

“I have All the Feelings”: Navigating the Emotional and Practical Challenges of Research Method Innovation in Entrepreneurship Education

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Abstract

Research method innovation has profound societal impacts, seen in social media, Covid-19 vaccines, and global education assessments. Yet, many academics lag in adopting new methods. What hinders their engagement? Why is academia, often seen as an innovation hub, resistant when it comes to emerging methods? To explore this paradox, a three-year case study examined challenges in adopting Designed Action Sampling (DAS), an innovative research method in entrepreneurship education. AI-powered virtual ethnography tracked 110 participants in a training program. They wanted to learn DAS to improve their teaching, structure their school improvement, network with peers or evaluate student learning.

The analysis identified 28 challenges, including concerns about time, complexity, engaging peers, and integrating DAS into existing work. Participants also struggled with formulating research questions, designing tasks, and analyzing data. A broader Academia–Practice gap emerged, suggesting the need to reassess academic incentives for method innovation and improve training approaches. This study is among the first to focus explicitly on challenges in research method innovation, contributing a challenge framework to the field.

"Academics are the purveyors of knowledge that is almost up to date."

Richard Feynman

1. Introduction

Research is the practice of collecting and analyzing empirical data to find new answers to key questions (Phillips & Shaw, 2011; Saunders et al., 2019). It is a practice found in academic institutions and also in working life more broadly (Hesse-Biber & Leavy, 2010, p.2). Innovation in how research is done is often labeled *research method innovation* (RMI), and is an under-researched topic (Lê & Schmid, 2022). RMI is fundamentally about creating new ways of doing research and making other people adopt them (Wiles et al., 2011).

RMI can drive impactful change across diverse fields, in positive as well as in negative ways. Consider the impact of rapid vaccine development during Covid-19, the impact of large-scale educational assessment studies on everyday teaching practices, or the impact of social media platforms on the global political landscape. Pioneering research methods not only deepen our understanding of complex human and biological systems, they also often come with profound societal impact. Lives are saved, students are ranked, democracies are shaped, wars are swayed.

Practitioners are leading RMI in society, supported by many former academics who joined the commercial sector (Hine, 2015; Jurowetzki et al., 2021). This has left the academic world lagging behind the world of practice in adopting innovative research methods, leaving scholars *almost* up-to-date on contemporary research methods. What is stalling the academic world from harnessing the power

of innovation in how they do their research? How to make sense of the paradox inherent in universities being the laggards of emerging research methods? Little is known about this conundrum, since few, if any, studies have focused on challenges related to innovation in research methodology.

In the academic world, qualitative method innovations such as ethnographic participant observation (1920s), grounded theory procedures (1960s), case study approaches (1970s) and software-assisted interview analysis (1980s) have been used to produce vast insights around why humans behave the way they do in various social settings (Staller et al., 2008). Quantitative methods have undergone a similarly steep and often technology-supported innovation curve. Randomized controlled trials (1940s) have allowed for remarkable progress in medicine (Fuchs et al., 2000) and survey analysis software such as SPSS (1960s) have democratized broad access to a complicated statistical toolbox (Staller et al., 2008).

In the world of practice, a powerful example of RMI is social media platforms built for global collection and analysis of big data. Operated by entrepreneurs turned theorists (cf. Felin & Zenger, 2009) these platforms have been used to help paying customers analyze massive datasets harvested from billions of ordinary citizens worldwide. This not only helps marketing managers reach new customers but has also helped politicians win elections and dictators to wage war (Foer, 2017; Örténblad, 2020). In a marginally more benign example, the Organisation for Economic Co-operation and Development (OECD) invented the PISA study of educational effectiveness, which has “wrecked havoc in the world of education” through fueling misguided educational policy (Zhao, 2020, p.257). In our increasingly algorithmic society, RMI has become big and at times ruthless business, disrupting sectors such as education, marketing, recruitment, insurance, banking and law enforcement through methodologies fittingly termed *weapons of math destruction* (O’Neil, 2016). In a world where data is the new oil, RMI is an increasingly common path to wealth and power. But there are genuinely good examples of RMI. Recently vaccines against Covid-19 were quickly brought to humanity’s rescue through remarkable RMI efforts in rapid clinical trials and AI-powered analysis (Liu et al., 2022).

There is scant research on the micro processes underpinning RMI (Xenitidou & Gilbert, 2009). Very few RMI cases have been empirically investigated in-depth (Lê & Schmid, 2022). Challenges and failures are rarely described (Wiles et al., 2011). Therefore, this study aims to extract micro-level challenges of RMI, drawing on a typical case of RMI in entrepreneurship education. 28 challenges experienced by 110 participants who self-selected into a one-year training programme in a new research method were extracted through an AI-powered virtual ethnography approach (Hine, 2015). Nine different cohorts comprising 80 practitioners and 30 researchers were followed longitudinally for a year by asking them to reflect repeatedly upon their experiences of RMI in a digital reflection platform. Over three years, 28 challenges were described in detail through 1,200 written participant reflections comprising around 150,000 words which were subsequently qualitatively analyzed with AI.

The innovative research method studied here is called *Designed Action Sampling* (DAS). It is a method that lets educational researchers and educators together co-create (“*Design*”), practically test (“*take Action*”), reflect upon (“*Sample* the impact”) and refine classroom interventions in real time (Lackéus & Sävetun, 2023). It is an iterative and software-assisted action research approach that helps build active and collaborative teacher communities of practice who conduct clinical research on their students-as-clients. Teachers and researchers are supported by a scientific social media platform called Loopme, tailored for the purpose (Lackéus, 2020a). Since its inception in 2012, DAS methodology has been used by around 40 scholars, 4,000 teachers and 40,000 students to produce big and thick datasets of action-reflection data, helping them assess the impact of a broad variety of phenomena. DAS is thus a cross-disciplinary amalgam of a rapid clinical trial approach, a digital social media platform tailored for research purposes and a large-scale educational assessment methodology. It combines action research with design science, experience sampling and critical realism (Lackéus & Sävetun, 2023). It is also an example of RMI being adopted primarily by practitioners (99%) and thus far only marginally by scholars (1%).

DAS is a case comprising many typical RMI characteristics, such as a decade-long development journey, a published handbook, availability of training, presence of innovators who promote the method and discernible uptake by others evidenced by many citations and around 20 third party publications (cf. Wiles et al., 2013; Wiles et al., 2011). As a case, it illuminates many boundary-spanning characteristics of RMI, such as blurring the border between classical academic research and lay action research (Nind et al., 2013; Wiles et al., 2013). It also illustrates the ability of RMI to democratize research through making formerly complex and time-consuming research approaches broadly available to students, practitioners and other lay citizens (Hesse-Biber & Leavy, 2010).

This article proceeds as follows. First, extant literature on RMI and DAS is reviewed. Then follows a method section outlining the virtual ethnography approach used to gather data, the DAS training community studied here and the AI-powered data analysis. Findings illustrate how it felt for the 110 participants to learn and apply an innovative research method, as well as the 28 specific challenges they then encountered. Finally, these findings are discussed, aiming to generalize and draw implications and conclusions for RMI more broadly.

2. Literature review

2.1 Research Method Innovation (RMI)

Innovation in research methods is fundamentally about daring to push the boundaries of how we generate new discoveries in the world (Locke et al., 2008). It is also about getting others to join in on a creative and risky journey outside *their* methodological *comfort zone*, asking them to take a more active and flexible role (Staller et al., 2008). RMI is thus as much a personal journey as a scholarly one. It requires thick skin to become an outsider who challenges one's home discipline by reimagining our established tools of discovery, by asking "new research questions with unfamiliar research techniques" (Hesse-Biber & Leavy, 2010, p.4-5).

Innovations span the three main areas of data collection, data analysis and presentation of results (Lê & Schmid, 2022). They can be incremental or radical, going from minor adaptations to fundamentally new methods (Wiles et al., 2011). Initiatives often span disciplinary boundaries, take place both within and outside academia, and expand or blend established methods (Xenitidou & Gilbert, 2009). A common trigger to RMI is technological innovation, such as internet technology, DNA technology or new software (Hesse-Biber & Leavy, 2010).

A recent multiple case study (Wiles et al., 2013) identified five different themes present across typical RMI cases; 1) The development process of how and why the innovation came about, 2) the innovation's distinctiveness in comparison to established methods, 3) contributions of the innovation in terms of benefits, 4) the acceptance process in various communities, and 5) future developments. These five themes will be used below to introduce DAS. This study then focuses on the fourth theme; challenges in the acceptance process of an innovative research method.

2.1.1 Why innovate research methods?

Reasons for RMI can be sorted into means-based and ends-based factors. The most important end goal of RMI is to generate new knowledge and insights about the world we live in (Hesse-Biber & Leavy, 2010). A deeper theoretical or practical understanding of nature and society can then help us humans as we try to solve important problems and create new solutions. RMI has shown a strong capability to generate both high-impact publications and high practitioner relevance through its strong ability to push a field forward in creative and transformative ways (Lê & Schmid, 2022; Phillips & Shaw, 2011). Method diversity can open up for new ways of seeing things (Bansal et al., 2018). However, there are also many means-based reasons that can trigger RMI. Most of them fall into the three categories of practical, ethical and technological reasons.

