Considerations for the future of online professional development for early childhood educators

Eva Pölzl-Stefanec & Catherine Walter-Laager

Pages 244-257 | Received 10 Sep 2024, Accepted 11 Dec 2024, Published online: 18 Feb 2025

Cite this article

https://doi.org/10.1080/10901027.2025.2465756

https://www.tandfonline.com/doi/full/10.1080/10901027.2025.2465756#d1e263

ABSTRACT

Since the outbreak of the COVID-19 pandemic, online professional development courses for early childhood educators (ECEs) have found their way into early education in Austria for the first time. This article presents data from a survey of 235 ECEs in Austria on the advantages and disadvantages of participating in synchronous and asynchronous online training courses. The results of this study suggest that online training is not a short-term trend; rather, these formats are becoming increasingly established in the training landscape. Future studies should examine how to design online training courses methodologically and pedagogically, such that both synchronous and asynchronous courses appeal to the target group of ECEs. Finally, this study developed six recommendations for the design of online training courses based on its empirical findings.

Introduction

Austria has a significant number of early childhood educational (ECE) professionals and auxiliary staff (53,800), caring for nearly 390,000 children aged zero to six in kindergartens and crèches (Statistik Austria, Citation2023). Training for ECE professionals is standardized throughout Austria, with basic training taking place at the upper secondary level. Austria is one of the laggards in Europe in basic ECE training, with tertiary programs only legally established since 2021/22 (bmbwf, Citation2024; Krenn-Wache, Citation2017). Due to low basic education, there is an increasing need for vocational education and training (VET) of ECE professionals (Baumeister & Griesner, Citation2011). ECE professionals have a high affinity for VET, with high participation rates and preferring events that require little time (Buschle & Gruber, Citation2018).

Nonetheless, compared with events of a longer duration, intensive and comprehensive examinations of training contents are limited, and thus, their sustainable effect on pedagogical work is lower (Egert & Kappauf, Citation2019). Furthermore, Beher and Walter (Citation2012) demonstrated that, at the time of their 2010 survey, distance and e-learning formats were used by only 2% of early childhood educators (ECEs; *n* = 4,494). Nonetheless, their survey predated the outbreak of the COVID-19 pandemic in 2020, which was accompanied by a surge in digitization (Bellmann et al., Citation2021; OECD, Citation2021). The pandemic provided an opportunity (albeit an unintended one) to trial online events as the only alternative to cancellation (Scheidig, Citation2022), simultaneously accelerating “digital readiness” in adult learning (Gugitscher & Schlögl, Citation2022).

Digitization in vocational education and training before and after the COVID-19 pandemic

Prior to the COVID-19 pandemic, online professional development (OPD) were rarely used by ECEs in German-speaking countries (Schmidt & Karnoll, Citation2018). For example, data from Buschle and Gruber (Citation2018) - collected before the pandemic – indicated that only 1% of surveyed managers (*n* = 857) and 2% of professionals (*n* = 728) participated in e-learning offerings. Furthermore, a

representative telephone survey of 456 ECEs conducted in 2017 reached the same conclusion: 98% of respondents had never participated in online training, while 62.3% were unaware of the existence of online training for the fields of early childhood education and care (Haus der kleinen Forscher, Citation2017).

Pandemic-related lockdowns, with the accompanying restrictions on contact and event bans, forced professional development providers to limit their offerings exclusively to the online space, leading to a sharp increase in the use of live online training (Koscheck et al., Citation2022). Prior to the COVID-19 pandemic, face-to-face formats were the most common event format in German-speaking countries; for example, only 21% of providers in Germany exclusively offered online courses in 2019; however, this proportion rose to 73% during the pandemic (Koscheck et al., Citation2022). Similarly, for the Austrian context, Gugitscher and Schlögl (Citation2022, p. 4) noted a "rather hesitant engagement with digitalization before COVID-19" in VET, which "took place on a relatively small scale or rather selectively" (Gugitscher & Schlögl, Citation2022, p. 4). Moreover, Denninger and Käpplinger (Citation2021) described the pandemic as a "disruptor" (Denninger & Käpplinger, Citation2021, p. 173) of previous activities and practices in vocational and training. They also saw it as a catalyst for new and evolving digital formats. With regard to users, Bellmann et al. (Citation2021) demonstrated that the COVID-19 pandemic either inhibited necessary training measures in companies or served as a catalyst for digital formats. In the field of basic education, the latter is the case.

