

# Enhancing Quality Early Childhood Education in Nigeria through Professional Development

<sup>1</sup>Grace Olubunmi, **AKINDELE**, <sup>2</sup>Adeola Oluwatoni, **FARINU** & <sup>3</sup>Fubara George, **OTOBO**

<sup>1,2&3</sup>Department of Educational Foundations and Counseling Psychology, Early Childhood Education Unit,  
Lagos State University, Ojo Lagos

<sup>1</sup>[bummygrace@gmail.com](mailto:bummygrace@gmail.com), <sup>2</sup>[tonifarinu@gmail.com](mailto:tonifarinu@gmail.com) & <sup>3</sup>[otobofg@gmail.com](mailto:otobofg@gmail.com)

## **Abstract**

*Nations and international organizations around the world have put in place numerous measures to enhance the quality of early childhood education, a sector that is widely diverse both within and across countries. One of these measures has been providing in-service early childhood teachers opportunities to foster their learning and professional development. Presently in Nigeria, there is no national set of minimal qualifications for individuals working or serving as teachers of young children, whether this teaching takes place in child care in public or private care centres or schools. To enhance quality early childhood education in Nigeria, there is need for regular professional development. This paper focus on the need for professional development, features of effective professional development, approaches and principles of Professional development, Professional development needs of early childhood teachers and educators, and challenges facing early childhood teachers and educators' professional development. The paper recommends that early childhood education providers should organise regular professional development for their staff, and collaborate to promote good practices among their staff, early childhood teachers should endeavour to devote their resources to update their knowledge on current practices in early childhood education, while professional development of early childhood teachers and educators should be part of Ministry of Education quality assurance evaluation.*

**Keywords:** Quality. Early Childhood Teachers, Teacher Professional Development, Professional Development Needs, Collaboration.

## **Introduction**

The rich developmental growth that occur in early childhood makes providing young children with stimulating and developmentally appropriate early childhood education (ECE) environments an important target for promoting positive developmental trajectories. Evidence displaying the expansive developmental growth children experience in their first years of life has resulted in a large body of research examining pathways for augmenting and supporting beneficial child development. The richness of young children's growth increases the impact of supportive interventions, such as high-quality early childhood education (ECE), to facilitate optimal child development outcomes (Shonkoff, 2007). In nurturing dignified nations, the main pioneer is needed as the key successor in the education process itself (DiPaola & Walther-Thomas, 2003). In this case, teachers are considered as the main agent to guide the generation of a nation towards a better direction (Fullan, 2001). Besides, the success of an education system cannot be separated from the quality of the teachers themselves. In other words, the qualities of education process and outcomes are closely related to the qualities of teachers.

Teacher is a professional educator whose main duties include educating, teaching and counseling, guiding, training, appraising, and evaluating learners through formal education (Fullan, 2001). Teaching is a profession, and hence, a teacher is required to have academic qualification, competence, good physical and mental condition, as well as ability to achieve national education goals. Teachers' competences include pedagogical, personal, social, and professional competences acquired from professional education (Fullan, 2001). Certificate of educator is formal evidence serving as a declaration that a teacher is a professional worker (Sulistyaningrum Indrawati & Octoria, 2016). Stronge (2018) argued that the teachers' qualities should cover five specific characteristics of teacher responsibilities and behaviours as follows:

- (1) The teacher as a good personality representation
- (2) The teacher as a good classroom manager and organizer
- (3) The teacher as a good instructor
- (4) The teacher monitors students' progress and potential
- (5) The teacher possesses professionalism.

Besides, Goldberg (2003), mentioned that to be great teachers, certain qualities have to be possessed namely; willingness to put learning in the necessary time, love for the age group they teach effective classroom

management style, positive relationships with colleagues, consistent excellence, expert use of instructional methods, in-depth content knowledge, and steadiness for purpose of teaching personality.

