interviews broadened our understanding of the relationship between the process and the activities. Four additional themes were constructed from the open coding, including surrender to the process. Surrendering was a central part of the interviewees' participation in the process. The combined approach facilitated this unfamiliar experience of surrender. By supporting participants to surrender, the combined approach enabled an expansion of interprofessional collaboration and the development of innovative activities and learning methods in CPD on type 2 diabetes.

### ARTICLE HISTORY

Received 9 August 2022  
Revised 20 December 2022  
Accepted 26 December 2022

### KEYWORDS

General practice; family medicine; surrender; CPD; course development; innovation

## Introduction

The goal of CPD/CME – continuing professional development and continuing medical education – is often to increase effectiveness, typically measured as improvement in physician performance, knowledge, skills, and attitudes or patient health outcomes [1–3]. This goal does not necessarily direct much attention to innovation and the process of development. Instead, studies highlight different strategies to achieve effectiveness, including knowledge gap tools [4], assessment instruments [5,6], and various teaching and learning methods [7]. The effectiveness strategies have been combined into models with varying foci like planning and assessment [8,9] or stepwise models of design, implementation, and evaluation [7,10]. [2, recommend using models like these to ensure effectiveness.

The quest for an ideal model is accompanied by debate about the appropriateness of adopting a narrow focus on effectiveness – an imperative of proof – as well as debate about the imperative of

simplicity often assumed in medical education – and instead arguing that medical education encompasses complexity, socialisation and relates to the context [11–13].

The development of CPD/CME is often non-linear and messy, with approaches like *design-based research* emphasising iteration and interaction [3,14,15] and *Collaborative innovation* sometimes called co-creation emphasising change, ownership, power dynamics, and trust [16,17]. These foci may also be present in models addressing assessment and effectiveness, but they align poorly with the ideal of a simple, stepwise model. Interestingly, we know different kinds of models work but not how they impact development. If the development of CPD should be conducted outside the imperative of simplicity, examining what goes on during the development process could increase our understanding of the benefits of using different models. However, we find few empirical studies of what happens when one applies said models to CPD/CME development.

**CONTACT** Stense Kromann Vestergaard ✉ [stense.kromann.vestergaard@regionh.dk](mailto:stense.kromann.vestergaard@regionh.dk) Steno Diabetes Center Copenhagen, Education Borgmester Ib Juuls Vej 83, Herlev 2730, Denmark

© 2023 The Author(s). Published by Informa UK Limited, trading as Taylor & Francis Group.

This is an Open Access article distributed under the terms of the Creative Commons Attribution-NonCommercial License (<http://creativecommons.org/licenses/by-nc/4.0/>), which permits unrestricted non-commercial use, distribution, and reproduction in any medium, provided the original work is properly cited.

In 2018, Danish health authorities implemented a new stratification system for the approx. 250.000 persons diagnosed with type 2 diabetes (T2D). This new stratification was anticipated to shift thousands with TD2 from specialised care in hospitals to primary health care. This raised concern about capacity and capability in general practice and led to an innovation project for CPD about T2D for General Practitioners (GPs) and clinic nurses.

A need assessment among GPs in the capital region of Denmark conducted by Steno Diabetes Center Copenhagen as a preparation for the development project (not published) showed the need for updates on diabetes management, needs caused by rapid changes in treatments and medication. These educational needs are not new, and they mirror the challenges primary healthcare professionals face in their daily practice and the management of patients with diabetes internationally [18,19]. Although evidence exists of the effect of CPD for GPs [2], sparse evidence exists of the effect of CPD for GPs and about diabetes in particular [20,21]. This led us to explore our research questions in the context of CPD on diabetes for GPs.

In this study, we aimed to explore the impact of a combined approach of design-based research, collaborative innovation, and program theory to develop CPD/CME on type 2-diabetes directed at general practitioners (GPs) and clinic nurses. In particular, the development process of the combined approach and how it impacts the progress and the activities. We asked two research questions: 1) Did developers apply the combined approach? Furthermore, 2a) How were central elements of the combined approach experienced by the participants? 2b) Including their perception of how the process affected the CPD/CME activities and an exploration of additional themes central to their experiences.