Practical reasons are often about perceived shortcomings of our established method toolbox; our means for doing research. It can be about how to improve participant recruitment, quality of responses, engagement among participants, data management or analysis procedures (Wiles et al., 2011). This is often a mundane and incremental repair and maintenance work which has always been a natural part of doing research (Lê & Schmid, 2022). The more radical innovations in this category often start out with a novel theoretical or visual arts-based perspective which then impacts method design more profoundly.

Ethical reasons can be about a desire to give voice to hidden or marginalized populations, to do better justice to the complexity of real-world matters, to be a more responsible researcher who contributes to society, or to democratize research methods and make them available more broadly, sometimes also to lay practitioners (Nind et al., 2013). This positions RMI as a moral act and an attempt to use the power position inherent in being a researcher in a more ethically sound way.

Technological reasons often take their starting point in the digital age we live in. Computers have impacted every step of many research processes, from data collection to data analysis and presentation of results (Fielding, 2008). Practical examples include netnography (Kozinets, 2002), biometric sensor research (Lohmeyer & Meboldt, 2016) and geographic information system (GIS) research (Steinberg & Steinberg, 2005). Acting on new technological affordances to improve research often triggers ethical dilemmas around privacy, consent, data ownership and opt-out policies (Kennedy et al., 2015; Shah et al., 2015).

2.1.2 Critiques of RMI

Any innovation effort is bound to be criticized by conservative people and organisations. This is the case also for RMI. A broad variety of critical perspectives on innovation are discussed in extant literature on RMI. Conservative established scholars often critique method innovators for threatening established research practices (Wiles et al., 2013). These innovators' allegedly superficial, unfinished and risky experiments spend the available funding at the expense of more established work (Wiles et al., 2011). It has been claimed that evangelist marketing efforts around trendy innovation fads contain much overpromise and self-promotion, bordering to shallow entertainment (Travers, 2009).

Hesse-Biber and Leavy (2010) connect such conservatism to a variety of historical and epistemological reasons for attempting to protect academic traditions. They discuss the strong historical preference for quantitative methods representing the "hard" sciences, often anchored in old epistemological truths around what counts as knowledge, who creates new knowledge, which studies get funded, and how they should be evaluated. RMI can thus challenge many scholars' personal conceptions and their academic departmental cultures around knowledge, being more comfortable with conventional ways of knowing and judging validity and reliability. Also qualitative scholars can express such fears, seeing a risk of RMI watering down established qualitative methods now that they have finally reached legitimacy.

The critique against unfinished and risky experiments that overpromise is a classic innovation critique, illustrating the "chasm" between innovators and early adopters on one side, and the sceptical majority on the other side (Moore, 1999). This could explain the slow uptake of many innovative research methods in the broader academic community (Wiles et al., 2011). Remedial advice include communicating a new method clearly, offering "bite-size" training, and maintaining an "audit trail" around what researchers did in studies so that sceptics can make up their own mind around trustworthiness (Lê & Schmid, 2022). Conservatives can also feel diminished and intimidated by innovators, making them feel like outdated "old hat" laggards, when all they want is to preserve and protect what has already been achieved in academia (Travers, 2009; Wiles et al., 2011). Sceptics are, after all, often left to "clean up" the mess after failing innovators have left the scene (Moore, 1999, p.42).

2.2 Entrepreneurship education (EE) and research method innovation (RMI)

The case studied here is anchored in the academic field of *entrepreneurship education* (EE). These scholars investigate how to teach and learn entrepreneurship. It is an elusive and interdisciplinary field that tries to capture how teachers and learners develop the often tacit knowledge and skills required to run a start-up (business or social focused) or lead an innovative initiative inside an established organisation (intrapreneurship). A broader interpretation is also emerging in EE where focus is on leading an entrepreneurial life more in general (Blenker et al., 2012). Grappling with the vexing question(s) “Can entrepreneurship (or being entrepreneurial) be taught?” (Lautenschläger & Haase, 2011), this academic field is characterized by significant methodological challenges and thus also by many different attempts to innovate research methods (e.g., Higgins et al., 2023; Neergaard & Ulhøi, 2007).

EE scholars have for decades tried to measure the process of becoming more entrepreneurial. In line with the statement “we cannot improve at scale what we cannot measure” (Bryk et al., 2015), the most common and cited research in EE is assessment studies (Blenker et al., 2014; Tiberius & Weyland, 2022). There are also numerous attempts to use technology to construct new assessment tools, such as *Entrepreneur Profiler*, *Grit Scale*, *TOP360*, *Youthpass*, *Entrepreneurial Skills Pass*, *Loopme* and *Octoskills* (Bacigalupo et al., 2016). A conclusion from these attempts is that a good measurement tool motivates participants, collects high quality and preferably longitudinal data, is connected to research, is easy to use and can produce new knowledge about entrepreneurship as a phenomenon (Ruskovaara & Pihkala, 2016).

There are also many attempts to innovate EE research in less technological ways, such as through study of visuals (Ellborg, 2023), diary entries (Hägg, 2018), artifacts (Berglund et al., 2020), register data (Aadland, 2023) or power structures (Brentnall et al., 2023), or through using mixed methods (Derre, 2023), critical perspectives (Berglund & Verduijn, 2018), design approaches (Baggen et al., 2021), a practice lens (Parkkari & Kohtakangas, 2018) or other novel philosophical approaches (Brentnall et al., 2018; Johannisson, 2023). The case we now come to is thus embedded in a vibrant community of RMI.

3 Designed Action Sampling (DAS)

This article leans on an embedded case study design (Yin, 2009), where the main case DAS is a typical research method innovation. The sub-unit of analysis consists of 110 individuals participating in a training community in DAS. Before we proceed to the study of challenges experienced by these individuals, the single case will first be briefly introduced by addressing what DAS is, how it came about, its distinctive contribution, how it has been adopted so far and future developments.

A DAS study consists of five steps, which are described more in-depth elsewhere (Lackéus, 2021; Lackéus & Sävetun, 2023):

1. **Design.** A team of educational developers such as teachers, principals or researchers design a collection of action-oriented pedagogical tasks for many other teachers to try out in their teaching. This step is about putting words on actions that teachers can try out in their classrooms, which might then help students learn more. A task collection typically consists of 5-15 action tasks, all covering a specified focus area identified as important in a school development effort. The design step builds on design science research (Dresch et al., 2015).
2. **Action.** The larger group of teachers, often around 10-50 teachers, carries out these pedagogical tasks in their classrooms together with their students, to see how it works for them. Each task is regarded as a hypothesis and a social experiment, hopefully leading to desirable effects on students. The action step builds on clinical action research (Schein, 1993).
3. **Sampling.** After each task is carried out, each teacher uses a dedicated mini-questionnaire to write a micro-reflection around their experience of this task, how it went, what effects they saw and why. Teachers also quantify their experience and any outcomes they saw through an

emotion-based likert scale and through picking one or more predefined tags (i.e., hashtags). This step builds on experience sampling methodology (Larson & Csikszentmihalyi, 1983).

4. **Discussion.** The educational developers read and comment upon the 50-750 micro-reflections submitted to them from the 10-50 teachers upon the 5-15 action tasks. This is done longitudinally and in real-time as the study unfolds. To carry out this step, a digital tool tailored for DAS has been developed, called Loopme (see www.loopme.io). Giving feedback to each participant in real-time through a chat function serves multiple purposes; participant motivation, dialogic learning, relationship-building and data immersion. It helps drill deep into what happens in the classroom, and builds on critical realism (Ylikoski, 2019).
5. **Analysis.** All reflections, quantifications and comments are summarized, anonymized and collectively analyzed together with all participants. This is done through an analysis meeting where the 10-50 participants first read a compiled synthesis of the data collected, and then discuss what this means to them and how to proceed.

The above five steps are part of a circular flow where the result from step 5 is fed into next cycle of design work, action-taking, sampling, discussion and analysis of impact. This leans on pragmatism, stipulating that what “works” in education needs to be determined case-by-case by the teachers themselves (Biesta & Burbules, 2003).

In the above five-step description, teachers are the ones carrying out the designed action tasks. However, DAS can also be used with students as participants, often to facilitate action-based education. Students are given action tasks that they carry out and reflect upon afterwards. This is a common use of DAS among vocational teachers, who use it to follow and assess students when on work placements. DAS has also been used with other participant types such as school leaders, coffee shop owners and employees in industry, healthcare and social services.

To make the above circular process practically doable, the digital support tool Loopme was developed by researchers at Chalmers University of Technology. It consists of a task management section, a digital mini-questionnaire with micro-reflection and quantification for each task, a comment thread associated to each submitted form, a social media flow for quick reading and commenting upon submitted forms, and analysis functions that automate much of the synthesis needed in step 5. All these functions are described in-depth in a published book chapter where Loopme is categorized as a *scientific social media* (SSM) platform, and contrasted to commercial social media platforms and learning management systems (Lackéus, 2020a). A video describing DAS in relation to Loopme is available at the author’s research blog www.vcplist.com/das.

3.1 How and why DAS came about

The first DAS study was carried out in 2012 in an impact study of how action-based entrepreneurship education develops students’ entrepreneurial competencies (Lackéus, 2014). As a response to shortcomings in established thought- and action-centric survey research methodologies, an emotion-based and mixed research strategy was used. A mobile survey app was built to longitudinally collect 556 reflections from 14 respondents around their emotionally charged events experienced during nine months of their Master’s programme in entrepreneurship. These events were discussed in multiple follow-up interviews, and analyzed through a grounded theory approach.