For example, an Austria-wide survey conducted in December 2020 found that 50.5% of ECE professionals (n = 317) had already participated in OPD programs (Pölzl-Stefanec, Citation2021). Furthermore, a representative telephone survey conducted in 2021 revealed that 86% of ECE professionals and managers (n = 509) participated in their first online training in 2020 or 2021 (Haus der kleinen Forscher, Citation2021). Moreover, a recent survey of ECEs in Austria illustrated that by the end of 2022, 93.3% of respondents had already participated in OPD (Pölzl-Stefanec et al., Citation2023).

After the lifting of the pandemic-related contact restrictions that had created the need for online training, blended learning (a combination of face-to-face and online environments), and hybrid events, many providers returned to face-to-face events while adhering to hygiene guidelines; however, online formats remained relevant (Koscheck et al., Citation2022; Wang et al., Citation2024). Currently, it appears that online formats will remain an integral part of the professional development environment, as a return "to the status quo ante COVID-19 with an almost exclusive focus on face-to-face formats is unlikely" (Meier & Seufert, Citation2022, p. 28). The key is to exploit the potential of these formats while taking into account their drawbacks (Schmidt & Karnoll, Citation2018).

Formats and models for online professional development programs

Online Professional Development Programs (OPD) programs have evolved from asynchronous to synchronous or hybrid formats, with synchronous formats allowing real-time interaction via webcams and voice-over-IP, and asynchronous formats enabling delayed and indirect interaction (Ebner & Gegenfurtner, Citation2019). Buschle and König (Citation2018) highlight the attractiveness of online training for ECE professionals. They emphasize the flexibility of time and place as well as the individualization, especially against the background of rigid structural conditions and staff shortages. Digital Online training can also facilitate the reconciliation of family and career and offer financial benefits (Buschle & König, Citation2018). The elimination of travel times to and from events is particularly advantageous for short term formats in order to minimize the effort involved (Scheidig, Citation2022). Spatial flexibility in terms of independence from event locations and elimination of travel times to them also makes it possible to attract speakers without geographical

limitations and to expand the participant base (Scheidig, Citation2022). In contrast, an exclusionary effect can occur, if technical requirements cannot be met and hinder participation (Gugitscher & Schlögl, Citation2022; Scheidig, Citation2022).

The effectiveness and quality of education and training is largely dependent on the qualifications and skills of the trainers. It is therefore the responsibility of training providers to employ sufficiently qualified training staff (Expertengruppe Berufsbegleitende Weiterbildung, Citation2013). Trainers play a particularly important role in the planning, implementation and teaching content of vocational education and training programs (Buschle & Gruber, Citation2018). Based on the TPACK (Technological Pedagogical Content Knowledge) model, trainers can structure complex instructional processes in the digital age (Koehler et al., Citation2014). It provides a framework for thinking about the knowledge that participants in digital settings need to use digital technologies in digital formats (Disney et al., Citation2019). The model considers three forms of knowledge needed by trainers in digital instruction: content knowledge, pedagogical knowledge, and technological knowledge. An instructor using the TPACK model not only understands the technical knowledge, but also knows how to best convey that knowledge through the use of appropriate technology and pedagogical methods. The model thus promotes a holistic view of the teaching process in the digital age (Koehler & Mishra, Citation2009). Another model that focuses more on the social component in OPD settings is the Community of Inquiry Framework (CoI) (Garrison & Anderson, Citation2003). It analyzes the quality of the learning environment of online courses in the context of interaction with participants. The model includes social presence, which promotes the opportunity for participants to express themselves socially and emotionally, which increases learner satisfaction with the Internet. A good socio-emotional climate correlates with the intensity of learner engagement. Furthermore the model contains cognitive presence, which aims to promote critical thinking in participants, and also instructional presence, which includes instructional design and organization, comprehension building, and direct instruction (Garrison & Arbaugh, Citation2007). Based on the literature, this study analyzes the research data to identify the advantages and disadvantages of asynchronous and synchronous online formats, as well as specific design principles that contribute to optimizing the design of OPD.