Practice points:

- The process involved in developing CPD/CME activities is rarely studied empirically, leading to a lack of understanding of how it impacts the activities.
- In this study, surrendering to the process was central to the interviewee's experience developing innovative CPD/CME activities.
- Creating developmental processes that support surrender could enhance innovation and increase the variety of learning methods and strategies in CPD/CME.

## Materials and Methods

### *Context: The Combined Approach and the Development Project*

The development project was planned using design-based research as this was the desired approach in the organisation at the time and because it focuses on the interaction between research, development, testing, and implementation [15]. Projects with complex problems and multiple stakeholders combining public and private interests can be challenging to manage [17,22,23]. Such challenges were anticipated, and program theory and collaborative innovation approaches were also introduced to support the structure and guide participation and collaboration, respectively [17,24].

The entire development project was scheduled for 2018–2022 and encompassed six phases. The already mentioned need assessment and a development phase, a pilot testing phase, a re-design phase, an implementation phase, and an anchoring phase.

The research study was conducted in 2020 after the development and pilot testing phases that had been carried out with a project group of eleven individuals. They included GPs, consultation nurses, endocrinologists, and representatives from the GPs' organisations: the department of continued education, the regional organisation for quality in general practice, and Steno Diabetes Center Copenhagen. The project group met nine times from Dec 2018 to June 2020. These meetings facilitated activities including brainstorming, discussion, and prioritisation using verbal, written, and bodily exercises to decide on themes, content, objectives, pedagogic strategies, learning methods, and revision after the pilot test. Four CPD activities for GPs and nurses related to clinic organisation, treatment, patient-centred approach, and interprofessional collaboration for persons with type 2 diabetes were developed (Table 1).

### *Reflectivity*

SKV was both project manager and facilitator throughout the development project and the primary researcher and first author. The fundamental knowledge about the details of the decisions and dynamics throughout the development project and the prior professional relationships with participants affected the research study. It made the recruiting easy because those involved in the development process were curious about exploring the process and keen to participate based on the previously established trust. It also directed the research towards the 15 elements as central to understanding the process. UBC was the project owner and attended as a participant in the

**Table 1.** Themes, objectives and learning methods for the four CPD activities for GPs developed during the process.

Theme	Learning objectives	Learning methods
Organising the clinic	Appropriate organisation of the clinic, including management, division of responsibilities and tasks Defining future learning options for health professionals in the clinic	Mutual introduction to workflow and responsibilities in the clinic Webinar with stepwise introduction to change models and group-based interaction in clinics
Patient-centred approach	Patient-centred approach Individual goal setting in collaboration with persons with T2D Communication models and tools Action plan for compassion fatigue	e-Learning Simulated consultations Story telling Forum play
Medicine and treatment	Overview of treatment options Competence to select treatment option	e-Learning Practice-based small group learning
Cross sectoral collaboration	Shared strategies for transition between sectors for persons with T2D Knowledge of activities and evidence for activities across sectors	Dialogue-based board game

**Table 2.** Deductive coding for the combined approach: elements, definitions and coding rules.

Element	Definition	Coding rules
<b>Design-based research</b>		
Iteration	A process of design, evaluation and re-design of CPD activities related to content, methods, objectives, learning objectives	More than the design phase – must contain some evaluation and assessment with the intent of redesign or redesign based on previous evaluation
Real setting	Development and testing activities in real setting	Can be development or testing in setting where CPD is planned to take place (or the competencies are intended to be implemented)
Theory and practice	Testing and development of both theory and practice	Can be testing or development combined with theory or practice
Mixed methods	Use of a variety of qualitative and quantitative research methods	Both qualitative and quantitative methods must be present
Interaction	Collaboration between developers, trainers, participants and experts	Interaction within multiple group members: talking, listening, sharing thoughts and ideas, participation in task solving, group work (exercises)
<b>Collaborative innovation</b>		
Idea development	Generating ideas through a creative process of brainstorming, formulating and shaping ideas	Can encompass any or all three: brainstorm, formulation or shaping ideas
Idea selection	A process of prioritising and selecting between developed ideas	Must cover selection of ideas. Can be combined with prioritising
Diversity in knowledge	Variation among participants' interests, knowledge, positions, professions, power, point of view, etc.	Participants with diverse professions, organisational connections and perspectives in the project group and at the meetings
Mutual dependency	All participants are dependent on each other for the solution of the problem in focus	Participants share a common professional challenge – all are required to develop and achieve the solution
Face-to-face	Collaborators meet in person	Meetings between collaborators are conducted in person
Equal Power	A space that encourages equality and neutralisation of power positions, without hidden agendas. An equal power space is an ideal to strive for.	Examples of equal power in interactions among collaborators and striving for a space with equal power
<b>Program theory</b>		
Resources	People with the right knowledge, skills and competencies, with allocated time and organisational support	Members of the project group represent the necessary resources to contribute to the development of CPD content and methods, as well as organisation representation to implement and drive the activities
Activities	Events for competence development for general practitioners and health professionals in general practice	CPD activities are developed
Objectives	Milestones and goals, including objectives and learning objectives	Objectives and learning objectives for each CPD activity
Theories and assumptions	Theories and assumptions can be based on practice-based experience describing the expected premises and impact or can be scientifically formulated theories about learning, professional action competence, transfer etc.	Assumptions of relationships between objectives and goal and between activities and objectives (learning objectives)