These competencies have to be acquired by teachers updating their skills on a regular basis (Yong, Daud & Rahman, 2015). The teachers have to update their skills in classroom management, professional development (preparation of instructional documents), students' assessment skills, skills in pedagogy, skills in the human social dimension, and skills in professional ethics and morality. When teachers possess these kinds of skills and competencies through undergoing regular professional development programmes, their service delivery level will improve, resulting in improved performance of their pupils in the classroom (Padagas, 2019).

Teacher professional learning is of increasing interest as one way to support the increasingly complex skills pupils need to learn in preparation for the 21st century. Sophisticated forms of teaching are needed to develop student competencies such as deep mastery of challenging content, critical thinking, complex problem-solving, effective communication and collaboration, and self-direction. In turn, effective professional development (PD) is needed to help teachers learn and refine the pedagogies required to teach these skills (Darling-Hammond, Hyler & Gardner, 2017).

In recent years, nations and international organizations around the world have put in place numerous measures to enhance the quality of early childhood education (ECE), a sector that is widely diverse both within and across countries. One of these measures has been providing in-service early childhood education teachers with opportunities to foster their learning and professional development (PD). It is typically assumed that both formal (e.g., seminars, courses, programmes) and informal PD learning experiences (e.g., collaboration reflection, discussion groups) are relevant to promote the professional growth of these teachers, and in turn benefit the learning and development of children (Bautista & Ortega-Ruiz, 2015).

Ensuring that teachers enter the Early Childhood Education (ECE) field prepared to teach is one essential component for providing young children with effective educational experiences, but teacher training does not, and must not stop upon ECE preparation programme exit. Professional development represents an integral component to quality teaching, and offers teachers the opportunity to continually fine-tune and improve their teaching skills. Findings show that participation in specialized, intensive, multimodal PD improves teacher competency in the area of skill improvement targeted by the PD activity (Fukkink & Lont, 2007); Trost, 2006; Ingvarson, Meiers & Beavis, 2005).

For early childhood education programmes to achieve high quality, caregivers and teachers need professional development supports that enhance their actual effectiveness in the settings in which they practice. Understanding these needs shifts the debate from “should early childhood educators have a Bachelor of Arts/Science or not” to constructing and delivering at scale a set of proven-effective professional development supports that lead to improved outcomes for adults and children. With three quarters of children from birth to 5 years old spending more than 20 hours per week in an early education or care setting, it seems reasonable to focus on strengthening the skills of the many early childhood educators and caregivers who interact with them on a daily basis (Pianta, 2011).

Professional development plays a crucial role in the progression of educators as they strive to enhance their creativity and efficacy in their professional capacities. This platform provides educators with the chance to enhance their expertise, gain novel pedagogical techniques, and actively participate in cutting-edge methodologies (Nurhayati, 2024; Methlagl, 2022; Tjabolo & Ota, 2019). Educators can enhance their ability to remain adaptive in an ever evolving educational landscape by engaging in continuous professional development, which enables them to keep informed about current best practices. Professional development offers educators an opportunity to investigate and enhance their innovative instructional strategies (Rohman & Nurhayati, 2023; Musa, Nurhayati, Jabar, Sulaimawan & Fauziddin, 2022; Nurhayati, 2020).

Abidogun (2022) opined that the training and development of teachers are paramount in ensuring quality education for all. Teachers are not just purveyors of knowledge; they are mentors, guides, and role models who shape young minds into responsible citizens capable of contributing meaningfully to society and instilling values that will last a lifetime.

Effectively fostering development and learning in early childhood education and care settings requires precise and skillfully delivered blends of explicit instruction, sensitive and warm interactions, responsive feedback, and verbal engagement or stimulation intentionally directed to ensure children's learning while embedding these interactions in a setting that is not overly structured. Interaction that displays these features uniquely predicts

gains in young children's skills development and social competence all across the birth to 5 year period and closes gaps in performance at entry to school. To be effective, caregivers and educators of young children must intentionally and strategically weave instruction into activities that give children choices to explore and play, must engage them through multiple input channels, and should be embedded in natural settings that are comfortable and predictable. The best early childhood educators are opportunists—they know child development and exploit interests and interactions to promote it (Pianta, 2011).