In the decade that followed, DAS evolved step by step into its current form through many different studies carried out on all levels of education, most of which were outside entrepreneurship education. A summary of six of these studies was published in 2020 (Lackéus, 2020b), and six other studies were summarized by Lackéus and Sävetun (2023). A spin-out social venture was created in 2014 by the core research team, taking care of further development of Loopme. This allowed the research instrument to evolve significantly, adding many different functions deemed crucial to make DAS work well in practice. The digital development journey is described in considerable detail in Lackéus (2020a).

3.2 Distinctiveness and contributions of DAS

Through DAS, large numbers of micro-reflections are collected longitudinally. Each reflection and quantification is connected to an action having been carried out by a participant in the real world. This makes the resulting data both big and thick, combining the benefits of “qualitative and quantitative, numerical and interpretative” data types (Weltevrede, 2016, p.17). It allows for triangulation in a “mixture of interpretative and calculative forms of analysis” (Marres, 2017, p.35). It also makes the resulting dataset causally rich, facilitating a search for cause-effect patterns “between independent variables (i.e., behavioral tasks) and dependent variables (i.e., emotions, tags and written reflections)” (Lackéus, 2020a, p.211). Quantitative patterns identified in the numerical analysis can be explored qualitatively to generate micro-level causal explanations for various patterns observed.

DAS combines the deep understanding and context sensitivity of interviews with the large-scale quantifiability and low-cost collection of survey responses (Lackéus, 2020a, p.231). In contrast to interviews and surveys, DAS is also inherently longitudinal, just like social media platforms integrate longitudinally into the everyday lives of people who use them. DAS draws on experience sampling methodology (ESM) for data collection. This is a widely used method conceived in the 1970s, where short longitudinal mini-surveys were used to capture people’s experiences in their natural environment (Stone et al., 2003). ESM yields datasets with high ecological validity, since a continuous flow of everyday experiences is captured with high precision (Hektner et al., 2007).

3.3 The acceptance process of DAS in various communities

Teachers in primary and secondary schools have been relatively quick to adopt DAS. The largest community of DAS users started to grow in 2015, and today consists of around 2,200 vocational teachers at some 200 secondary schools in Sweden, using DAS and Loopme to follow around 16,000 students of age 15-18 when being out on practicums and work placements. In 2017, school developers started to use DAS to structure their management and assessment of school development efforts. Currently, around 1,500 teachers in some 100 preschools, primary schools and secondary schools use DAS around a wide variety of pedagogical development issues such as cooperative learning, schooling in segregated areas, language development and school leadership. DAS has helped these practitioners make learning and development more visible, both among students and among teacher colleagues. A research method innovation has impacted their everyday working life in significant ways. However, this was not an easy journey. In the early stages, resistance was frequent among teachers, claiming for example that DAS was too expensive, too complex and too experimental, and that existing ways of working were fine for them. Today, as more and more benefits have become evident and as the methodology and the digital support tool are more mature, teacher resistance has now largely vanished.

Scholars have been slower to adopt DAS, but adoption has recently been picking up speed. In addition to the author’s twelve publications, there are currently eighteen third-party publications involving DAS from 2020 and onwards. Studies have been conducted on teachers developing their students’ entrepreneurial competencies (Grigg, 2020; Oksanen et al., 2021), students using AI to train their English skills (Ericsson, 2023; Ericsson & Johansson, 2023; Ericsson et al., 2024), social service workers implementing organizational changes (Tjulin et al., 2024; Tjulin & Klockmo, 2023; Tjulin et al., 2023), healthcare professionals implementing organizational changes (Boström, 2025), teachers designing new ways to implement and assess EE (Derre, 2023), students carrying out micro-challenges (Westerberg, 2022), students working with live casework in EE (Lindahl Thomassen & Ramsgaard, 2022; Nielsen et al., 2024), students developing their entrepreneurial mindset (Larsen, 2023; Larsen & Neergaard, 2024), students on work placements in a music programme (McCabe & Phillips, 2022), entrepreneurs participating in an exchange programme (McCallum et al., 2020), and coffee shop owners learning how to work with composting (Morland & Lever, 2024). These studies were all carried out prior to the launch of the DAS training programme. Grappling with how to use DAS has been a challenge for many of these scholars, and has often led to less than optimal configurations and uses.

3.4 Future developments of DAS

DAS users have proposed many improvements and next steps. Practitioners have primarily wished for new functions in the research tool Loopme, such as AI based analysis functions that increase visibility and save time, and community functions that help disseminate, discuss and replicate results. Based on occasional low engagement levels, scholars have discussed the need for study participants to set aside more time for reflection (Tjulin et al., 2023), to write longer reflections (Larsen & Neergaard, 2024) and to further investigate benefits and potential added incentives for participants (Boström, 2025). Scholars have also called for DAS to be used more for triggering action and reflection among students (Ericsson, 2023; Westerberg, 2022) and practitioners (Morland & Lever, 2024). Reflection data could also be triangulated with control variables such as gender, personality traits and prior experiences (Derre, 2023). However, all of these wishes are minor compared to the importance of training, to which we now turn. Training in DAS has been requested by many practitioners and scholars (e.g. Tjulin et al., 2023).

4. Methodology

This section describes the steps taken to study challenges in RMI, as experienced by participants in an online 1-year training programme in DAS. They were followed over a 3-year period from 2022-2025 with nine cohorts comprising 110 participants. An initial description of the research approach, the training programme and its participants is followed by an outline of how data were collected and analyzed.

4.1 Virtual ethnography

This study is anchored in Hine's (2015; 2000) description of technology-enabled *virtual ethnography*, using traditional ethnographic methods adapted to the study of online communities over prolonged periods of time. In virtual ethnography, empirical data are collected in traditional ways through observations, field notes and interviews, but also through social media interactions, emails, documents, survey responses, activity logs, microblogs and other digital data types.

A virtual field site is rarely a geographic space, but can instead be for example a cultural unit, a phenomenon, a network or a community spread out over multiple technological platforms (Hine, 2015). The virtual field site studied here is an emerging national (Swedish participants) and global (English participants) community of practice in DAS. Each cohort in this community met online for a year through regular Zoom meetings. Participants were invited to sense-make and discuss their activities and insights in the Loopme platform, where they submitted reflections and commented on each other's reflections in a social media-like way. This makes Loopme an example of what Hine (2015, p.69) terms "recording devices introduced by the ethnographer" which help the researcher "see the experience through the eyes of the participant" and also help "sustain a connection between researcher and participants" (ibid, p.73). In Loopme, the author could write comments and follow-up questions to the participants on their reflections, representing a virtual version of traditional field notes and interviews.

The community studied here was conceived and created by the author through inviting practitioners and scholars to sign up for a training programme in DAS. Hine (2015, p.83) identifies this as "the agency of the ethnographer in constructing the field", a common practice in virtual ethnography. In such agentic situations it is important to provide an autoethnographic narrative of the process alongside the accounts from participants, albeit with care taken not to "stray into self-indulgence or narcissism" (ibid).

4.2 The training programme in Designed Action Sampling

The training programme studied here included six digital 3,5-hour workshops spread out over two semesters, focusing on research question formulation (session 1), design of action-reflection tasks (session 2-3), data collection and analysis (session 4-5) and a final presentation of all DAS studies conducted or designed by participants (session 6). Each session was designed around a mix of theory and practice through mini-lectures, examples, group discussions, practical work sessions in silence and

participant presentations. The main literature was a handbook on DAS (Lackéus, 2021), complemented with additional literature (Chan, 2022; Hedström & Ylikoski, 2010; Hektner et al., 2007; Lackéus, 2020a, 2023, 2024; Lackéus & Sävetun, 2023; Neale, 2018; Ruona, 2005; Ylikoski, 2019). A strong emphasis was placed on community-building, fostering collaboration among change-makers mostly in education, but also in social work, healthcare and industry.

Written reflections played a key role in the programme. Participants were asked to reflect in Loopme upon each step they took, and also upon reading the handbook. All reflections were made visible to all participants in each cohort, and they were encouraged to comment upon each other's reflections. The 21 reflective tasks assigned to the participants included "About you and your expectations", "Watch a video about DAS", "Reflect after the session", "In-between meeting with your group", "Solicit feedback on your content", "Your gains from this training", "Propose improvements", "Our future together with DAS", as well as nine chapter reflections on the DAS handbook.

4.3 The 110 participants and the data collected from them

Of the nine cohorts, seven consisted of Swedish participants (80) and two consisted of international participants (30) from Denmark, Norway, Germany, Netherlands, Belgium, the United Kingdom, France, Ireland, Morocco, Brazil, Canada, Australia and Japan. Profession-wise, the 110 participants were from preschools (3), primary/secondary schools (58), higher/adult education (35) and other sectors (14) including construction (1), consultancy (3), incubators (2), public media (2), automotive (1), recruitment (2) and healthcare (3). 80 of them were practitioners and 30 were scholars. Reflections submitted around their expectations indicated many different reasons for joining the training programme. Many wanted to learn DAS to improve their teaching (41), to structure their improvement work scientifically (37), to network with like-minded peers (30), to develop their organisation (27), to evaluate impact on student learning (24), and to apply DAS in their research (16). Six participants mentioned joining the DAS training to learn more about the Loopme tool.