development project and an interviewee in the research study. During the research study, UBC's prior knowledge of the process assisted interpretation of the

process from a participant perspective, like a kind of informant validation. TR and AMM participated in the research solely.

## Ethics

The Danish Data Protection Agency approved the study, which did not require approval from the Central Denmark Region Committee on Health Research Ethics, according to the Consolidation Act on Research Ethics Review of Health Research Projects. The Steno Diabetes Center Copenhagen and the Department of Public Health, Copenhagen University, approved the project. Interviewees were informed about confidentiality, and interviewee anonymisation was assured.

## Design and Analysis

In order to answer the research questions, the study was conducted using two methods for data collection and two steps of analysis.

First, a document analysis supplemented with key-informant interviews was undertaken to answer whether the combined approach had been applied (research question 1). This data was analysed from a deductive perspective to establish if and how the 15 elements of the approach were evident (Tables 2 and 3) [25]. Secondly, research questions 2a) and 2b) about participant perceptions were studied via key informant interviews. The analysis of how the elements were experienced (2a) was approached in a deductive manner in order to establish all the utterances related to each of the 15 elements [25,26]. Question (2b) of how participants perceived the relationship between the process and the outcomes and further elaboration on their experiences was approached inductively, as we had no former framework or conceptualisation and wished to allow new insights into the relations between the combined approach, progress and activities [25].

Document analysis was based on 15 central elements of the combined approach. The 15 elements were identified *a priori* by the authors, who also created element definitions and coding rules (Table 2). Initial screening yielded 180 text units. Some documents were relevant to more than one analytic element. After a second screening for relevance, 159 text units from 70 unique documents were included. Analysed documents, included project descriptions, summaries, process descriptions, presentations, meeting agendas, and evaluations produced by the project manager and the project group during development and pilot testing. A deductive content analysis was used to categorise text units into the 15 elements [25,26]. Next a combination of simple counting of text units in each of the 15 elements with a qualitative analysis of whether each element had been presented, discussed, and/ or applied during in the development process was applied. This allowed for the identification of the 15 central elements in the documents and gave a picture of the distribution of the text units within the elements. Last the element were pooled in accordance to the three approaches.

SKV initially coded and analysed all documents. TR and the research assistant (MSM) reviewed the coding and analysed parts of the documents. Follow-up discussions resolved coding differences.

In the second step, findings from the document analysis informed the development of a semi-structured interview guide to explore the experience and perceptions of key informants involved in the development process [27]. All eleven project group members who had participated in the developmental process from 2018–2020 were invited by email to participate in interviews; eight agreed – four GPs, two

**Table 3.** Number of documents for each element in the combined approach.

<b>Design Based Research (41)</b>	
Interaction	14
Iteration	13
Theory and practice	8
Mixed methods	4
Real setting	2
<b>Collaborative innovation (52)</b>	
Face-to-face	19
Diversity in knowledge	11
Idea selection	8
Idea development	7
Power free	5
Mutual dependency	2
<b>Theory based intervention (66)</b>	
Theory and assumptions	27
Activities	22
Objectives	10
Resources	7



clinic nurses, and two endocrinologists – and provided informed consent. In-person interviews, lasting 45–60 minutes, were conducted in June 2020 by SKV and MSM. All interviews were audio-recorded, transcribed verbatim, and anonymised (interviewees 1–8) [27]. GPs and consultation nurses were reimbursed for their time.

