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Conditions: Online Professional Development in Early Childhood Education

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ABSTRACT

This article examines the conditions for effective participation in online professional development (OPD) for early childhood education (ECE) professionals in Austria. Drawing on international research, it emphasizes the critical role of continuous professional development in enhancing the quality of early childhood education and care, which ultimately benefits children's long-term development. With digital formats gaining popularity due to their flexibility and accessibility, this study explores the specific needs and challenges Austrian ECE professionals face when engaging in OPD. Based on a quantitative survey of 269 ECE professionals, the study identifies five key themes: OPD attendance, preferences for OPD, general conditions for OPD, the influence of location, and time management. The results reveal a strong preference for flexible OPD formats, highlighting the value of small group sizes, German-language materials, interactive elements, and practical transfer tasks. The findings underscore the importance of a target-oriented OPD design that addresses structural barriers, including staff shortages, inadequate technical equipment, and time constraints. By providing tailored and accessible digital learning opportunities, OPD can support ECE professionals in their professionalization efforts, thereby strengthening the field of early childhood education in Austria.

Keywords: Online Professional Development, Early Childhood Education, Gender, Conditions For OPD

INTRODUCTION

International studies have indicated that a solid basic education and regular professional development (PD) training raise the quality of early childhood education and care (ECEC) settings to provide the best possible support for children's development (Geißler et al., 2022; Manning et al., 2017). PD is, therefore, essential (Buschle & Friederich, 2020; Egert & Kappauf, 2019; Fukkink & Lont, 2007; Pölzl-Stefanec et al., 2023). In particular, the quality of interaction between early childhood educators (ECEs) and children has been demonstrated to improve after ECEs' participation in PD (Torres et al., 2022). In the context of ECEC settings, PD programs should provide guided learning opportunities that promote the acquisition of knowledge, skills, and attitudes to improve the quality of teaching and achieve positive outcomes for children (Egert et al., 2018).

Before the COVID-19 pandemic, there were only a few online professional development (OPD) ECEC programs in German-speaking countries (Gugitscher & Schlögl, 2022; Koschek et al., 2022). With the onset of the pandemic and the reduction in social contact, the number of digital training and OPD courses significantly increased (Pölzl-Stefanec & Geißler, 2022). By December 2020, 50.5% of ECEs in Austria had completed an OPD course (Pölzl-Stefanec, 2021). By June 2023, over 75% of ECEs prefer OPD. This trend suggests that online courses will continue to be an integral part of PD in this field (Meier & Seufert, 2022), offering advantages such as flexibility in time and location and cost-effectiveness for participants (Stevens et al., 2021; Cao, 2023). The expansion of digital provision in ECEC indicates that the diversity and

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flexibility of digital formats and methodological-didactic approaches provide an opportunity for versatile and accessible training (Pölzl-Stefanec & Geißler, 2022).

The variety of learning environments encourages different types of learners and allows teachers some leeway to decide individually on the content, place, and time of their learning (Buschle & König, 2018). Synchronous formats provide simultaneous and direct interaction between instructors and participants, while asynchronous learning environments allow for delayed and indirect interaction (Gegenfurtner & Ebner, 2019). Blended learning is the combination of synchronous and asynchronous learning environments (Smith & Hill, 2019).

Digital formats can be as effective as face-to-face events (Stone-MacDonald & Douglass, 2015). Effectiveness depends, among other things, on the formats chosen, the methods used, and, most importantly, the interaction between learners and trainers (Kim, 2020; Stevens et al., 2021). The format should consider the needs of the learners and their learning environment to maximize the effectiveness of OPD (Cao, 2023). Therefore, this article seeks to answer the following research question: From participants' perspectives, what framework conditions are needed for OPD to enable Austrian ECEs to engage with courses in a way that meets their individual needs and circumstances?

Austria is one of the late adopters in Europe regarding initial professional education (IPE) of ECEs; tertiary education programs (The International Standard Classification of Education (ISCED) Level 6) have only been enshrined in law since 2021/22 (bmbwf, 2024). With one exception, the general IPE of ECEs in Austria takes place at the University of Graz (Krenn-Wache, 2024). IPE of ECE at the upper secondary level is often criticized as inadequate due to its low qualification level compared to international standards (Smidt & Embacher, 2020; bmbwf, 2024), and it has been noted that the training curriculum does not meet the increased demands on ECEs (Pölzl-Stefanec, 2017).