Each cohort generated on average 134 reflections, resulting in a total of 1200 reflections being submitted, consisting of ~150,000 words or 332 pages of text. Most of these reflections were commented upon by the author and/or by participants, generating an additional ~65,000 words in comments. Eight of the sessions were video recorded, generating a total of ~25 hours of video material. Many participants completed a 1-page template describing their planned research study, either outlining how their study was designed or including also preliminary results from initiated data collection, resulting in a total of ~80 study descriptions. Thousands of emails were also exchanged. The final sessions generated slide presentations outlining key insights and results from many of the participants, resulting in ~150 slides. Written consent was granted from all participants to use and analyze these data for the study reported here. The author was also invited to follow the flow of reflections in many DAS studies initiated by participants, but these data were not part of the consent asked for, and have thus not been analyzed here.

4.4 Data analysis through AI and auto-ethnography

To identify challenges, all data types were analyzed searching for challenges in RMI. The data type which was by far the most salient in this respect was the written reflections in Loopme. These reflections were therefore submitted to a GDPR-safe AI engine in Frankfurt (Claude Sonnet 3.5), hosted by Amazon in a safe enterprise server environment, *not* using data submitted for training of the AI model. The AI engine was repeatedly asked to extract challenges from a Word file containing all free text, resulting in so-called "mega-tables". After extensive trial-and-error, the prompt that worked best in this regard was (first section below is the search instruction, second section is the formatting):

110 participants in a training about a new research method, called Designed Action Sampling, took part in a training. During this training, they reflected around key worries, challenges and problems experienced in the training, see the attached Word file. Please identify twentyfive main patterns in their individual written reflections, focusing on these worries, challenges and problems.

For each of the twentyfive patterns you identify, provide a fitting emoji, a heading with 3-5 words, a digit indicating exactly how many times this pattern was found in the reflections, a summary consisting of 4 sentences written like a researcher, and two direct verbatim quotes from the attached data that illustrate this main pattern. Put quotation marks around the quotes and parantheses around the digits that indicate number of times a pattern was found. Sort the twentyfive patterns according to the digit indicating frequency of use. Give a strictly fact based answer. Give answers in the form of a table with five columns; emoji, heading including the digit within parantheses, summary, quote 1, quote 2. Please double check the digit indicating the number of times a pattern was identified.

This search job needed to be split into two due to limitations in how much data could be processed at a time (200,000 “tokens”). Therefore, the English reflections from mostly scholars (77%) was analyzed separately from the Swedish reflections written mostly by practitioners (91%). This helped distinguish between practitioner challenges and academic challenges. Table 1 below was compiled manually and carefully from three different mega-tables produced by the AI engine, and consisted of 27 challenge types, later expanded to 28, see below. All challenge types were scrutinized and carefully refined based on the author’s auto-ethnographic deep understanding of the three-year training process.

Next, the AI engine was asked to generate two mega-tables for each of the 27 challenges, one for English reflections and one for Swedish reflections, using a prompt that looked like this (an example search instruction given here, the formatting section was very similar to above):

*30 participants in a training about a new research method, called Designed Action Sampling, took part in a training. During this training, they reflected in English around a broad variety of experiences in the training, see the attached Word file. One of the topics covered in these reflections, in various places, is this: **“Challenges in sustaining consistent usage of DAS methodology and long-term changes in practice. Not losing momentum or reverting to old habits”**. Please identify five main sub-topics in their individual written reflections, focusing on the above topic.*

The last 14 themes in Table 1 were so rare in the data that the AI engine could not meaningfully produce a mega-table, so then the AI engine was instead asked to extract quotes, using a prompt like this:

*80 participants in a training about a new research method, called Designed Action Sampling (DAS), took part in a training. During this training, they reflected in Swedish around a broad variety of experiences in the training, see the attached Word file. One of the topics covered in these reflections, in various places, is this: **“Ethical challenges: Impact on participants, power dynamics, coercion and undue influence”**. Please identify twenty illustrative verbatim quotes word-by-word, in their individual written reflections, focusing on the above topic. Give a strictly fact based answer. Give answers in the form of a bullet list, with one bullet per quote, followed by a translation in to English of that same quote. Put quotation marks around quotes.*

A findings section was written up based on mega-tables and quotes, complemented by insights gained from auto-ethnographic deep understanding of the process and manual word searches in reflections. All quotes were double-checked for AI hallucinations, so that they in fact existed in the primary data. Since the creative temperature of the AI engine had been set to zero, no occurrence of AI making quotes up was identified. After the write-up of findings, a thematic grouping was compiled as Figure 1, also adding the challenges identified in literature on RMI. To double-check challenges and categorizations, a manual read-through of all 299 reflections (25%) tagged with “Problematic” or “Difficult” was conducted. One more challenge – “Management support” was then identified and added to Table 1 and Figure 1.

5. Findings

5.1 Feelings of ambivalence among participants

A strength of virtual ethnography is that it helps researchers understand “how it feels to be a part of this setting” (Hine, 2015, p.160). The reflections from participants allowed for precisely this, illustrating a wide variety of strong feelings associated to the DAS training, both positive and negative. Enthusiasm,

joy of learning and curiosity were mixed with confusion, stress, uncertainty and worry. Participants expressed ambivalence when struggling to reconcile this:

"It sounds so 'easy' and obvious when [author] explains and shows, but it feels much harder to grasp how this will work in practice."

Overall my head is now a whirl of new angles, new thoughts the urge to read and write more about my own research. This has been really thought provoking for me.

In trying to put a 'feeling' to this, I wanted there to be an emoji or a tag somewhere between neutral and somewhat happy to describe the sense of satisfaction of having endured difficulty while also suffering from the inevitable headache that it left me with. What is that emoji?

I was struck immediately that this was both very familiar and also strange. It seems so obvious that a scientific (experimental) method is needed but I am so used to scientific meaning 'quantitative' that it felt uncomfortable. ... I also have nervous excitement about getting started. I really think that this could be good for me. I have all the feelings. ... Nothing is ever simple.

Participants were curious and excited about how to implement the new research method in their specific context, what effects it might have on their teaching practices and student outcomes, and being part of a community of like-minded educators and researchers. They also expressed curiosity about practical aspects such as formulating research questions and analyzing data collected through DAS:

"I am curious to see if the content of this training is something that will help us at [primary school] take the next step forward/upward."

"I'm eager to observe and learn from how others have analysed their own data sets. Especially [a participant's] data as the way [s/he] has been using DAS is something that I would like to do similarly"

The most frequently mentioned opportunities with DAS were to improve teaching, innovate their research methodology, work in a more data-driven way, strengthen their analysis capability around teaching, strengthen their school development capacity, and focus more on student learning.

5.2 Challenges experienced by participants

The AI-powered analysis of participant reflections resulted in many challenges identified, see Table 1. Participants expressed concerns about the practical implementation of the new research method, particularly regarding time consumption, complexity, engaging all colleagues or students, and integrating DAS into existing work processes. They also voiced challenges in formulating appropriate research questions, designing effective tasks, and analyzing the collected data in a meaningful way. The identified challenges will now be described more in-depth.

5.2.1 Frequently articulated challenges

Time constraints were many and varied. Participants struggled with finding time for the training programme, in terms of preparing, reading the handbook, reflecting upon their own learning and learning to use Loopme effectively. They also worried about time needed for applying DAS; for designing tasks, commenting upon participant reflections and analyzing the data collected. Participant time was also a worry, in terms of making people prioritize deep reflection as well as carrying out the actions they were supposed to reflect upon.

Complexity of DAS was raised as an important challenge, both in terms of the many conceptual models covered in the handbook and in the many steps required to implement DAS. To cope with this complexity, calls were made for a gradual learning process. Many found the complexity to have merit:

DAS is certainly multi-faceted, intricate and complex – yet each technique links well to the overall objective.

Table 1. 28 different challenges with Designed Action Sampling, as reflected upon by 110 practitioners and scholars immersed in a DAS training programme.