MSM and SKV transcribed the interviews. SKV conducted the initial transcript coding and analysis. Inductive content analysis augmented the deductive approach, allowing for identifying additional relevant themes [25,26]. MSM and TR reviewed the analysis, and any disagreements were resolved by discussion.

## Results

### **Implementation of the Combined Approach – Findings from the Document Analysis**

Of the five elements of design-based research, three were clearly documented – interaction, iteration, and theory and practice – while mixed methods and developing and testing in real settings were not. All six elements of collaborative innovation were documented to varying degrees. Mutual dependency appeared a few times but was presented, discussed, and applied. Idea development, idea selection, diversity in knowledge, face-to-face, and equal power were all applied but presented and discussed minimally or not at all. Documents reflected diversity among participants in terms of profession, organisational representation, and perspectives, although GPs were intentionally overrepresented. Many documents proved that the process was based on face-to-face meetings, enabling physical exercises and group work as ideas were developed, prioritised, and selected. The use of program theory was most evident in documents; resources, activities, objectives, and theories and assumptions were all presented, discussed, and applied during the process (Table 3).

Because most elements across approaches were evident during the development and pilot testing phases, we assessed that the combined approach had been applied. Allowing us to further study the impact of the process on progress and results shaped by this approach.

### **Experiences of the Process – Finding from the Interviews**

In the following sections, we will present the findings from the key informants' interviews. After a short resume of the general experience of the elements in

the process derived from the deductive analysis, we will turn to the findings of the open coding and, specifically, the theme of surrender, as this was new and had a particularly apparent impact on the process.

The interviewees elaborated on the elements. They mentioned the design-based research elements of interaction, iteration, and development of practice, how they were specific to the project, and how the collaborative innovation elements of equal power, face-to-face, and mutual understanding had an impact on their interprofessional collaboration and idea generation, and selection. The program theory elements of activities, objectives, resources, theories, and assumptions were all reflected in their account of the innovative process. In addition, four new interrelated themes were derived from the interviews: surrender, structure, facilitation, and culture. Among those surrendering caught our interest. As this dynamic is not described in any of the approaches, and it stood out as central to the interviewees' experience of the combined approach.

### **Surrender**

Interviewees described surrendering to the process after the introduction and trying the activities, using metaphors like “walked the plank”, “jumped on the wagon”, and “being blindfolded and led by the hand”. They described how this changed the experience and how they engaged in the process

*... there was acceptance on my part. Even though I cannot see the point right now, I'll jump on the wagon with the expectation that it will reveal itself during the meeting. (Interviewee 5)*

*Then you think, ahh, okay, it is not even the point 'that this should happen fast, then it is ok. Then I surrendered to it being slow-cooking; this is what we do. It is also fun that it is more playful. Instead of being result-oriented, it became more playful, and I liked that. (Interviewee 7)*

### **The Culture Does Not Support Surrender**

As we identified surrender as central in the experience of the process, we started analysing how this experience was related to other elements in the process.

Interviewees described the culture among GPs and nurses as “conservative”, “result-oriented”, and “single-minded”, noting that these characteristics had directed previous CPD activities. In contrast, they described the development process and learning methods as “far out”, “too flower power”, and something they would never have imagined. They identified board games and role-playing activities as things they would have

previously considered unsuitable pedagogical strategies for CPD for GPs.

*well this is far more innovative. A lot of the education we make is far more conservative and rather old-fashioned (Interviewee 7)*

### **Structure and Facilitation Supported Trust and Surrender**

Interviewees described the overall structure of the process as similar to a funnel, with an initial open perspective that slowly narrowed to specific decisions. Firm structuring of the meetings and strict timekeeping added to the experience of structure. Facilitation of meetings was essential for the overall progress and inclusion of all participants, and interviewees experienced it as somewhat rigid but productive:

*If we could, we would probably have directed the process towards something more result-oriented and faster. Then we had made sure to do this and that ... Then we would not have gotten all the steps in place. You forced us to say; this is too early. You said several times, 'we are not there yet', or you forced us not to jump the steps in the process. I think that where we were result-oriented, you were process-oriented. And to make sure you had the right to be process-oriented, you had to be hard. That was entirely fair. It also brought the good thing that we surrendered. This was when the irritation disappeared, and you gained leadership. You gained it over time. You did not have it in the beginning, but you gained it. Because then we surrendered to the process. (Interviewee 7)*

Interviewees recognised that structure was related to the program theory element of activities. They did not specifically mention objectives in their process descriptions but referred to themes and content (learning objectives). Interviewees also considered resources in the project group necessary for subsequent implementation. Interviewees perceived theories and assumptions as part of the process. They were considered appropriate for an innovative development process. Sole reliance on evidence would not enable the innovation of new learning methods and strategies. Interviewee 1 said, "We have made things that we think with our brain and heart will be very good. But we don't know".