The contextual conditions in Austria, a federal republic, make professionalizing ECEs even more difficult. While IPE of ECE is standardized throughout Austria, the framework conditions for ECE institutions in practice are the responsibility of the nine federal states, which leads to different regulations. These legal differences include, for example, varying staff ratios, other group and room sizes, differing opening hours, and various working conditions with different pay (Hartel et al., 2018; Kobler et al., 2018). There are also a few university courses in ECEC, but these require IPE (Krenn-Wache, 2024). PD programs for ECEs also vary by federal state. In the different laws of the individual federal states, the PD requirement ranges from 20 hours to two or three days of compulsory PD during working hours and up to a maximum of five days of PD during holidays. Just as varied is the range of courses offered by the individual states or organizations, most of which are free of charge for working people (Baierl & Kaindl, 2011; Krenn-Wache, 2024).

Since the outbreak of the COVID-19 pandemic, it has become clear that media skills are now a prerequisite for coping with everyday working life (Carretero et al., 2017; Dobrica, 2020; European Commission, 2018). In this context, OPD courses should not be seen as competing with traditional face-to-face events. Instead, the advantages of this format should be embraced to enable users to participate in PD regardless of their location and personal time constraints (Feierabend et al., 2024; Kim, 2020).

In the context of ECE, the framework Buysse et al. (2009) is often used as a basis for addressing PD (e.g., (Egert et al., 2018; Siraj et al., 2019; Yang et al., 2022). Their framework conceptualizes PD as three intersecting components: the "who," the "what," and the "how,"

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which should be considered core elements of any successful PD program. The "who" component emphasizes the heterogeneity of the learners and providers of PD, including their organizational contexts. Training is offered by various providers with different qualifications and experiences, and ECEs themselves are diverse. The "what" component encompasses the training content, defined as specific knowledge, skills, and dispositions. The "how" component refers to the organization and implementation of the training (e.g. format) (Buysse et al., 2009).

These three core components are also crucial in online PD. However, when it comes to didactic design and implementation in the context of OPD, the 'how' component in the digital learning environment needs to be looked at more closely.

METHODS OF RESEARCH

As the primary research method, we developed a comprehensive questionnaire to capture detailed insights into the early childhood educators' backgrounds, experiences, and preferences regarding online professional development (OPD). The final questionnaire consisted of four sections: (A) socio-demographic data: This data group included nine items on gender, age, education, work experience, and current employment status; (B) participation in online training: The measurement was based on seven items. An example was how well the participants could navigate learning platforms, rated on a Likert scale from 1 (not digitally competent at all) to 5 (very digitally competent); (C) experience in online training: This was measured with two items. An example of this was the question of why the participants did not take part in any online training, with possible answers such as lack of offers, insufficient technical resources, general lack of interest in online training, preference for face-to-face training, or accessibility problems relating to the offers (e.g., small font size, low volume, videos without subtitles); and (D) OPD course settings: These were measured using 13 items. An example was where participants would like to participate in online training, with options such as at work (kindergarten, crèche, etc.) or from home.

In addition to the quantitative survey and closed questions, the participants had the opportunity to answer open questions. For example, “What conditions would need to be in place for you to look forward to and enjoy participating in OPD?” The questionnaire was conducted as an online survey (response rate: 25%) and a paper-and-pencil version sent by post (response rate: 12%).

Sample

To carry out the questionnaire survey, 1,087 ECEs were contacted using stratified sampling, of which 527 ECEs from various regions in Austria took part. After comprehensive data cleansing and processing, 269 completed questionnaires were available and used for the subsequent analysis.