Challenge	Description	Frequency	Illustrative quotes from participant reflections
Time constraints	How to find enough time for training materials and tasks, and to reflect and analyze in on-going studies, given existing commitments.	High	"Is it reasonable to have tasks every/other week with reflection and feedback?" "I need to find a way to make my own tasks integrated in my own daily work"
Overwhelmed by complexity	Challenging to grasp the many components and theoretical foundations of DAS. A lot of information to process in a short time.	High	"The whole thing feels so big ... I'm in the learning pit, time to start climbing." "standing outside my office today, with a blank stare. ... I must be terribly stupid!"
Engaging colleagues and/or students	How to engage, motivate, incentivize colleagues / students to participate in DAS. How to overcome internal resistance to change, resource constraints.	High	"How do we get everyone involved in this so that it is carried by everyone" "It's a good ambition to also let teachers be involved in designing tasks"
Task and tag design	How to design effective and engaging tasks and tags that yield useful data. Unsure about appropriate level of complexity, number of tasks to include.	High	"I feel confused how to design such tags that are informative, not intrusive" "Feeling anxious ... with everything it entails to produce useful data"
Data analysis	How to effectively analyze mixed data, interpret results, draw meaningful conclusions. A daunting and time-consuming challenge.	High	"I would like to know how to transfer the results (data) into outcomes (papers)." "I look forward to learning more about the AI Analyse function coming"
Implementation in one's context	How to implement, integrate and adapt DAS to make it work in their specific context, how to train participants, how to collaborate internally.	High	"It's difficult to work scientifically at school while working 100% as a teacher." "It feels frustrating to have so many questions about so much."
Research question design	How to formulate appropriate research questions for their projects. How to create specific and measurable questions aligned with DAS.	High, (mostly practitioners)	"challenging ... to translate the research questions into action-reflection [tasks]." "good that we got to sit together and practice writing RQs"
Purpose and focus confusion	What is the overall purpose and goals of the DAS training, what to achieve and learn, how to focus one's research project.	High (mostly practitioners)	"The question is whether it is "too" rigorous a way to follow a process" "not everyone ... has the same understanding of the ... purpose of the work"
Theory vs practice gap	How to bridge and balance between theoretical understanding and practical application of DAS. How to translate DAS theory into practice steps.	Medium	"I'd be interested in seeing examples of designed tasks specifically created for teachers and understanding their design range"
Data quality concerns	Worries about the quality (reliability, validity, objectivity) of data collected through DAS, biases in self-reports, subjective nature of reflections.	Medium	"How to make sure that the participants won't choose the tag to make the researcher "happy" or have the "good answer"?"
Deep reflection and honesty	Worries about quality, depth and honesty of reflections from colleagues. Risk for superficial reflections and feeling of being monitored.	Medium (mostly practitioners)	"Will students give honest feedback if they fear teachers might grade them unfairly" "Sharing among colleagues does not go down well with colleagues"
Creating value internally	How to generate valuable insights through the research process, how to make DAS useful and impactful, how to show results and improvements.	Medium (mostly practitioners)	"It all comes down to the 'why' ... what question are we asking and therefore.. does our data enable us to answer it and if not - what the hell are we doing here??"
Sustained usage	How to sustain consistent DAS usage and long-term changes in practice based on findings. How to avoid losing momentum, reverting to old habits	Medium (mostly practitioners)	"How do we do, in the long term, to get a lasting method for each teacher to find themselves in the circular movement between theory and practice, over time?"
Technology concerns	How to learn and use a new digital tool (Loopme), how to gain sufficient skills in it, how to manage security, privacy and consent.	Medium (mostly scholars)	"I want to find a way to use [DAS] without using Loopme as I can't use it in my university."
Role confusion	Unsure whether to use DAS as a teacher or as a scholar.	Low (academics)	"confused ... what tasks are for the other teachers, and which are for the students."
Philosophical	Underpinnings of DAS and its relationship to other research paradigms.	Low (academics)	"As ... a qualitative researcher I am nervous of quantitative and mixed methods"
Imposter syndrome	Doubting own ability to do research, feeling inadequately prepared.	Low (practitioners)	"I can become somewhat concerned about whether I am research-oriented enough"
Cultural differences	Concerns using DAS across different cultural contexts, e.g. non-western.	Low (academics)	"[how] to engage teachers ... in educational contexts in less developed countries"
Pace of training	Felt rushed through complex concepts and worried about falling behind.	Low	"As it is now, I think it goes a little too quickly for me between lecture and doing"
Consistency	Hot to consistently apply DAS across classrooms, teachers, time periods.	Low	"Can science be made easy? Can it be standardized?"
Giving feedback	How to provide meaningful feedback triggering insights and improvements.	Low	"most difficult about giving feedback is that it should be meaningful and developing"
Reflection sharing	Maintaining confidentiality and privacy when sharing reflection quotes.	Low	"Remember to use anonymous sharing with caution"
Management support	Without firm support from managers, few employees will engage in a study.	Low (practitioners)	"Lack of commitment from management ... lack of commitment from participants"
Academics' views	How DAS will be perceived by the broader academic community.	Low (academics)	"How accepted/adopted is the DAS-method 'out there' in the scholarly community?"
Academic careers	Perceptions among scholars, reviewers, in tenure decisions, risks, benefits.	Low (academics)	"Are papers that use DAS as a method generally accepted by academic journals?"
Communication	How to explain to others in simple terms the complex concepts in DAS.	Low	"I need to ... convince powerful people about the potential of DAS!"
Ethics	Impact on participants, power dynamics, coercion and undue influence.	Low	"should not be perceived as any type of "control" but ... a relationship-building tool"
Emotionally taxing	Emotional burden inherent in learning a new research method.	Low	"I have all the feelings. ... Nothing is ever simple."

Engaging people was a recurring challenge. To get colleagues on board, it was deemed important to explain the purpose in relation to existing goals, to demonstrate the value of DAS to colleagues and students, to involve colleagues in designing DAS studies, to implement the new method gradually, and to offer training and support in the practical steps. To get students on board, it was deemed important to design relevant and meaningful reflective tasks.

Designing tasks and tags entailed many tricky details. Participants reported struggling with making tasks aligned with their research question and making them yield interesting reflections. Tasks needed to strike a balance between comprehensive enough for interesting action-taking yielding rich reflection data, yet simple and focused enough to avoid cognitive overload among participants. Tags caused confusion around how many and their meaning. The handbook gave important assistance:

As I am starting on thinking about my own action-sampling that I would like to use in my modules, I found chapter 7 helpful as a 'cheat-sheet' on what to do

Data analysis triggered concerns around finding the time, drawing meaningful conclusions from complex data, combining numbers with text, mitigating biases and moving iteratively between data and interpretations. The potential for collaborative analysis was appreciated, but triggered questions around how to structure it. Interest was significant around the potential of AI to assist analysis and visualisation. Again, support materials such as videos were important:

Data analysis - the seven techniques. I need to watch this part of the film again when it's getting close to the real thing

Implementing DAS in an organization emerged as a meta-challenge where many other challenges came together and synergized into an at times overwhelming feeling. To implement DAS in an organization, there is a need to simultaneously find a relevant purpose, design a research question, engage colleagues, design useful tasks and tags, allocate time and resources to carry out the data collection, analyze the resulting reflections and present a summary to colleagues for collective analysis. It could be seen as an illustration of how challenging it can be to work in a scientific way as a practitioner organisation:

It feels both big, exciting and a bit difficult to succeed well with the cause-effect analysis so that all the work yields results.

Research question (RQ) design was challenging, especially among practitioners new to this. Many struggled to formulate focused and actionable RQs that were aligned with DAS, with organizational goals, and with personal interests. Collaborative and iterative refinements were seen as necessary:

As a team of researchers, there's a lot of intellectual power and experience here

Purpose and focus confusion was especially articulated among practitioners, many asking themselves why they should even work in a scientific way, how to get colleagues on board such a proposal, and how to manage it in practice. Scholars were also confused by the idea of engaging their teacher colleagues in studies on higher education effectiveness:

I am still thinking about how to motivate a larger group of educators (e.g., all my colleagues at our business school) to collect data together.

Many people want a "quick fix" and are challenged by the "inertia" of a systematic scientific approach. However, I can't see any other way to go.

5.2.2 Less frequently articulated challenges

Theory versus practice was a challenge that emerged from participants' struggles when trying to practically apply DAS principles described in the handbook, in the videos and at the training sessions. Many asked for concrete examples and step-by-step guidance.

Data quality concerns mainly treated the subjective nature of reflections and how to quantify, generalize and make causal inferences from such data. Other concerns were around selective or biased reporting, participants' lack of time to reflect deep enough and a fear of them writing what pleases the researchers.

Deep reflection and honesty was a similar challenge, but going beyond lack of time as a reason for shallow reflections to also include deliberate hiding of one's private inner thoughts. Participants might fear negative consequences of sharing failures and negative outcomes, feeling vulnerable or monitored. Reflections could also expose others as incompetent if the wrong people were to get access:

If my manager could directly see what the students are saying after each lesson, I might feel monitored

The relation between teacher and student can mess up the data collected. ... you need to be aware of how your own relationship with the data givers can affect the outcomes.

Creating value internally was a challenge that many practitioners raised as important. This goes beyond engaging colleagues to also showing results once DAS has been implemented. How is DAS creating value in practice, and how will results be measured, quantified and demonstrated to the organisation.

Sustained usage was seen as a long-term challenge of initial enthusiasm fading and people reverting back to old habits. A shift in mindset and structured circular practices were proposed as remedy.

Technology concerns included the significant effort required to learn a new and complex digital tool such as Loopme, its various functions and its relationship to existing digital tools such as learning management systems. Specific training in digital tool usage was asked for by many. Some expressed worries around data security, privacy and technical issues. One participant had been denied usage by their internal IT department due to a policy ruling out software-as-a-service platforms.

5.2.3 Rarely articulated challenges

The 14 rarely articulated challenges outlined in Table 1 were reflected upon only by one or a few participants. Still, they all resonated with the author's auto-ethnographic experience from the decade-long journey of developing DAS and Loopme. *Role confusion* has been common among scholars wondering whether to work in a data-driven way to improve their teaching or to collect data for their educational research. One participant concluded that a combination would save time:

My role mainly involves teaching, and resources and incentives to do extensive and high-quality research are secondary. ... Using DAS would allow me to continue [my teaching] while also collecting data with minimal additional effort.