### **Face-to-Face Interaction, Equal Power Space, and Mutual Dependency Supported Surrender**

Interviewees found two elements of design-based research central to their experiences of the process. Interactions in the project group mattered for mutual

trust, courage, and a shared understanding among participants and iteration, including the trials of learning methods, supported understanding, and the overall process. As one said:

*It matters. It does something in the room so that you can see the participants. To me, it was a gradual process; in the beginning, everybody was more cautious and came slowly, slowly into the room, and at the beginning of every meeting, we were a bit cautious. We had to warm up a bit and get into it. The warming up went faster and faster for every meeting because we knew what should happen. (Interviewee 4)*

After some initial uncertainty about the roles of individuals, surrender was also supported by experiences of moving towards mutual dependency and an equal-power space. Interviewees emphasised the benefits of meeting face-to-face: reading body language, feeling the discussion dynamics, and minimising disagreements and obstruction.

### **Curiosity and New Kinds of CPD Activities**

While reflecting on the process, most interviewees highlighted how the combined approach led to curiosity, courage, and innovation and influenced the choice of learning methods and strategies. They emphasised that a more familiar process would have resulted in CPD based on standard learning methods. As one informant said:

*It would be something like doing something we had done before. Then we would have been in the same place as we always are ... or now I shouldn't be so negative, but I can tell you, we would have ended up with a less nuanced CPD than we have now. Significantly less. I'm still excited to see in two years if we kicked ass. (Interviewee 2)*

## **Discussion**

### **Principal Findings and Meaning**

Surrendering was an essential experience for interviewees and crucial to the impact and success of the development process. The approach combining design-based research, collaborative innovation, and program theory led to a process of iteration, face-to-face interaction, and the development of practices. The process involved elements of how participants developed and selected activities and of learning objectives based on theories and participants' experiences. Participants represented diverse perspectives and acknowledged a mutual dependency on finding solutions in a space of equal power. They experienced the combined approach as fostering trust, courage, and curiosity,

leading to innovative thinking, choices of new learning methods, pride in the results, and a sense of ownership. Our findings demonstrate that, although all elements were not evident to the same degree, the combination of approaches is valuable for developing CPD, particularly if innovation, rethinking activities, and embracing new ideas are important. The combined approach's structure and facilitation enabled interviewees to surrender to the process, even though they experienced it as radically different from the somewhat conservative, result-oriented, and single-minded culture of CPD for GPs.

### ***Theoretical Sensitisation of Surrender***

The significance of the experience of surrender was not expected and has not been previously described as a function or prerequisite in either design-based research, collaborative innovation, or program theory.

Surrender is often used in the rhetoric of conflict and war in the sense of capitulation and handing over control of life or property. In contrast, here, it is used in the sense of fully joining the process. Not in the sense of defeat or submission but in the sense of stopping trying to prevent or control the process and in the positive sense of participating despite uncertainty. Surrender is not a competency usually assigned to physicians (Royal College of Physicians and Surgeons of Canada n.d.) Indeed, GPs and other healthcare professionals might be more accustomed to patients and students surrendering to them [28]. This may account, at least partly, for why surrendering was a significant experience for interviewees. In addition, if other roles in the competency framework function as “armor for the expert role” [29], surrender might be understood as lowering this professional armour to some degree, allowing GPs to apply competencies in new and more fluid ways.

We found that surrender enabled a free and fluid process and collaboration. Supported by trust, surrender allowed interviewees to be curious and courageous, moving from a familiar results-orientation to embracing a process-oriented focus that allowed the development of innovative learning methods and strategies.