The present study

Based on the literature and previous empirical reports, the following question arises: “What are the conditions for the success of online development training (OPD) from the participants’ perspective and how can OPD training for ECE be designed effectively in the future?” The conditions for success and the future design of online vocational education for VET professionals as well as the advantages and disadvantages of synchronous and asynchronous online settings are discussed in this study.

Sample size

This study represents a complete survey of early childhood education and care institutions in the province of Styria, Austria. A questionnaire was sent to all 846 heads of a total of 1,106 early childhood education and care centers. Currently, there are 7,408 professionals (56% professional staff and 44% support staff) working in these institutions. At the end of the survey, 235 complete data sets were available, which corresponded to a response rate of 27.78%. Approximately 350 training events are held each year in Styria for all ECE. The focus is on psychological, pedagogical and didactical topics with an emphasis on theoretical and practical knowledge for working with children. Until March 2020, prior to the pandemic-related restrictions on seminar operations, these free training courses were offered exclusively in a classroom format. As of March 2020, to combat the pandemic, the courses could only be held at a distance during certain periods; therefore, the Austrian State Office exclusively offered online formats for the first time during these periods. From 2021 onwards, online

training courses became an integral part of the training program for ECEs alongside face-to-face formats, effecting a lasting change in the range of courses on offer.

Since then, registration figures for training courses have indicated a high level of acceptance of digital formats among the target group. Even after all pandemic-related restrictions on seminars were lifted from October to December 2021, 86.57% (*n* = 6,450) of all registrations received were for online courses. Table 1 indicates that this trend continued throughout the 2022 calendar year and beyond the pandemic period:

Table 1. Enrollment figures for the entire 2022 calendar year categorized by professional development formats.

Download CSVDisplay Table

The continuation of this trend is also visible in the evaluation of the registration flows for the first two quarters of 2023, as shown in Table 2, where there are still high registration figures for OPD courses. Consequently, a change in preference for OPD courses over face-to-face courses is evident among ECEs.

Table 2. Enrollment figures in the first half of 2023 (January to June) categorized by training formats.

Download CSVDisplay Table

The training content offered covered a cross-section of current topics that support professional practice, such as language education, STEM (Science, technology, engineering, mathematics), children's rights and participation, aspects of interaction quality, developmental psychology or physical activity and health education, but also addressed personality-building topics such as communication training, self-care, time and self-management and leadership training. Different formats were offered: Presentations and workshops could be attended in person or online, with presentations being hybrid (onsite and online) and workshops being asynchronous or synchronous. The duration also varied between hourly, half-day, full-day, and multi-day events.

Research design

The partially standardized online questionnaire survey was sent to all ECE institutions in Styria from 6th of April to 30th of April, 2022. The survey language was German. The questionnaire contains five blocks of questions (advantages and disadvantages of course formats, knowledge gain and justification, vocational training wishes), which refer to the entirety of the vocational training offers of the province of Styria. The qualitative answers on the advantages and disadvantages of the different formats were evaluated for this study. At the time of the survey, the training program offered face-to-face, synchronous, and asynchronous OPD training.