Philosophical underpinnings were mostly discussed by scholars in relation to the quantitative versus qualitative research paradigm war. One participant saw DAS as "a closely emulsified relationship between the two". *Imposter syndrom* was experienced by a few participants, where one wrote that the training "makes me feel inferior and stressed because I don't feel like I'm on the same level as the others". *Cultural differences* were raised by a few participants who saw challenges in engaging teachers in less developed countries. *Pace of training* was mostly deemed appropriate, sometimes even too slow, but a few also claimed the pace to be too quick at times. *Consistency* was raised alongside a fear that research cannot, or should not, be standardized in the way DAS stipulates. *Giving feedback* in written form on reflections submitted in Loopme stressed some participants due to challenges in what to write, and also in relation to time spent. *Reflection sharing* in anonymous form was deemed useful, but was also seen as a potential risk of trust and secrecy breach. *Management support* was only mentioned by a few, but has been crucial in many practitioner-led DAS studies, especially when facing resistance:

It's a bit difficult to get the commitment from colleagues, there's some grumbling and it's hard. [My school manager] is tough as nails and says "this is what we're going to do now" and that's empowering.

Academics views and careers were mentioned in some rare occasions, revolving around how accepted DAS is as a method, how reviewers will react on a DAS study and what career benefits it entails.

Communicating to others in a simple way what DAS is and how it can help was raised as a concern for those in need to anchor their usage of DAS, one example coming from a junior researcher:

To implement DAS, i need to be further in my research and gain a bit of power in academia, or even better, convince powerful people about the potential of DAS!

Ethical issues around coercion and power were largely absent, but one participant emphasized that DAS should be used to foster trustful dialogue rather than to exercise control over employees. Finally, an *emotionally taxing* training experience was mentioned by a few participants, as already indicated above.

5.2.4 Challenges complementing the picture

A challenge not present in the reflection data, but discussed in DAS training sessions, was the semantic challenges for practitioners who were taking a research leader role inside a non-academic organization. The Swedish participants developed an entirely new semantic toolbox, largely untranslatable into English. It revolved around the difference between “forska” (to do research) and “beforska” (to study in a research-like manner). Some practitioners embraced this difference, proudly calling themselves “beforskare”, reminiscent of “B-researchers”, a joke fittingly capturing the feelings of inferiority to academic “A-researchers”, alongside feelings of pride. This also resolved a challenge where some traditional academic researchers snobbily frowned at the practitioners’ attempts at taking a role as a researcher. Another key challenge was funding for the training programme, as evident in the many email threads between the author and potential participants. Many people wanted to join the training programme but could not secure funding, and were thus not represented in the cohorts.

6. Discussion

Challenges were found to be ever-present in the studied adoption process of the rather typical research method innovation studied here. While extant literature emphasizes cultural challenges in academia, the challenges mentioned here were of a much more mundane and practical nature. Participants first struggled with finding time and resources for training themselves in DAS, and then ran into a plethora of hands-on implementation challenges such as research design, engaging people, explaining the purpose, ensuring data quality, sharing reflections, feedbacking on them and analyzing the data. The need for a digital tool to collect reflections added to these practical challenges.

If participants were embedded in a non-academic organization, even more challenges were added, such as securing management support, overcoming both own and others’ psychological challenges, and taking a novel and often uncomfortable role as lay research leader. Figure 1 is an attempt to summarize the many challenges. It was compiled by combining challenges from the Findings section with challenges found in literature. Its generalizing qualities cannot be assessed at this stage, so for the moment, it needs to be regarded as a framework of challenges specific to the adoption of DAS.

6.1 The Academia–Practice chasm in RMI

This study has put in bright light a previously barely acknowledged chasm between academic and practitioner-based RMI. What if academia is not the innovation hub it so frequently claims to be, at least not when it comes to RMI? As shown here, it is not only cultural rigidities that hinder academic RMI, but also a broad plethora of practical everyday challenges. Have this made many academics remain complacent in their methodological choices, staying in the safe zone of those few established standard methods they were once trained in? One reason could be that they lack incentives to innovate and develop their methodological toolbox further, that they are embedded in a system which rewards them for their conservative stance. Ironically, it could also be the strong traditions of method training for doctoral students which then make scholars feel methodologically safe once they have established themselves career-wise – “Trust me, I’m a PhD” and “Nobody ever got fired by choosing IBM”. Practitioners, on the other hand, have every reason to innovate their research methods, as people are dying (cf. Covid 19), students are dropping out *en masse* (cf. PISA), corporations are going bankrupt, wars are waged and billionaires are made (cf. social media platforms as disruptive kingmakers). Is this chasm an RMI-based paradigm war, extending the classic multi-front qualitative vs quantitative battle?

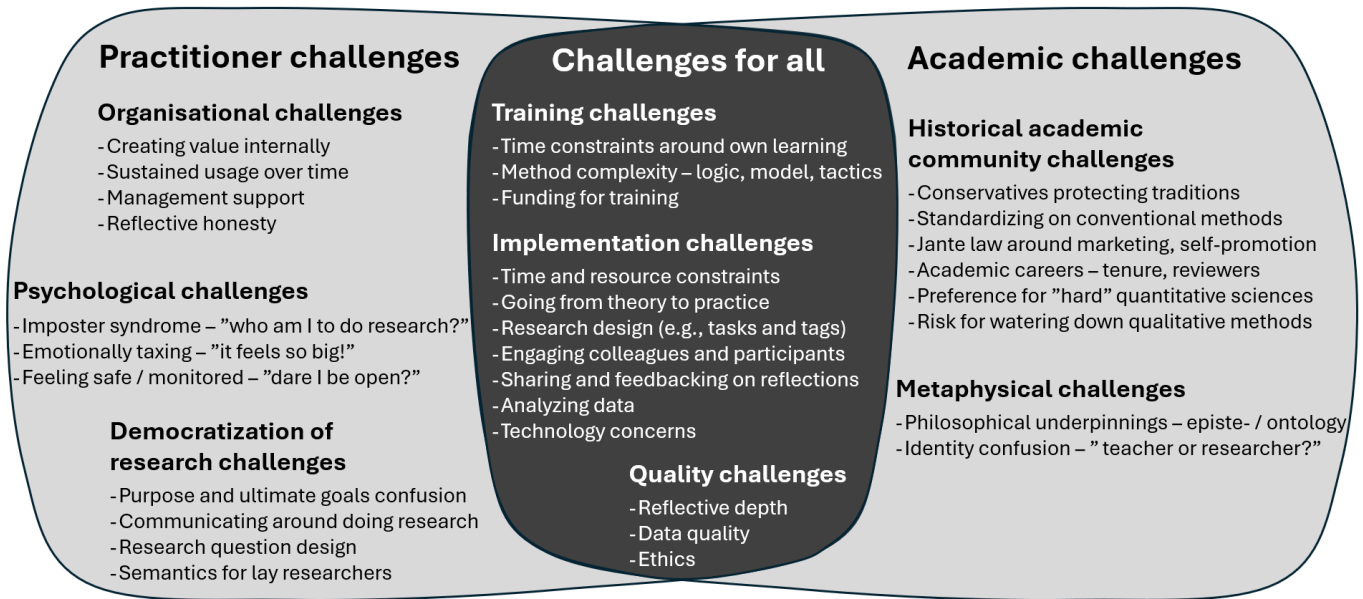


Figure 1. Framework summarizing eight main challenges experienced in the adoption process of a research method innovation in entrepreneurship education.

6.2 Scientific versus commercial social media platform deployment

The generalizability of challenges uncovered here is difficult to assess. Has this study uncovered challenges in RMI, or merely challenges in qualitative RMI, or merely challenges in democratization of research methods, or even, merely challenges in DAS? Future will have to tell. Exploring the latter, Table 1 and Figure 1 can at least shed some light on a very specific issue in DAS methodology: When is it a good idea to deploy a scientific social media platform? A simple answer could be: When challenges with such an endeavor can be practically overcome. Any setting where people can be encouraged to reflect repeatedly and in-depth around key insights they gain from doing interesting things is a good setting for DAS. Multiple benefits will then accrue.

Commercial social media platforms have taken over the world, currently being used by around six billion people. Their global diffusion was fuelled by the joy of engaging entertainment, viral diffusion of often peculiar content, and instant gratification through likes. Scientific Social Media (SSM), on the other hand, contributes with something much more cognitively and emotionally challenging; deep reflection and introspection around painstaking learning journeys in working life. Maybe SSM is the answer to a very old question posed by Argyris and Schön some 50 years ago (1974): how to turn professionals into reflective practitioners? Reflections analyzed here often touched upon the many benefits of forcing people to reflect in-depth, rather than seeing it as an ethically challenging proposal.

6.3 Responsible RMI as the academic role

Private sector innovators are often inspired by the hacker mantra emanating from Facebook: “Move fast and break things” (Foer, 2017; Taplin, 2017). They rapidly try out new things, see what benefits can be produced, and then try to fix (or simply neglect) any problems afterwards. It could be that such a role sits awkwardly with the academic culture, putting high value on research ethics, a “do no harm” culture, opt-out policies, data ownership and privacy. What if the academic role as RMI laggards, mostly using *almost* up to date methods (cf. quote above by Feynman), is a situation we should cherish and see as something good? If so, the slow diffusion of an SSM platform is something to be proud of. We academics do not accept any new fad, we wait until practitioners have played around with it for years and discovered any important flaws. Then we engage. Which is what has happened in the academic field of EE. Now, 13 years after the inception of DAS, an increasing share of EE scholars are in fact engaging.