Quality services for young children and their families are now aligned with the professionalization of staff in the early childhood education and care (ECEC) sector (Council of Australian Governments, 2009). Teacher professionalization is directly linked with the process of transforming an occupation into a profession, and the quality, autonomy and status of the job (Sockett, 1993), as cited in Nolan & Molla, 2019). To be able to successfully perform their roles, teachers need to be able to pursue what they value in their practice and 'make choices, take principled action and enact change. However, this is problematic due to the diversity of the ECEC workforce, and its ability to convert professionalization opportunities (physical, social and emotional resources) into achievements (Nolan & Molla, 2019).

It is not surprising that professional development programmes or initiatives vary in terms of the breadth of their goals. For example, some professional development programmes in early childhood focus on improving the observed quality of early childhood classrooms overall, whereas others aim to improve the stimulation children receive for development only in a specific domain, such as early language and literacy or early mathematics. There is evidence that professional development approaches with more specific and clearly articulated goals are more effective (Zaslow, 2014). Fukkink and Lont (2007), reviewed the evidence on professional development training approaches that focused on strengthening early educators' interaction skills

Fukkink and Lont (2007), review of meta-analysis examining effects of teacher participation in PD found that specialized trainings (that targeted specific teaching behaviours or practices) resulted in improved teacher pedagogical competency, attitude toward teaching, content knowledge, and skill when compared to participation in more generalized, broad brush trainings.

Collaborative teams also offer collegial support and knowledge sharing in an informal manner, as well as an opportunity for teacher reflection upon newly implemented practices or challenging classroom circumstances (Trost, 2006). Teachers who receive continued professional development support consistently report that the newly learned practices are more beneficial for meeting student needs, more easily integrated in current classroom practice, and find more satisfaction in using the materials, than teachers who receive the workshop training alone (Fukkink & Lont, 2007). Scholars have typically categorized PD under two broad types, namely formal and informal (Richter, Kunter, Klusmann, Lüdtke, & Baumert, 2011).

Formal PD, also referred to as 'traditional' by some scholars, tend to follow a specified curriculum. These are commonly delivered in structured learning environments by external PD providers, outside of the work place, and are often mandatory. Examples of these activities are structured seminars and workshops, graduate courses and programmes, or mandated staff development conferences and symposiums (Bautista, Cañadas, Brizuela, & Schliemann, 2015). Most formal PD utilizes face-to-face instruction, being therefore constrained to a specific time period and location, which inherently possess both temporal and geographic difficulties for teachers (Jones & Dexter, 2014).

Informal PD activities, in contrast, are generally teacher-led and work-embedded, which allows teachers to reflect on their teaching practices and to learn from their fellow colleagues (Borko, 2004). Unlike formal PD, informal PD activities can be planned or unplanned as well as structured or unstructured. In most cases, however, these activities do not follow a specified curriculum and are not constrained to specific learning environments or time periods (Jones & Dexter, 2014). Informal PD is commonly optional (not mandatory), emerging from teachers' own initiatives (Eraut, 2004). Examples of informal PD include collaborative activities (peer-observation, mentoring and coaching, teacher networks, professional learning communities, communities of practice, action research, study groups) as well as individual activities (reading books, browsing the internet, experimenting with new techniques in the classroom) (Lohman, 2009).

Moreover, there is too little agreement on the performance standards and metrics for those standards, and the preparation and supports that should align with performance standards are woefully out of synchrony. Child care providers and teachers play an essential role in fostering high-quality learning opportunities for young children, but children passing through early childhood education and care settings in the birth to 5-year period can expect

a stunning level of variation from year to year and setting to setting even the most basic qualifications of those providers (Pianta, 2011).