The process created the conditions in which surrender was possible. The structure was important because interviewees experienced how the project manager knew the next steps. This supports the idea of a stepwise model of CPD development, as suggested by Moore [8,9] and Ramani [10]. The structure of program theory [24] pointing to a simple standard model could support surrender. But interestingly, we also found that iteration supported the structure by

assuring the participants in the process, indicating a different impact than a simple stepwise model would have.

Structure and facilitation were intertwined. During facilitation, the persistent focus on the process rather than the results made interviewees surrender to the process. Facilitation and space with power balance, face-to-face meetings, collaboration, and mutual dependency supported interviewees in surrendering. These elements share qualities of complexity and are dependent on understanding and context. Surrender was possible because the development process was shaped by an imperative of understanding and complexity, not by the imperative of proof and simplicity.

### ***Strengths and Limitations***

The project manager was also the primary researcher, and relationships established during the project may have affected the interviews. Interviewees may have suppressed or withheld certain opinions or experiences. Conversely, they may have shared more and different details than they would have with an unfamiliar interviewer. The interviewers sought to re-establish the equality and respect inherent in project group meetings to create a space where interviewees could speak freely, and all experiences were of equal interest and value [30]. We sought to minimise any potential bias through rigorous analyses that peers validated.

By focusing on specific elements of the process, rather than attempting to evaluate the combined approach, we aimed to prompt a discussion of how different approaches impact what CPD activities are developed for GPs. However, our findings are context-specific and thus have a bearing on the transferability [30]. Variations in time, resources, personalities, and degrees of freedom will most likely lead to different processes.

### ***Implications for Future Development and Research***

Surrender was an unexpected yet pivotal finding of our study, but little is known about surrender in relation to being a GP and engagement in CPD development processes. Understanding the dynamics of and preconditions for surrendering to the development process might be helpful in supporting collaboration, and innovation in a culture sometimes critiqued for being rigid and conservative.

With the complexity of diabetes management in mind, applying an innovative and interprofessional approach facilitated the development of new and innovative CPD. The combined approach could inspire the



development of CPD in other diseases with the same kind of complexity and interprofessional dependency in the management. Our findings further suggest discussion is needed about how approaches used impact the developmental processes and CPD products. Do we wish to facilitate development of activities that foster easy assessment, or do we wish to explore approaches like the combined approach in finding shared solutions for complex problems and supporting innovation. A greater understanding of how approaches work could refine both the choice of approach and resulting activities.

## Conclusion

In this study, we found that applying a combined approach of design-based research, collaborative innovation, and program theory enabled innovation and could broaden the scope of CPD learning activities. The combined approach made it possible to address the development of CPD within the complex field of diabetes management. The experiences of surrendering to the process were depicted as central to participation in the process. Features like collaboration, iteration, ownership, and balanced power supported the experience of surrender. Applying a process that enabled participants to surrender led to innovation in learning methods and collaboration.

## Acknowledgments

A huge thanks to the participants in the development project and, in particular, to the interviewees in this study. Thanks to Maria Skou Madsen for assisting in the development process and for contributing to the transcription and analysis