Of the 269 ECE surveyed, 263 (97.8%) were female and six (2.2%) were male. Their ages ranged from 17 to 64 years (M = 38.96; SD = 11.47). In terms of job role, 88 (32.7%) worked in crèches, 133 (49.4%) in kindergartens, and 48 (17.9%) in other settings. In terms of professional functions within their institutions, 135 professionals (50.2%) had a leadership role in ECEC institutions characterized by children’s care services; 27 (10%) had a leadership role in ECEC institutions without such services; 48 (17,8%) worked as assistants, 55 (20.4%) stated that they worked as educators, and four (1.4%) had functions as lecturers or pursued scientific activities. Work experience varied from one to 40 years (M = 14.78 SD = 11.31), with employment ranging from less than 13 to 40 hours per week (M = 35.31 SD = 5.37).

Regarding education, 207 respondents (76.9%) had a school-leaving certificate with a diploma examination, while 62 (23.1%) had a school-leaving certificate without a diploma examination. Furthermore, 194 of them (72.2%) had completed training at a BAfEP (secondary vocational training program) at a vocational college, 51 (19%) had a bachelor's degree, 16 (5.9%) had a master's degree, three (1.1%) had a PhD, and five (1.9%) provided no information about their education.

ECEs from all nine Austrian federal states took part in this survey, with the distribution as follows: Vienna (11.9%), Lower Austria (13%), Upper Austria (4.1%), Salzburg (15.2%), Burgenland (5.6%), Styria (33.5%), Carinthia (4.8%), Tyrol (7.1%), and Vorarlberg (4.8%). It should be emphasized that the response rates in the provinces of Vienna and Upper Austria were slightly below average compared to the statistical distribution of ECEC institutions in Austria. At the same time, it was almost twice as high in the provinces of Styria and Salzburg. Comparisons with the statistical data on ECEC institutions in Austria suggest that the sample was representative, particularly in terms of gender-specific and occupational distributions (Statistik Austria, 2022/23).

Data analysis

The questionnaire was quantitatively analyzed using the Statistical Package for the Social Sciences (SPSS) (Bortz, 2005). The collected data was analyzed and expressed as mean values and standard deviations. Group differences were analyzed using the Pearson chi-square test. The open-ended responses collected in the questionnaires were systematically studied using the content analysis method using MAXQDA software. This analysis included deductive categorization and coding of the response data (Mayring, 2010).

RESULTS AND DISCUSSION

Based on the questionnaire structure, five main themes emerged from the data analysis: 1) OPD attendance, 2) preferences regarding OPD, 3) general conditions of OPD, 4) influence of location on the OPD, and 5) time management, concentration, and compatibility.

OPD attendance

Overall, 93.3% (M = 1.07; SD = 0.25) of the participants had attended an OPD training in the last three years. A fraction (6.7%) had not participated in OPD training in the same period. The reasons provided by the latter group included a lack of technical resources (5.9%), training courses generally only attended in person (1.5%), a lack of opportunities (1.1%), and a general lack of interest in attending training courses (0.7%).

Preferences regarding OPD

The respondents had a significant preference for synchronous online training (65.8%), followed by asynchronous offerings (19.3%) and blended learning formats (12.6%), with a fraction (2.2%) of them preferring on-site training. A chi-square test confirmed a correlation between the desire to attend training courses exclusively on-site and the age of the participants (chi-square = 46.511, $p < .001$). Cramer's V (.208) and the contingency coefficient CC (.385) were both significant ($p < .001$). A slight correlation can be assumed since one of the values was slightly above .30.

General conditions OPD

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The participants surveyed (78.8%, M = 1.88; SD = 0.88) attached great to medium importance to the fact that contact details for technical support were provided as part of the OPD courses to solve technical problems efficiently. Furthermore, they emphasized the importance of the training courses offered in German (65.8%, M = 1.9; SD = 0.99). Another significant important aspect to them was the availability of discussion opportunities in small groups (74.3%; M = 1.91; SD = 0.85). In addition, integrating transfer tasks that enabled direct application of what was learned in professional practice was deemed highly important (72.9%; M = 0.79; SD = 2.06). Sixty-one percent (M = 0.99; SD = 2.2) of the participants found group sizes of 10 people significant; group sizes of 30 participants or more were highly unpopular.