### **Features of an Effective Professional Development**

Teachers' professional development programme is considered to play an important role in enhancing teacher competencies. These are features of an effective professional development:

**Content Focused:** Professional Development that focuses on teaching strategies associated with specific curriculum content supports teacher learning within teachers' classroom contexts. This element includes an intentional focus on discipline-specific curriculum development and pedagogies in areas such as Mathematics, Science, or literacy (Darling-Hammond, Hyler & Gardner, 2017).

Professional learning that has shown an impact on student achievement is focused on the content that teachers teach. Content-focused PD generally treats discipline-specific curricula such as mathematics, science, or literacy. It is most often job embedded, meaning the PD is situated in teachers' classrooms with their students, as opposed to generic PD delivered externally or divorced from teachers' school or district contexts. This type of PD can provide teachers the opportunity to study their students' work, test out new curriculum with their students, or study a particular element of pedagogy or student learning in the content area (Antoniou & Kyriakides, 2013; Heller, Daehler, Wong, Shinohara & Miratrix, 2012; Penuel, Gallagher & Moorthy, 2011).

**Incorporates active learning:** Active learning engages teachers directly in designing and trying out teaching strategies, providing them an opportunity to engage in the same style of learning they are designing for their learners. Such PD uses authentic artifacts, interactive activities, and other strategies to provide deeply embedded, highly contextualized professional learning. This approach moves away from traditional learning models and environments that are lecture-based and have no direct connection to teachers' classrooms and students. The design of PD experiences must address how teachers learn, as well as what teachers teach (Darling-Hammond, Hyler & Gardner, 2017). Trotter (2006) outlines several theories of learning and adult development and identifies principles that are relevant for designing teacher PD.

- i. Early childhood educators come to learning with experiences that should be utilized as resources for new learning.
- ii. Early childhood educators should choose their learning opportunities based on interest and their own classroom experiences/needs.
- iii. Reflection and inquiry should be central to learning and development (Trotter, 2006).

**Uses models of effective practice:** The use of curricular models and modeling of instruction provide teachers with a clear vision of what best practices look like. Teachers may view models that include lesson plans, unit plans, sample student work, observations of peer teachers, and video or written cases of teaching. Professional development that utilizes models of effective practice has proven successful at promoting teacher learning and supporting student achievement. Curricular and instructional models help teachers to have a vision of practice on which to anchor their learning and growth. The various kinds of modeling can include:

- i. video or written cases of teaching,
- ii. demonstration lessons
- iii. unit or lesson plans,
- iv. observations of peers, and
- v. curriculum materials including sample assessments and pupils work samples

**Provides coaching and expert support:** Coaching and expert support involve the sharing of expertise about content and evidence-based practices, focused directly on teachers' individual needs.

**Offers feedback and reflection:** High-quality professional learning frequently provides built-in time for teachers to think about, receive input on, and make changes to their practice by facilitating reflection and soliciting feedback. Feedback and reflection both help teachers to thoughtfully move toward the expert visions of practice.

### **Approaches and principles of Professional Development**

Given the central role of teacher-child interactions in children's developmental and skill gains, one approach to professional development (Domitrovich et al., 2009; Mashburn et al., 2008; Raver et al., 2008) focuses on changing teachers' classroom behaviours. A variety of projects and models attempt to do this. Some focus on producing effective interactions across a wide range of developmental domains and activities (Pianta,



Mashburn, Downer, Hamre, & Justice, 2008), some focus on high-quality implementation of instruction and interactional support for literacy and language (Landry, Swank, Smith, Assel & Gunnewig, 2006; Neuman & Cunningham, 2009; Pianta, Mashburn, et al., 2008; Powell, Diamond, Burchinal, & Koehler, 2010), and still other models focus on Mathematics (Clements & Sarama, 2008; Ginsburg et al., 2005).

### **Professional Development needs of early childhood teachers and educators**

Below are some cardinal professional development needs and prerequisites.