Data analysis

The 321 open answers were analyzed using a qualitative content analysis with deductive-inductive category formation according to Mayring (Citation2015), which was technically supported by MaxQDA. First, the data were coded using a pre-defined category system (advantages of taking online courses, disadvantages of taking online courses, online courses equivalent to face-to-face courses). These categories were derived from the research question. After the initial coding of the data using the pre-defined categories, the statements were inductively structured into sub-codes. This involved identifying new subcategories that were not defined in advance but emerged from the data material. This inductive process allowed for a more comprehensive coverage and interpretation of the data

(Mayring, Citation2010). A multi-stage process was used to ensure the inter-coder reliability of the coding. Firstly, the coding was checked by a second independent person to ensure that the categorization was consistent. Disagreements were then discussed and clarified in order to reach consensus and increase the reliability of the coding. Consistency of coding was also ensured through repeated review of the data material. The inter-coder reliability is 95%. The consideration of inter-coder reliability ensured the reliability and validity of the results through consistency and comprehensibility of the coding (Mayring, Citation2010).

Results

A descriptive quantitative analysis of the question regarding preferred training formats revealed that synchronous online formats (webinars) were the most popular training format among respondents (48.8%), followed by face-to-face events (27.6%). Asynchronous online formats (12.3%) in the form of preproduced video-based courses that learners can access on demand, regardless of time and place, and blended learning approaches (11.3%) were cited as less popular formats.

Qualitative results

A total of 309 qualitative statements were deductively and inductively coded. During an initial assessment of the material, the statements were divided into the advantages and disadvantages of attending online training and the equivalence to face-to-face events. The results are described below:

Advantages of attending OPD courses from the perspective of ECEs

Respondents reported that the increased provision of OPD during the COVID-19 closure had changed their own usage patterns and that they now used it intensively and appreciated the benefits. The initial fear of operating with digital tools was reduced by trying them out. The fact that there were no alternatives to OPD services during the COVID pandemic meant that participants had to come to terms with their own (limited) skills in using digital media. Initial technical hurdles, such as getting started with links and access data, were overcome through repeated use. Over time, participants became more adept at using the online conferencing tools and described this increase in competence as “refreshing their own media skills” (Line: 26).

Furthermore, the possibility of collaboratively taking OPD training courses as a team was seen as an advantage: “Online training courses in self-study are also ideal for dealing with specific content together in a team” (Line: 140). Team members or individuals could complete individual lessons, exchange professional knowledge at meetings, or work asynchronously on learning platforms, enhancing concentration and efficiency, and offering content repeatability and time flexibility. Online training was used at home, in familiar surroundings, where it was easier to take notes at a tidy workstation set up according to individual needs. Overall, the environment was perceived as more relaxed, time-efficient, anonymous, and informal. The absence of a dress code and the use of breaks to perform household chores also contributed to this format being preferred. For example, one user described that she could concentrate better, “Because I am not distracted by strange people and an unfamiliar environment and can set up my workplace the way I want” (Line: 126). For the ECEs interviewed, there were also advantages over face-to-face events in terms of concentration, willingness to actively participate, and commitment to a topic. The reasons given for this include fewer distractions from the environment and the absence of side conversations from other participants; thus, the environment was described as quieter overall.” When it comes to online training, there is not so much interfering. You’re more focused” (Line: 250) or “Constant disturbances caused by gossip are also eliminated” (Line: 114). Research on the topic could be performed simultaneously. “I also admit that I have the opportunity to research things related to topics in a

second tab of online seminars" (Line: 181). Traveling and finding a parking space, which were perceived as time-consuming, tedious, and exhausting tasks, were no longer necessary in digital formats, resulting in cost efficiency through the elimination of travel costs and protection of the environment."You save a lot of time and money. Travel costs and travel time" (Line: 187). "I don't need to do an annoying search for a parking space" (Line: 221) and "Plus: it's also good for our climate, as you don't have to travel" (Line: 221). Learning opportunities could also be selected based on individual interest rather than accessibility, and contacts could also be established with colleagues in other regions of the country." For driving reasons, much better if you live in the country. Course topics no longer have to be selected according to accessibility, but according to interest" (Line: 40).