6.4 Implications for policy, theory and practice

Implications for *policy* include a possible re-evaluation of academic incentives for RMI, either finding that more needs to be done, or concluding that the current caution around RMI is apposite. Availability and nature of training in RMI could be investigated further, such as increasing the availability of novel research methods in established training structures, as well as providing more funding for training in mature research method innovations. Implications for *theory* include a need to further investigate theoretical aspects of RMI, given the Academia-Practice chasm uncovered here. Further research could also explore challenges in RMI to see if the framework presented in Figure 1 is valid more broadly than for DAS. Implications for *practice* include new insights on how to organize RMI training so that challenges disclosed here are more taken into account.

7. Conclusions

This case study resulted in a proposed framework for challenges in research method innovation, albeit with unknown generalizability broader than for the innovation process studied here. Eight focal challenge areas were identified, comprising around 30 different challenges on a micro level. The innovative research method studied here was challenging to academics due to well-known historical academic community issues, and also due to challenging metaphysical underpinnings. A contribution was made in uncovering many largely unexplored challenges experienced by practitioners engaging in an innovative research method. They struggled with organizational and psychological challenges, and grappled with taking a leading role as action researchers. It was concluded that challenges can be much more mundane and hands-on than previous literature has perhaps suggested. Participants were also found to struggle with the time consumption and complexity of the training programme and with implementing the novel research methodology – Designed Action Sampling – in practice in their unique context.

Based on these findings, an Academia-Practitioner chasm was proposed, representing a previously rarely acknowledged difference in how academics adopt research method innovations compared to how practitioners adopt them. This could explain why the academic community can be perceived as a laggard in this respect. This difference was found to have many legitimate reasons that need to be taken seriously into account before acting upon any such differences.

8. References

- Aadland, T. (2023). Advancing Methods in Entrepreneurship Education Impact Research: The Benefits and Limitations of Register Data. *Entrepreneurship Education and Pedagogy*, 25151274231209970.
- Argyris, C., & Schon, D. A. (1974). *Theory In Practice: Increasing Professional Effectiveness*. . San Francisco, CA: Jossey-Bass.
- Bacigalupo, M., Kampylis, P., McCallum, E., & Punie, Y. (2016). Promoting the entrepreneurship competence of young adults in Europe: Towards a self-assessment tool. Proceedings of ICERI2016 Conference, 14th-16th November 2016, Seville, Spain.
- Baggen, Y., Lans, T., & Gulikers, J. (2021). Making Entrepreneurship Education Available to All: Design Principles for Educational Programs Stimulating an Entrepreneurial Mindset. *Entrepreneurship Education and Pedagogy*, 5(3), 347-374.
- Bansal, P., Smith, W. K., & Vaara, E. (2018). New ways of seeing through qualitative research. *Academy of Management Journal*, 61(4), 1189-1195.
- Berglund, H., Bousfiha, M., & Mansoori, Y. (2020). Opportunities as artifacts and entrepreneurship as design. *Academy of Management review*, 45(4), 825-846.
- Berglund, K., & Verduijn, K. (2018). *Revitalizing Entrepreneurship Education: Adopting a critical approach in the classroom*: Routledge.
- Biesta, G., & Burbules, N. C. (2003). *Pragmatism and educational research*. Oxford, UK: Rowman & Littlefield Lanham, MD.
- Blenker, P., Frederiksen, S. H., Korsgaard, S., Muller, S., Neergaard, H., & Thrane, C. (2012). Entrepreneurship as everyday practice: towards a personalized pedagogy of enterprise education. *Industry and Higher Education*, 26(6), 417-430.

- Blenker, P., Trolle Elmholdt, S., Hedeboe Frederiksen, S., Korsgaard, S., & Wagner, K. (2014). Methods in entrepreneurship education research: a review and integrative framework. *Education+ Training*, 56(8/9), 697-715.
- Boström, J. (2025). Designing for Quality Emergence in Healthcare—Reflection and Action. Mid Sweden University
- Brentnall, C., Lackéus, M., & Blenker, P. (2023). Homogenisation processes in entrepreneurship education: The case of Junior Achievement *Entrepreneurship & Regional Development*, *In press*.
- Brentnall, C., Rodríguez, I. D., & Culkin, N. (2018). The contribution of realist evaluation to critical analysis of the effectiveness of entrepreneurship education competitions. *Industry and Higher Education*, 32(6), 405-417.
- Bryk, A. S., Gomez, L. M., Grunow, A., & LeMahieu, P. G. (2015). *Learning to improve: How America's schools can get better at getting better*. Cambridge: Harvard Education Press.
- Chan, C. K. Y. (2022). *Assessment for Experiential Learning*: Taylor & Francis.
- Derre, B. (2023). A design for effective entrepreneurial education in higher education. Doctoral Thesis, Eindhoven University of Technology
- Dresch, A., Lacerda, D. P., & Antunes, J. A. V. (2015). *Design science research*. New York City: Springer.
- Ellborg, K. (2023). In the eye of the beholder: Visualising students' implicit entrepreneurship theories. *Entrepreneurship Education and Pedagogy*, 6(3), 458-480.
- Ericsson, E. (2023). Experiences of speaking with conversational AI in language education. Doctoral thesis, University of Gothenburg Gothenburg.
- Ericsson, E., & Johansson, S. (2023). English speaking practice with conversational AI: Lower secondary students' educational experiences over time. *Computers and Education: Artificial Intelligence*, 5, 100164.
- Ericsson, E., Lundin, J., & Sofkova Hashemi, S. (2024). From deadpan machine to relating socially: Middle school students' experiences speaking English with embodied conversational agents. *Journal of research on Technology in Education*, 56(6), 752-768.
- Felin, T., & Zenger, T. R. (2009). Entrepreneurs as theorists: on the origins of collective beliefs and novel strategies. *Strategic entrepreneurship journal*, 3(2), 127-146.
- Fielding, N. (2008). The role of computer-assisted qualitative data analysis: Impact on emergent methods in qualitative research. In S. N. Hesse-Biber & P. Leavy (Eds.), *The Handbook of Emergent Methods* New York, NY: Guilford Press. pp. 675-696.
- Foer, F. (2017). *World without mind*. New York: Penguin Press.
- Fuchs, F. D., Klag, M. J., & Whelton, P. K. (2000). The classics: a tribute to the fiftieth anniversary of the randomized clinical trial. *Journal of Clinical Epidemiology*, 53(4), 335-342.
- Grigg, R. (2020). EntreCompEdu, a professional development framework for entrepreneurial education. *Education+ Training*, 63(7/8), 1058-1072.
- Hedström, P., & Ylikoski, P. (2010). Causal mechanisms in the social sciences. *Annual Review of Sociology*, 36, 49-67.
- Hektner, J. M., Schmidt, J. A., & Csikszentmihalyi, M. (2007). *Experience sampling method - Measuring the Quality of Everyday Life*. London: Sage Publications.
- Hesse-Biber, S. N., & Leavy, P. (2010). *Handbook of emergent methods*: Guilford Press.
- Higgins, D., Brentnall, C., Jones, P., & McGowan, P. (2023). *Nurturing Modalities of Inquiry in Entrepreneurship Research: Seeing the World Through the Eyes of Those Who Research*: Emerald Publishing Limited.
- Hine, C. (2015). *Ethnography for the internet: Embedded, embodied and everyday*: Bloomsbury Publishing.
- Hine, C. M. (2000). Virtual ethnography.
- Hägg, G. (2018). The reflective novice entrepreneur: from habitual action to intelligent action using experience-based pedagogy as a vehicle for change. In A. Fayolle (Ed.), *A Research Agenda for Entrepreneurship Education* Cheltenham, UK: Edward Elgar.
- Johannisson, B. (2023). Academic entrepreneuring as a long-term commitment to regional development. *Entrepreneurship & Regional Development*, 35(1-2), 146-161.
- Jurowetzki, R., Hain, D., Mateos-Garcia, J., & Stathoulopoulos, K. (2021). The Privatization of AI Research (ers): Causes and Potential Consequences--From university-industry interaction to public research brain-drain? *arXiv preprint arXiv:2102.01648*.
- Kennedy, H., Moss, G., Birchall, C., & Moshonas, S. (2015). Balancing the potential and problems of digital methods through action research: Methodological reflections. *Information, Communication & Society*, 18(2), 172-186.
- Kozinets, R. V. (2002). The field behind the screen: Using netnography for marketing research in online communities. *Journal of marketing research*, 39(1), 61-72.