**Setting training standards and strategies:** Institutionalizing standards and policies is the key to constant and up-to-date professional development. Setting up and governing standards for teachers, teaching methodology and quality can be a game changer in the teaching and learning culture. Strategies should enhance educational coordination between different entities and enable fitting teacher training into staff calendars and university budgets (Kraft & Papay, 2014).

**Curriculum review:** To adopt and implement the student-centered teaching approach, there is a need to transform from a traditional to a competence-based curriculum (Bergsmann *et. al.*, 2015). This process can improve professional development by improving communication and collaboration among the university community, decreasing teachers' frustration.

**Opportunities for teacher collaboration:** Collaborating with colleagues has been linked to increased teacher effectiveness and improved student performance (Kraft & Papay, 2014). Collaboration increases teachers' willingness to adopt innovations. Building up a collaborative team spirit will improve the working environment and provide a platform for peer-support and sharing.

**Digital competencies:** Digital learning and teaching are necessities in today's world. Teachers need constant support and opportunities to gain new competences in the digital era: how to use different digital tools, utilize learning with smartphones and social media, and how to accommodate the student-centered approach in these (Gikas & Grant, 2013; Cochrane & Bateman, 2010).

### **Challenges facing early childhood teachers and educators' professional development**

The followings identified challenges hindering early childhood teachers and educators' professional development.

**Limited knowledge of opportunities:** Teachers may not be aware of the professional development opportunities available within their working environment. Professional development is more than specific training programmes. It also includes peer classroom observation, coaching, discussions, networking and classroom-based action research.

**Difficult working conditions:** Insufficient remuneration, overcrowded classrooms, lack of materials, unsafe working environment and lack of respect are some of the reasons that demotivate teachers, subsequently decreasing their performance and willingness to develop.

**Lack of support:** The lack of teacher professionalism is often a reflection of the lack of professionalism in the education system. Hierarchical and rigid education systems demotivate teachers (Gemedo & Tynjälä, 2015). Worn-out teachers may resist attempts to enhance their professional abilities, especially when professional development does not result in improvements in classroom practices or career.

**Lack of teacher identity:** Many teachers become teachers, not by will, but by necessity, and may thus, lack professional identity or desire to strengthen that identity.

**Lack of confidence:** Teachers' believing in themselves is positively correlated with teacher performance (Akyeampong, 2003). Teachers with low confidence resulting from inadequate professional support get frustrated. This in turn undermines teacher-student relationships, the quality of teaching, and the notion of teaching as a desirable profession. Teachers may not engage in professional development if they think nothing will change.

**Poorly designed professional development:** Professional development opportunities are often episodic, lack qualified facilitators and learning strategies, reflect budget constraints and face logistical challenges (Darling-Hammond, 2000). Not surprisingly, this causes teachers to perceive development programmes as low quality and irrelevant, demotivating participation.

**Insufficient policies and budget for professional development:** The lack of robust policies and strategies leads to poorly organized training for teachers. This shows up as difficulties in timetabling, lack of harmonized schemes and insufficient budget (Darling-Hammond, 2000).

## Conclusion

It could be concluded that the roles of teacher's professional development cannot be overemphasized in early childhood education as such it should be part of school development programmes.

## Suggestions

Based on the conclusion, the following suggestions were made:

1. Early childhood education providers should organize regular professional development for their staff.
2. Early childhood teachers and educators should endeavor to devote their resources to updating their knowledge of current practices in early childhood education
3. Early childhood education providers should collaborate to promote good practices among their staff
4. Professional development of early childhood teachers and educators should be part of the Ministry of Education's quality assurance evaluation.