Online OPD training offered a relaxed, less stressful, and easier integration into daily life, as participants could manage childcare during training sessions, and professionals were available for emergencies, making it more convenient for work and family. In terms of content and methodology, the participants saw a link between the quality of online training and the perceived competence of trainers. According to the interviewees, there was an increase in knowledge or a benefit when the speakers were competent in the setting. "Online training with online appointments was unthinkable for me before corona. Now I do most of my training through this medium and I love it! Despite the distance, the speakers know how to build a relationship and also make it possible to exchange ideas" (Line: 126). However, following quote shows the fact, that the trainers did not always manage to establish a rapport with participants: "At face-to-face events, the trainer can respond even better to the participants. The dialogue is better. The participants are more willing to participate" (Line: 131). Other positive aspects were that the speakers rarely strayed from the topic and the group discussed fewer individual cases. However, the interviewees were almost unanimous: "… It depends a lot on the facilitators, both in person and online" (Line 15).

Online training was described as methodically varied and lively due to the videos shown; however, less popular in the digital environment were theoretical lectures with accompanying PowerPoint presentations and lengthy introductions." I would like to see more practical suggestions, not just presenting the theory on PowerPoint." (Line: 206).

Disadvantages of attending OPD courses from the perspective of ECEs

Some respondents expressed a desire for a "return to normality" in the form of face-to-face events, which were described as more engaging, enriching and focused. The disadvantage of OPD seminars was that it was difficult to carry out practical exercises with materials and self-awareness exercises online. For example, when participants were shown and then imitated a Maria Montessori exercise from everyday life. "Exchange of opinions, experiences, discussions are easier to conduct in presence (Line: 212)." Trainers often shortened full-day online sessions to cover less intensive content, ensuring the acceptance of online formats based on length and content. Only if the content was pure information transfer and the events as a whole did "not last too long" (Line: 161) they were acceptable and "bearable in front of the PC" (Line: 161). Users of online formats complained about various physical strains such as headaches, back pain, eye strains, sitting posture, and lack of movement, leading to negative physical effects. "In addition, I have also noticed it physically, the constant look at the PC quickly brings headaches and also back pain with it, because you are hardly moving" (Line: 33).

Another challenge and negative aspect mentioned were the technical requirements for using online formats." Presence because I don't have my own PC at my disposal" (Line: 76).

Other difficulties encountered when participating in online formats included a lack of concentration in front of the screen and distractions caused by the environment and surroundings. Distractions

(from family members or colleagues) were described as disruptive factors that are difficult to control in terms of concentration on the training content. A lack of concentration was also explained by unsuitable office space (due to the office simultaneously being used as a staff room).

Teamwork was challenging due to anonymity, high inhibition thresholds, and lack of eye contact, body language, and facial expressions, reducing motivation to share and collaborate. Online formats had disadvantages, including loss of personal contact, pedagogical experiences exchange, and network building among participants or lecturers. “Through presence, personal and social exchange is better guaranteed and thus more effective.” (Line: 190). Face-to-face interactions offered more authentic, dynamic, and diverse discussions, while online formats lacked these aspects and presenters were less responsive to participants. An interviewee described to prefer face-to-face formats, because “Questions cannot be ignored and the exchange with others is more given, who often give you food for thought or help you.” (Line: 248).

Discussion

The results of this study indicated that OPD training was partly completed synchronously or asynchronously within the team. According to a German study, joint team trainings are perceived as beneficial for team development if the content is linked to the professionals’ needs (Fröhlich-Gildhoff et al., Citation2019). According to another study, the transfer of knowledge from OPD courses is strongly dependent on leadership competence; it is responsible for creating an appropriate learning environment where employees can exchange information about the training content and transfer it to their own practice (Ulber & Strehmel, Citation2019).