Influence of location on the OPD

A large proportion of the respondents (41.3%, M = 4.1; SD = 2.59) worked in rural regions (up to 5,000 inhabitants), 36.8% in the urban areas (up to 1 million inhabitants), and 11.9% in Vienna (Austria's only metropolis). In addition, 24.9% lived less than two kilometers from their workplaces, 43.5% less than ten kilometers, and 31.6% more than ten kilometers (M = 2.87; SD = 1.73). A Pearson chi-square test showed no significant difference between the size of the town or city in which the workplace was located and preferences regarding the PD setting (online, on-site, or blended learning) (chi-square (4) = 70.84, p = .132, n = 269). However, the correlation was not very strong (CC = .160, p < .132; Cramer's V = .115, p < .132). In general, there was a tendency toward blended learning and online settings in terms of the training preferences of the ECEs living in both urban and rural areas.

Time management, concentration, and compatibility

In the last three years, 261 respondents (93.3%) had attended an OPD course in an ECEC context. Of these, 45% had a preference for taking part from home, citing that they could concentrate better at home, that they could use the breaks in between to relax, as they had privacy, that the Wi-Fi was more stable, and that attending the training was more straightforward to combine with family life. Thirty percent of the respondents preferred to take part in online training from their workplace, citing advantages such as having their own offices and the ability to use the time before and after the online training for work. Furthermore, 25% of those surveyed attended online training courses at work if these courses started directly after their shift; otherwise, they switched to at-home attendance.

Another observation was that there was a high preference for attending PD courses on Mondays to Thursdays compared to Fridays and weekends. This tendency could be related to the high workload of the respondents, 87.7% of whom worked more than 35 hours per week. The preference for Mondays to Thursdays was based on the need to concentrate the workload during the working week and maximize the space for personal relaxation on weekends. Thirty-two respondents explained why they preferred participating in PD on Saturdays, including free time management, as no colleague would have to stand in for the children's shift (e.g., "compatible with duty roster," Line 2, or "does not disrupt the work schedule," Line 14), or their children were looked after on weekends (e.g., "My husband is at home; I do not have to organize a babysitter," Line, 22).

Early mornings provided the best opportunity for concentrated work for early risers. "At this time, the children are already looked after, and family obligations are taken care of" (Line 28). "Concentration is optimal before other tasks dominate the day" (Line 18). "The opportunity to participate from home after the children's service makes it much easier to

combine family and career" (Line 26). Compact two-hour units proved to be particularly easy to reconcile with daily commitments. The flexible structure made it possible to integrate PD training into daily routines. Evenings when the partner was at home and the children were in bed provided an ideal opportunity to concentrate on PD training. These results highlight the importance of compatibility between family and career for the participants.

Overall, the participants (63%, M = 7; SD = 0.00; N = 269) preferred OPD courses that lasted two to four hours. Slightly longer breaks were also commonly mentioned, especially 10-minute breaks every 1.5 hours (68%, M = 2.19; SD = 1.12; N = 269). Before registering for online training courses, the participants paid attention to the following information provided by the training provider:

Table 1 *Descriptive Statistics General conditions for ODP*

Variable	M	SD	very important	important	not important	Unimportant
Information on the required data volume	2.58	1.02	17.80	27.50	33.10	21.60
Contact details for technical support	1.95	.89	36.40	38.30	19.03	05.90
Details of the methods used are available	1.90	.79	33.80	45.70	17.50	03.0
Details of the required equipment are available	1.86	.89	41.60	36.80	15.60	05.9
Label requirements (e.g. video obligation) are transparent	2.04	.84	28.6	43.9	22.7	04.8
A learning platform is available	2.44	.84	15.2	33.8	42.8	08.2

Note: Date in percent

The respondents took part in OPD courses to acquire new specialist knowledge (100%), apply this specialist knowledge in practice (97%), gain access to various materials (84%), and exchange ideas with other participants (80%). Perhaps most importantly, they preferred acquiring specialist knowledge through lectures (93%) to group work (56%).

Almost 94% of the survey participants had taken OPD courses in the last three years. This confirms the assumption that since the outbreak of the COVID-19 pandemic, OPD has found its way into the ECEC training landscape, where it has remained an integral part ever since (Pölzl-Stefanec, 2021; Meier and Seufert, 2022).