- Lackéus, M. (2014). An emotion based approach to assessing entrepreneurial education. *International Journal of Management Education*, 12(3), 374-396.
- Lackéus, M. (2020a). Collecting digital research data through social media platforms: can 'scientific social media' disrupt entrepreneurship research methods? . In W. B. Gartner & B. Teague (Eds.), *Research Handbook of Entrepreneurial Behavior, Practice, and Process* Cheltenham, UK: Edward Elgar Publishing.
- Lackéus, M. (2020b). Comparing the impact of three different experiential approaches to entrepreneurship in education. *International Journal of Entrepreneurial Behavior & Research*, 26(5), 937-971.
- Lackéus, M. (2021). *Den vetenskapande läraren - en handbok för forskning i skola och förskola*. Lund: Studentlitteratur.
- Lackéus, M. (2023). Work-learn balance - a new concept that could help bridge the divide between education and working life? *Industry and Higher Education, In press*, 1-14.
- Lackéus, M. (2024). From EntreComp to EntreAct: Sixteen validated design principles for making people more entrepreneurial In B. Derre & Y. Baggen (Eds.), "*Empowering the next generation of entrepreneurial change agents: A design science approach to transforming entrepreneurial education*: Springer.
- Lackéus, M., & Sävetun, C. (2023). Designed Action Sampling as a new research method to help build active communities in entrepreneurial education. *Entrepreneurship Education & Pedagogy*
- Larsen, I. B. (2023). Cultivating an Entrepreneurial Mindset through Entrepreneurship Education PhD thesis, Aarhus University Aarhus.
- Larsen, I. B., & Neergaard, H. (2024). What lies beneath: using student reflections to study the entrepreneurial mindset in entrepreneurship education. *International Journal of Entrepreneurial Behavior & Research*, 30(5), 1149-1176.
- Larson, R., & Csikszentmihalyi, M. (1983). The experience sampling method. In M. Csikszentmihalyi (Ed.), *Flow and the Foundations of Positive Psychology: The Collected Works of Mihaly Csikszentmihalyi* Switzerland Springer Nature. pp. 21-34.
- Lautenschläger, A., & Haase, H. (2011). The myth of entrepreneurship education: seven arguments against teaching business creation at universities. *Journal of Entrepreneurship Education*, 14, 147-161.
- Lê, J. K., & Schmid, T. (2022). The practice of innovating research methods. *Organizational Research Methods*, 25(2), 308-336.
- Lindahl Thomassen, M., & Ramsgaard, M. B. (2022). Experiences from live casework with Nordic micro-enterprises: contextualizing learning designs in entrepreneurship education. In *Reframing the Case Method in Entrepreneurship Education*: Edward Elgar Publishing. pp. 54-66.
- Liu, Z., Shi, Y., & Yang, B. (2022). Open innovation in times of crisis: An overview of the healthcare sector in response to the COVID-19 Pandemic. *Journal of Open Innovation: Technology, Market, and Complexity*, 8(1), 21.
- Locke, K., Golden-Biddle, K., & Feldman, M. S. (2008). Perspective—Making doubt generative: Rethinking the role of doubt in the research process. *Organization Science*, 19(6), 907-918.
- Lohmeyer, Q., & Meboldt, M. (2016). The integration of quantitative biometric measures and experimental design research. In P. Cash, T. Stanković, & M. Štorga (Eds.), *Experimental Design Research: Approaches, Perspectives, Applications* Switzerland: Springer. pp. 97-112.
- Marres, N. (2017). *Digital sociology: The reinvention of social research*: John Wiley & Sons.
- McCabe, H., & Phillips, M. (2022). Socially distanced work experience in a music degree programme. In S. Norton & A. Penaluna (Eds.), *3 Es for Wicked Problems: Employability, Enterprise, and Entrepreneurship: Solving Wicked Problems*. pp. 93.
- McCallum, E., McMullan, L., Weicht, R., Kluzer, S., & Punie, Y. (2020). EntreComp at Work: The European entrepreneurship competence framework in action in the labour market: a selection of case studies. *Publications Office of the European Union: Luxembourg*.
- Moore, G. A. (1999). *Crossing the chasm*.
- Morland, L., & Lever, J. (2024). Turn the handle everyday: developing circular practices in hospitality through auto action learning. *Action Learning: Research and Practice*, 1-19.
- Neale, B. (2018). *What is qualitative longitudinal research?* : Bloomsbury Publishing.
- Neergaard, H., & Ulhøi, J. P. (2007). *Handbook of qualitative research methods in entrepreneurship*. Cheltenham, UK: Edward Elgar Publishing.
- Nielsen, B. W., Bilenberg, F. D., Nørgaard, H. M. D., Hvilsom, T., Thomassen, M. L., & Ramsgaard, M. B. (2024). Tweaking Outcome and Content in Entrepreneurial Learning Settings: The Case of the Scandinavian Growth Creators Project. In *Entrepreneurship Education and Internationalisation*: Routledge. pp. 48-62.
- Nind, M., Wiles, R., Bengry-Howell, A., & Crow, G. (2013). Methodological innovation and research ethics: forces in tension or forces in harmony? *Qualitative Research*, 13(6), 650-667.

- O'Neil, C. (2016). *Weapons of math destruction: How big data increases inequality and threatens democracy*: Broadway Books.
- Oksanen, L., Healey-Benson, F., & McCallum, E. (2021). Take a Chance on CPD! How One School Put its Faith in the EntreCompEdu CPD Programme and Developed Whole-School Collective Entrepreneurial Education. *Pedagogical Quarterly/Kwartalnik Pedagogiczny*, 66(4).
- Parkkari, P., & Kohtakangas, K. (2018). 'We're the biggest student movement in Finland since the 1970s!': a practice-based study of student entrepreneurship societies. In *Entrepreneurship, innovation and education*: Edward Elgar Publishing. pp. 146-164.
- Phillips, C., & Shaw, I. (2011). Innovation and the practice of social work research. *The British Journal of Social Work*, 41(4), 609-624.
- Ruona, W. E. A. (2005). Analyzing Qualitative Data. In R. A. Swanson & E. F. Holton (Eds.), *Research in organizations: Foundations and methods in inquiry* San Francisco, CA: Berrett-Koehler Publishers. pp. 233-264.
- Ruskovaara, E., & Pihkala, T. (2016). *Review, comparison and evaluation of seven assessment tools* European Entrepreneurship Education NETwork
- Saunders, M. N., Lewis, P., & Thornhill, A. (2019). *Research methods for business students - eighth edition*. Harlow, UK: Pearson Education Ltd.
- Schein, E. H. (1993). Legitimizing clinical research in the study of organizational culture. *Journal of counseling & development*, 71(6), 703-708.
- Shah, D. V., Cappella, J. N., Neuman, W. R., Shah, D. V., Cappella, J. N., & Neuman, W. R. (2015). Big data, digital media, and computational social science: Possibilities and perils. *The Annals of the American Academy of Political and Social Science*, 659(1), 6-13.
- Staller, K. M., Block, E., & Horner, P. S. (2008). History of methods in social science research. In S. N. Hesse-Biber & P. Leavy (Eds.), *Handbook of emergent methods* New York, NY: The Guilford Press. pp. 25-51.
- Steinberg, S. J., & Steinberg, S. L. (2005). *Geographic information systems for the social sciences: Investigating space and place*: Sage Publications.
- Stone, A. A., Shiffman, S. S., & DeVries, M. W. (2003). 2 - Ecological momentary assessment. In D. Kahneman, E. Diener, & N. Schwarz (Eds.), *Well-being: The foundations of hedonic psychology* New York: Russell Sage Foundation.
- Taplin, J. (2017). *Move fast and break things: How Facebook, Google, and Amazon have cornered culture and what it means for all of us*: Pan Macmillan.
- Tiberius, V., & Weyland, M. (2022). Entrepreneurship education or entrepreneurship education? A bibliometric analysis. *Journal of Further and higher Education*, 47(1), 134-149.
- Tjulin, Å., Bergström, G., & Klockmo, C. (2024). The slow pace of building and organizing for trust in internal collaboration within social services. *Nordic Social Work Research*, 1-16.
- Tjulin, Å., & Klockmo, C. (2023). Learning through co-creation across internal organisational professions and responsibilities. *Journal of Workplace Learning*, 35(9), 101-116.
- Tjulin, Å., Krasser, P., & Klockmo, C. (2023). Den vetenskapande socialtjänsten:-hur en social medieplattform kan göra vardagens verkstad till vetenskap. *Socialvetenskaplig tidskrift*, 30(2), 649-660.
- Travers, M. (2009). New methods, old problems: A sceptical view of innovation in qualitative research. *Qualitative Research*, 9(2), 161-179.
- Weltevrede, E. (2016). Repurposing digital methods - The research affordances of platforms and engines. Doctoral Thesis, University of Amsterdam Netherlands.
- Westerberg, M. (2022). Using self as case in teach-the-teacher courses in entrepreneurship to reflect on experiences as student and teacher. In *Reframing the Case Method in Entrepreneurship Education*: Edward Elgar Publishing. pp. 67-75.
- Wiles, R., Bengry-Howell, A., Crow, G., & Nind, M. (2013). But is it innovation?: The development of novel methodological approaches in qualitative research. *Methodological Innovations Online*, 8(1), 18-33.
- Wiles, R., Crow, G., & Pain, H. (2011). Innovation in qualitative research methods: A narrative review. *Qualitative Research*, 11(5), 587-604.
- Xenitidou, M., & Gilbert, N. (2009). Innovations in social science research methods.
- Yin, R. K. (2009). *Case study research: Design and methods*. London: Sage publications.
- Ylikoski, P. (2019). Mechanism-based theorizing and generalization from case studies. *Studies in History and Philosophy of Science*, 78, 14-22.
- Zhao, Y. (2020). Two decades of havoc: A synthesis of criticism against PISA. *Journal of Educational Change*, 21(2), 245-266.
- Örtenblad, A. (2020). *Against Entrepreneurship* (3030479374)Springer