Positive OPD training was characterized by timely access to data, documents, and self-explanatory platforms, ensuring participants had a smooth experience. The perception of OPD training depended on personal preconditions, attitudes, experiences, and factors such as trainer, participant interactions, time, learning environment, personal media skills, and concentration ability.These statements are largely consistent with the results of international research (Doo et al., Citation2020; Mullen, Citation2020; Salmon et al., Citation2015). In addition, various features positively influence knowledge acquisition and transfer as well as the effectiveness of (online) training (Kim, Citation2020; Mullen, Citation2020; Stevens et al., Citation2021; Stone MacDonald & Douglass, Citation2015). These include “binding” flexibility (Maintain fixed structures and schedules while adapting learning activities to individual needs and schedules), individualization, interaction, learning success and performance improvement, feedback and the organizational design of webinars. However, effectiveness and impact in education are complex. The appropriate methodological and didactic design of digital education and training is a crucial factor for its effectiveness (Pölzl-Stefanec et al., Citation2023).

Online training was positively evaluated if lecturers were competent, mastered the environment, used varied methods, and transferred theory-practice, while negative ratings were given to those who ignored participants’ questions. Albrahim (Citation2020) demonstrated that trainers in online settings require the following six types of competencies and skills: pedagogical skills, content skills, design skills, technological skills, management and institutional skills, and social and communication skills. The latter set of skills, in turn, impacts group dynamics and exchange, which were particularly crucial to the participants of this study. High value was placed on exchange between participants: if this is possible in the setting, it is seen as positive as it allows for supra-regional contacts. By contrast, a lack of exchange (especially during breaks) and webcams being switched off were perceived as negative as they create a high degree of anonymity.

For trainers, it cannot be assumed that media literacy is a matter of course for participants (Pölzl-Stefanec, Citation2021). For training providers, this means that in the conception and design of training formats, an appropriate handling of teaching and learning forms and existing theories – such as the technological pedagogical content knowledge (TPACK) model (Koehler & Mishra, Citation2009) – must be considered. In contrast to the TPACK model, which focuses on the integration of technology, pedagogy, and subject matter, the Community of Inquiry Framework (CoI) provides a deeper insight into the interactions and social engagement of participants in online courses.

The participants of this study predominantly rated the economic factor of time positively. By participating in online training, the trainees were able to perform household chores during breaks, they did not have to organize external childcare for their own children and they saved time on travel and parking as well as money. Training courses could be chosen according to one's interest in the subject rather than regional proximity and professionals could be contacted by colleagues in case of an emergency. In international studies, the time factor and the reduction of geographical barriers have been repeatedly mentioned (Stone MacDonald & Douglass, Citation2015); however, the qualitative data obtained by the present study indicated that pedagogical professionals (who are predominantly female) use the time "gained" for home and care activities. Nevertheless, a disadvantage was mentioned, namely that online training courses are frequently shortened in time, and hence, topics are often only covered superficially.

The evaluation relied on the professionals' media literacy, with some respondents stating that online training improved their skills, enabling stress-free and active participation. Less media literate individuals often had negative attitudes toward online training, suggesting the need for additional training opportunities for pedagogical specialists in personal media competence (Pölzl-Stefanec, Citation2021).

Professionals often opted for OPD training courses from home due to their individual needs, seeking a relaxed, less stressful, anonymous, and informal learning environment. Thus, people who do not have a PC or another technical device are unable to participate in such OPD training. According to an Austrian study from 2022, 45% of the ECEs interviewed preferred to participate in OPD training from home, 30% preferred to participate from work, and the remaining 25% would participate from both home and work (Pölzl-Stefanec & Feierabend, in prep).