## References

- Abidogun, B. G. (2022). "Teachers' Training and Development: A Panacea for Quality Education." *Journal of Educational Excellence*, 13(2), 1-20. doi: 10.5897/JEE2022.0385.
- Antoniou, P., & Kyriakides, L. (2013). A dynamic integrated approach to teacher professional development: Impact and sustainability of the effects on improving teacher behavior and student outcomes. *Teaching and Teacher Education*, 29, 1–12;
- Bautista, A., Cañadas, M. C., Brizuela, M. B., & Schliemann, A. D. (2015). Examining how teachers use graphs to teach mathematics in a professional development programme. *Journal of Education and Training Studies*, 3(2), 91-106.
- Bergsmann, E., Schultes, M. T., Winter, P., Schober, B., & Spiel, C. (2015). Evaluation of competence-based teaching in higher education: From theory to practice. *Evaluation and Program Planning*, 52, 1–9. <https://doi.org/10.1016/j.evalprogplan.2015.03.001>
- Borko, H. (2004). Professional development and teacher learning: Mapping the terrain. *Educational Researcher*, 33(8), 3-15.
- Clements, D. H., & Sarama, J. (2008). Experimental evaluation of the effects of a research-based preschool mathematics curriculum. *American Educational Research Journal*, 45(2), 443–494
- Cochrane, T., & Bateman, R. (2010). Smartphones give you wings: Pedagogical affordances of mobile Web 2.0. *Australasian Journal of Educational Technology*, 26(1), 1–14. <https://doi.org/10.14742/ajet.1098>
- Council of Australian Governments, (2009). Investing in the Early Years: A national early childhood development strategy. Canberra: Council of Australian Governments
- Damasio, A. (2010). *Self comes to mind: Constructing the conscious mind*. New York: Random House.
- Damasio, A. (2010). *Self comes to mind: Constructing the conscious mind*. New York:
- Darling-Hammond, L. (2000). Solving the Dilemmas of Teacher Supply, Demand, and Standards: How We Can Ensure a Competent, Caring, and Qualified Teacher for Every Child (p. 44). National Commission on Teaching & America's Future. <https://eric.ed.gov>
- Darling-Hammond, L., Hyler, M. E., & Gardner, M. (2017). *Effective Teacher Professional Development*. Palo Alto, CA: Learning Policy Institute.
- DiPaola, M. F., & Walther-Thomas, C. (2003). *Principals and Special Education: The Critical Role of School Leaders*. Routledge.
- Domitrovich, C. E., Gest, S. D., Gill, S., Bierman, K. L., Welsh, J. A., & Jones, D. J. (2009). Fostering high quality teaching with an enriched curriculum and professional development: Head Start REDI. *American Educational Research Journal*, 46, 567–597
- Eraut, M. (2004). Informal learning in the workplace. *Studies in Continuing Education*, 26(2), 247-273.
- Fukkink, R. G. & Lont, A. (2007). Early Childhood. *Research Quarterly*; 22:294-311.
- Fullan, M. (2001). *The New Meaning of Educational Change*. Routledge.
- Gemeda, F. T., & Tynjälä, P. (2015). Exploring Teachers' Motivation for Teaching and Professional Development in Ethiopia: Voices from the Field. *Journal of Studies in Education*, 5(2), 169–186. <https://doi.org/10.5296/JSE.V5I2.7459>
- Gikas, J., & Grant, M. M. (2013). Mobile computing devices in higher education: Student perspectives on learning with cellphones, smartphones & social media. *The Internet and Higher Education*, 19, 18–26. <https://doi.org/10.1016/j.iheduc.2013.06.002>