For future OPD programs, a mixture of asynchronous and synchronous settings would be attractive for participants, as advantages can be achieved from using both settings. In asynchronous settings, for example, participants can learn about theories in a quiet learning environment. In synchronous settings, they can engage in theoretical discussions, and open questions can be clarified (Ebner & Gegenfurtner, 2019). For trainers in OPD settings, the future challenge will be to find a balance between online and face-to-face learning phases in order to ensure a seamless and practical teaching experience for the ECE target group (Pölzl-Stefanec et al., 2023).

For the participants, the OPD courses must be in German, a contact person must be available for technical support, the group size must be as small as possible (10 to a maximum of 20 participants), that they could hold discussions with other participants, and that transfer tasks were integrated so that they could immediately apply their learning in practice. They

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stated that they rarely had a quiet office environment, an undisturbed workplace, or the necessary technical equipment (hardware and stable Internet) in their workplace; therefore, they preferred to participate in online training from home. These findings are consistent with those of a 2020 survey, in which 35.6% of ECE respondents stated they did not have access to a PC or laptop in a professional context. The inadequate equipment in some ECEC institutions can create inequalities and make access to online training more difficult. Especially if these trainings are to be attended part-time and during working hours, it is essential to ensure that all pedagogical professionals have the necessary technical equipment in their workplace (Pölzl-Stefanec, 2021).

In terms of additional advantages, the participants also stated that they could look after their children from home and not have to organize childcare. They also preferred OPD courses on Mondays to Thursdays, as they could easily combine this with family time. However, some professionals preferred to complete OPD courses on weekends, as their partner could then take over childcare, and they could organize their time as they wished. Studies have shown that flexible working time models improve work-life balance (Beigi et al., 2018; Currie & Eveline, 2011; Regis et al., 2021) and that women, in particular, benefit more from these arrangements compared to men (Carlson et al., 2010; Kim, 2020; Ray & Pana-Cryan, 2021). Thus, the creation of adapted OPD programs that offer spatial and temporal flexibility enables professionals to reconcile their private and professional lives (Buschle & König, 2018). Therefore, given the challenge of teleworking or flextime models in the field of ECEC, flexible OPD formats could be an option to improve time management between work and family life while also promoting professionalization in the field of ECEC.

Limitation

Despite the overall favorable sample composition, this study has some limitations that require a cautious approach to interpreting the results. The sample size could be deemed limited, as only 527 of the 1,087 professionals initially contacted participated in the survey. This could lead to bias and affect external validity. In addition, regional differences in the willingness and participation patterns, particularly in Vienna and Upper Austria, could contribute to a degree of bias. Participant self-selection could lead to bias in the results, as individuals voluntarily chose to participate in the study. This could lead to differences in characteristics, behaviors, or attitudes between participants and non-participants. In addition, the study may be susceptible to limitations related to social desirability effects (Heckman, 2010).

CONCLUSIONS

The target-oriented design of online professional development (PD) for early childhood education (ECE) professionals requires careful alignment with their needs and challenges. Central to this is the high affinity for professional development, the structural barriers caused by staff shortages, and the gender-specific double burden, i.e., the importance of the reconciliation of child care and professional development, as expressed in the results. Women, in particular, dominate the early childhood sector and often carry additional responsibilities for family care. This necessitates high flexibility in PD formats to support the balance between work and personal life. This gender debate has accompanied the professionalization processes in ECEC settings up to the present day. Consequently, women

who are affected are at an increased risk of psychological stress, which is associated with negative impacts on their quality of life.

However, a target-oriented approach must provide more than just flexibility: it should include short, practice-oriented learning units of 2 to 4 hours that can be easily integrated into daily work schedules. These courses should incorporate interactive methods like group work and discussions to promote participant engagement. Regular breaks are also essential to maintain focus and accommodate screen time.

Another crucial element is the provision of materials and technical support to facilitate access to digital tools, as not all ECE professionals possess advanced digital skills. Since many participate in PD during their free time, additional support services such as technical hotlines or easily accessible learning platforms are vital.

In summary, the targeted design of online professional development allows early childhood education (ECE) professionals to pursue regular and individualized training during staff shortages and the need to balance work and family. This, in turn, contributes to the professionalization of the ECE sector.

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