Nonetheless, ECEs often do not have the appropriate technical equipment at their workplace, and therefore, they must switch to their home (Pölzl-Stefanec, Citation2021). Some individuals excelled in concentrating on a PC due to its quiet environment and simultaneous research, while others experienced backaches and headaches due to excessive distractions. Limitations

This study had some limitations. First, we were unable to provide detailed information about the composition of the study participants. That is, we do not know how many heads, ECEs, and support staff participated in the study. As the e-mail was sent to the institutions' general e-mail addresses, one can assume that it was predominantly the managers administering these e-mail accounts who completed the questionnaire. Second, the overall high rate of participation in vocational education and training can be explained by the fact that ECEs in the Austrian province of Styria are obliged to attend at least three days of vocational education and training per year. Consequently, Styria offers free vocational education and training events for ECEs (Rechtsinformationssystem des Bundes, Citation2019). Third, participants were not asked about the effect of OPD training but rather their preferences regarding the setting.

Conclusions and considerations

In the context of vocational training, OPD training is undoubtedly indispensable. The target group's preference for synchronous or asynchronous offerings depends strongly on their individual media skills and personal learning style. In this study, the following recommendations were developed for the further development of OPD training in the context of early childhood education:

OPD training can be used as a resource for teamwork. This requires that the content is tailored to the needs and interests of the team, and that the facility management provides a framework in which the team can work professionally. Under these conditions, participation in an online training course can also be a resource for the team-building process. When designing OPD, it is important to keep in mind that every group outcome goes through different stages (forming, norming, storming, and performing) to reach decisions (Tuckman & Jensen, Citation1977). Participation in existing teams in OPD complicates "presence in the classroom" because social processes, personal and educational learning outcomes (Garrison & Arbaugh, Citation2007) cannot be clearly delineated.

Research should focus more on the skills, competencies and media-didactic approach of trainers as well as on the organizational and administrative aspects of online training (e.g. technical support for participants and sending relevant information). According to the present study, these factors have a decisive influence on the motivation of the participants. On the organizational level, the TPACK model can provide the instructor with a comprehensive guide for organizing an effective learning environment and integrating technology into the classroom (Koehler et al., Citation2013).

These are critical factors that must not be lost in online settings. At this point, it is advisable to conduct warm-up sessions in small groups, turn on cameras, and observe netiquette rules for communication in the digital space. It is important for trainers to create a space for participants to interact and to make a concrete link to practice. This can also take the form of videos of their everyday teaching. A good social presence goes beyond mere online acquaintances. Building a community correlates with the intensity of engagement (Brown, Citation2001).

In the future, further training courses could be offered to improve the individual media skills of education professionals. OPD trainers need to be aware of the interrelationship between technology and content-related technology. Use technologies for specific, pre-articulated pedagogical learning objectives (Koehler et al., Citation2013).

ECEs need an appropriate workspace in their professional environment to be able to participate in online training effectively and without technical disruptions (e.g. a sufficient WLAN connection, suitable software and hardware, and a quiet workplace). The ECE target group, in particular, hardly has any technical equipment at its disposal or a stable Internet connection to be able to participate effectively in OPD seminars (Pölzl-Stefanec, Citation2021).

Online offerings must be didactically justified (e.g. selection and suitability of content in terms of its digitization potential and didactic approach). A more differentiated target group analysis before the start of the training would also be relevant, e.g. a short questionnaire to assess media literacy could be used by program planners to determine needs and learning requirements more comprehensively, more intensively and – ideally – more systematically.

The results of this study largely support the existing literature and previous studies. The TPACK model and CoI framework play a crucial role in online training for ECE. Shorter training formats have low effectiveness, requiring further research on didactic design (Egert & Kappauf, Citation2019). Online platforms should enable blended learning and provide flexible content. Continuing education

programs for instructors are needed to ensure necessary skills. Learners need equipment and a quiet workspace for effective online training. Further research is needed to design effective Online Post-Professional Development (OPD) settings for ECE to meet changing demands and needs.

Acknowledgments

We would like to take this opportunity to thank everyone who participated in the survey for their time and sharing of their experiences. The authors acknowledge the financial support for the publication by the University of Graz.

Disclosure statement

We have no known conflict of interest to disclose.

Additional information

Funding

The author(s) reported there is no funding associated with the work featured in this article.