- Ginsburg, H., Kaplan, R., Cannon, J., Cordero, M., Eisenband, J., & Galanter, M., et al. (2005). Helping early childhood educators to teach mathematics. In M. Zaslow & I. Martinez-Beck (Eds.), *Critical issues in early childhood professional development* (pp. 171–202). Baltimore: Brookes.
- Goldberg, M. F. (2003). The Qualities of Great Teachers. Dalam M. Scherer, *Keeping Good Teachers* (hal. Chapter 26). VA: ASCD.
- Gopnik, A. (2009). *The philosophical baby: What children's minds tell us about truth, love, and the meaning of life*. New York: Farrar, Straus, & Giroux
- Heller, J. I., Daehler, K. R., Wong, N., Shinohara, M., & Miratrix, L. W. (2012). Differential effects of three professional development models on teacher knowledge and student achievement in elementary science. *Journal of Research in Science Teaching*, 49(3), 333–362;
- Howes, C., & Oldham, E. (2001). Processes in the formation of attachment relationships with alternative caregivers. In A. Goncu & E. Klein (Eds.), *Children in play, story and school*. New York: Greenwood
- Ingvarson L, Meiers M, & Beavis A. (2005). Factors affecting the impact of professional development programs on teachers' knowledge, practice, student outcomes, & efficacy. *Education Policy Analysis Archives*;13(10):1-26.
- Jones, W. J., & Dexter, S. (2014). How teachers learn: the roles of formal, informal, and independent learning. *Educational Technology Research & Development*, 62(3), 367- 384.
- Kraft, M. A., & Papay, J. P. (2014). Can Professional Environments in Schools Promote Teacher Development? Explaining Heterogeneity in Returns to Teaching Experience. *Educational Evaluation and Policy Analysis*, 36(4), 476–500. <https://doi.org/10.3102/0162373713519496>
- Landry, S. H., Swank, P. R., Smith, K. E., Assel, M. A., & Gunnewig, S. B. (2006). Enhancing early literacy skills for preschool children: Bringing a professional development model to scale. *Journal of Learning Disabilities*, 39, 306–324
- Lohman, M. C. (2009). A survey of factors influencing the engagement of information technology professionals in informal learning activities. *Information Technology, Learning and Performance Journal*, 25(1), 43-63
- Mashburn, A. J., & Pianta, R. C. (2007). Opportunity in early education: Improving teacher-child interactions and child outcomes.:1-42.
- Mashburn, A. J., Pianta, R. C., Hamre, B. K., Downer, J. T., Barbarin, O., Bryant, D., & Burchinal, M. (2008). Measures of classroom quality in prekindergarten and children's development of academic, language, and social skills. *Child Development*, 79(3), 732–749
- Methlagl, M. (2022). Patterns of teacher collaboration, professional development and teaching practices: A multiple correspondence analysis of TALIS 2018. *International Journal of Educational Research Open*, 3, 100137. <https://doi.org/https://doi.org>
- Musa, S., Nurhayati, S., Jabar, R., Sulaimawan, D., & Fauziddin, M. (2022). Impact of professional development among early childhood educators. *Obsesi*, 6(5), 4239–4254.
- National Commission on Teaching and America's Workforce. (2016). *What matters now: A new compact for teaching and learning*. Arlington, VA: National Commission on Teaching and America's
- National Research Council & Institute of Medicine, (2000). *From neurons to neighborhoods: The science of early childhood development*. In J. P. Shonkoff & D. A. Phillips (Eds.), *Board on Children, Youth, and Families; Commission on Behavioral and Social Sciences and Education*. Washington, DC: National Academy Press, 2000.
- Neuman, S. B., & Cunningham, L. (2009). The impact of professional development and coaching on early language and literacy instructional practices. *American Educational Research Journal*, 46(2), 532–566.
- Nolan, A. & Molla, T. (2019) 'Supporting teacher professionalism through tailored professional learning. *London Review of Education*, 17 (2): 126–140. DOI <https://doi.org/10.18546/LRE.17.2.03>
- Nurhayati, S. (2020). Improving teachers' entrepreneurship skills in the industry 4.0 through online business workshops. In *Teacher Education and Professional Development in Industry 4.0*. Taylor & Francis.
- Nurhayati, S. (2022). Strategies to improve teachers' competences in early childhood education. In Y. Suharyat (Ed.), *Professional development*. Media Sains Indonesia.
- Nurhayati, S. (2024). Digital literacy in adult continuing education: implementation, best practices, and emerging trends. In *Lifelong Education, Adult, and Continuing* (pp. 9–18)