## Disclosure Statement

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

## References

- [1] Allen LM, Palermo C, Armstrong E, et al. Categorising the broad impacts of continuing professional development: a scoping review. *Med Educ*. 2019;53:1087–1099.
- [2] Cervero RM, Gaines JK. The impact of CME on physician performance and patient health outcomes: an updated synthesis of systematic reviews. *J Contin Educ Health Prof*. 2015;35(2):131–138.
- [3] Hogue RJ. 2013. Epistemological Foundations of Educational Design Research. *E-Learn: World Conference on E-Learning in Corporate, Government, Healthcare, and Higher Education* Las Vegas, NV, USA, 1915–1922.
- [4] Wittich CM, Chutka DS, Mauck KF, et al. Perspective: a practical approach to defining professional practice gaps for continuing medical education. *Acad Med*. 2012;87(5):582–585.
- [5] Holmboe ES, Sherbino J, Long DM, et al. The role of assessment in competency-based medical education. *Med Teach*. 2010;32(8):676–682.
- [6] Kumaravel B, Hearn JH, Jahangiri L, et al. A systematic review and taxonomy of tools for evaluating evidence-based medicine teaching in medical education. *Syst Rev*. 2020;9(1). DOI:10.1186/s13643-020-01311-y
- [7] Davis N, Davis D, Bloch R. Continuing medical education: AMEE Education Guide No 35. *Med Teach*. 2008;30:652–666.
- [8] Moore DE, Chappell K, Sherman L, et al. A conceptual framework for planning and assessing learning in continuing education activities designed for clinicians in one profession and/or clinical teams. *Med Teach*. 2018;40(9):904–913.
- [9] Moore DE, Green JS, Gallis HA. Achieving desired results and improved outcomes: integrating planning and assessment throughout learning activities. *J Contin Educ Health Prof*. 2009;29:1–15.
- [10] Ramani S, McMahon GT, Armstrong EG. Continuing professional development to foster behaviour change: from principles to practice in health professions education. *Med Teach*. 2019;41(9):1045–1052.
- [11] Regehr G. It's NOT rocket science: rethinking our metaphors for research in health professions education. *Med Educ*. 2010;44:31–39.
- [12] Whitehead CR, Hodges BD, Austin Z. Captive on a carousel: discourses of 'new' in medical education 1910–2010. *Adv Health Sci Educ*. 2012;18(4):755–768.
- [13] Biesta GJJ, van Braak M. Beyond the Medical Model: thinking differently about Medical Education and Medical Education Research. *Teach Learn Med*. 2020;32(4):449–456.
- [14] Anderson T, Shattuck J. Design-based research: a decade of progress in education research? *Educ Researcher*. 2012;41(1):16–25.
- [15] Dolmans DHJM, Tigelaar D. Building bridges between theory and practice in medical education using a design-based research approach: AMEE Guide No. 60. *Med Teach*. 2012;34(1):1–10.
- [16] Könings KD, Mordang S, Smeenk F, et al. Learner involvement in the co-creation of teaching and learning: AMEE Guide No. 138. *Med Teach*. 2021;43(8):924–936.
- [17] Sørensen E, Torfing J. Enhancing collaborative innovation in the public sector. *Administration Soc*. 2011;43(8):842–868.
- [18] Löffler C, Altiner A, Blumenthal S, et al. Challenges and opportunities for general practice specific CME in Europe – a narrative review of seven countries. *BMC Med Educ*. 2022;22(1):1–11.
- [19] Murray S, Lazure P, Schroter S, et al. International challenges without borders: a descriptive study of family physicians' educational needs in the field of diabetes. *BMC Fam Pract*. 2011;12(1):1–9.
- [20] Thepongsai I, Kirby C, Schattner P, et al. Type 2 diabetes continuing medical education for general

- practitioners: what works? A systematic review. *Diabetic Med.* **2014**;31(12):1488–1497.
- [21] Webster F, Krueger P, MacDonald H, et al. A scoping review of medical education research in family medicine. *BMC Med Educ.* **2015**;15(1):1–6.
- [22] Moore GF, Audrey S, Barker M, et al. Process evaluation of complex interventions: medical Research Council guidance. *BMJ.* **2015**;350:1–7. doi:[10.1136/bmj.h1258](https://doi.org/10.1136/bmj.h1258).
- [23] Skivington K, Matthews L, Simpson SA, et al. A new framework for developing and evaluating complex interventions: update of Medical Research Council guidance. *BMJ.* **2021**;374(2018):1–11.
- [24] Rogers PJ, Petrosino A, Huebner TA, et al. Program theory evaluation: practice, promise, and problems. *New Directions Eval.* **2000**;2000(87):5–13.
- [25] Elo S, Kyngäs H. The qualitative content analysis process. *J Adv Nurs.* **2008**;62(1):107–115.
- [26] Hsieh HF, Shannon SE. Three approaches to qualitative content analysis. *Qual Health Res.* **2005**;15(9):1277–1288.
- [27] Brinkmann S, Kvale S. Interviews: learning the craft of qualitative research interviewing. **2015**.
- [28] Holmberg M, Forslund K, Wahlberg AC, et al. To surrender in dependence of another: the relationship with the ambulance clinicians as experienced by patients. *Scand J Caring Sci.* **2014**;28(3):544–551.
- [29] Whitehead CR, Austin Z, Hodges BD. Flower power: the armoured expert in the CanMEDS competency framework? *Adv Health Sci Educ.* **2011**;16(5):681–694.
- [30] Malterud K. Qualitative research: standards, challenges, and guidelines. *Lancet.* **2001**;358(9280):483–488.