- Ochshorn, S. (2011). Forging a new framework for professional development: A report on “The science of professional development in early childhood education: A national summit.” Washington, DC: ZERO TO THREE.
- Padagas, R. C. (2019). Pre-service teachers' competencies in a work-based learning environment. *African Educational Research Journal*, 7(3), 130–142. DOI: 10.30918/AERJ.73.18.076.
- Penuel, W. R., Gallagher, L. P., & Moorthy, S. (2011). Preparing teachers to design sequences of instruction in Earth systems science: A Comparison of three professional development programs. *American Educational Research Journal*, 48(4), 996–1025.
- Pianta, R. C. (2011). Individualized and Effective Professional Development Supports in Early Care and Education Settings. *Journal of ZERO TO THREE: National Center for Infants, Toddlers, and Families*. Volume 32 No. 1, Pp 4-9
- Pianta, R., Mashburn, A., Downer, J., Hamre, B., & Justice, L. (2008). Effects of web-mediated professional development resources on teacher-child interactions in pre-kindergarten classrooms. *Early Childhood Research Quarterly*, 23(4), 431–451.
- Powell, D. R., Diamond, K. E., Burchinal, M. R., & Koehler, M. J. (2010). Effects of an early literacy professional development intervention on head Start teachers and children. *Journal of Educational Psychology*, 102(2), 299–312
- Random House. Gebhard, B., Ochshorn, S., & Jones, L. (2010). Toward a brighter future for our youngest children: Building a strong infant-toddler workforce. Washington, DC: ZERO TO THREE.
- Raver, C. C., Jones, A. S., Li-Grining, C. P., Metzger, M., Smallwood, K., & Sardin, L. (2008). Improving preschool classroom processes: Preliminary findings from a randomized trial implemented in head Start settings. *Early Childhood Research Quarterly*, 23(1), 10–26.
- Richter, D., Kunter, M., Klusmann, U., Lüdtke, O., & Baumert, J. (2011). Professional development across the teaching career: Teachers' uptake of formal and informal learning opportunities. *Teaching and Teacher Education*, 27(1), 116-126
- Rogoff, B. (2003). The cultural nature of human development. New York: Oxford University Press
- Rohman, D., & Nurhayati, S. (2023). Collaborative Supervision Strategy Integrated with Sispna Application for Improving Early Childhood Institution's Accreditation. *Jurnal Inovasi Pendidikan Guru RaudhatulAthfal*, 11(2). <https://doi.org/10.21043/thufula.v11i2.22521>
- Sadowski M. (2006). Core knowledge for PK-3 teaching: Ten components of effective instruction; 5:1-9.
- Sheridan, S. M., Edwards, C. P., Marvin, C. A., & Knoche, L. L. (2009). Professional development in early childhood programs: Process issues and research needs. *Early Education and Development*, 20(3), 377-401.
- Shonkoff, J. P. (2007). The science of early childhood development.:1-13.
- Stronge, J. H. (2018). Qualities of Effective Teachers. ASCD
- SulistyaningrumIndrawati, C. D. Octoria, D. (2016). Continuous Professional Development to Improve the Teachers' Competencies. Proceeding The 2nd International Conference on Teacher Training and Education. *Sebelas Maret University* 656 Volume 2 Number 1 25002–4124
- Tjabolo, S. A., & Ota, L. G. (2019). The evaluation of islamic education teachers' performance. *Jurnal Pendidikan Islam*, 5(1), 25–38.
- Trost, C. (2006). Ready to teach? providing children with the teachers they deserve. :1-26.
- Trotter, Y. D. (2006). Adult learning theories: Impacting professional development programsme. *Delta Kappa Gamma Bulletin*, 72(2), 8
- Wagner, B. D., & French, L. (2010). Motivation, work satisfaction, and teacher change among early childhood teachers. *Journal of Research in Childhood Education*, 24(2), 152-171.
- Yong, M., Daud, K. & Rahman, A. (2015). Competence of Pre-service preschool teachers at Teacher Education Institute of Malaysia. *International Educative Research Foundation and Publisher*, 3(5), 46–57
- Zaslow, M. (2014). General Features of Effective Professional Development. Brookes Publishing.