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PRACTICAL SKILLS IN EARLY CHILDHOOD EDUCATION FOR SUSTAINABLE VOCATIONAL READINESS: A SYSTEMATIC LITERATURE REVIEW

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Abstract

This study aims to analyze trends, themes, contributions, and gaps of previous research on early childhood practical skills as the foundation of sustainable vocational readiness in the perspective of *the Sustainable Development Goals* (SDGs). This study uses the *Systematic Literature Review* design with PRISMA stages, namely *identification, screening, eligibility,* and *included*. Data were obtained through Publish or Perish from Google Scholar and CrossRef with a publication range of 2020–2025. From the initial 300 articles, screening was carried out based on titles, abstracts, keywords, topic suitability, and availability of bibliographic information, so that 25 priority articles were obtained for analysis. Data was analyzed using *thematic synthesis* by grouping articles into the themes of practical skills and *life skills*, SDGs and continuing education, future or vocational readiness, and teacher and curriculum competencies. The results of the study show that practical skills such as self-care, tidying up the learning environment, completing simple tasks, sorting waste, gardening, and working together contribute to the formation of independence, discipline, responsibility, problem-solving, and sustainability awareness. This study concludes that early childhood vocational readiness is not interpreted as direct work readiness, but rather as the initial process of forming productive habits, independent character, and social responsibility relevant to sustainable development.

Keywords

Early Childhood, Practical Skills, SDGs, Systematic Literature Review, Vocational Readiness.

INTRODUCTION

Early childhood education plays a fundamental role in laying the foundation for children's development across cognitive, social, emotional, moral, and life skills. At this stage, children need not only mastery of basic academic concepts but also practical experiences that help them learn to be independent, responsible, and cooperative; complete simple tasks; and adapt to their environment. Practical skills such as tidying up study tools, cleaning the play area, serving one's own needs, sorting garbage, planting, and completing daily activities independently are important components of building life skills (Curtis & Carter, 2026). In the context of sustainable development, these skills are also related to the *Sustainable Development Goals* (SDGs) agenda, particularly the goals of quality education, health and well-being, responsible consumption, and environmental stewardship.

The issue of early childhood practical skills is important because education at this level is often still more directed towards academic readiness, such as reading, writing, and arithmetic, than long-term life readiness. In fact, practical skills contribute greatly to the development of independence, discipline, responsibility, cooperation, perseverance, and problem-solving skills (Prianto et al., 2022). From a vocational readiness perspective, these skills can be understood as the initial basis for a positive work attitude in the future. Vocational readiness in the context of early childhood is certainly not interpreted as a child's readiness to work directly, but as an early developmental process that forms productive habits, responsibility for tasks, concern for the environment, and the ability to participate in social activities (Carr et al., 2010). Therefore, the study of practical skills in early childhood needs to be directed more systematically so that it does not stop at routine habituation, but is also associated with sustainable vocational readiness.

Several previous studies have shown that practical and *life skills*, as well as experiential learning, have an important influence on early childhood development. Studies of *practical life activities* generally show that practical activities can increase children's independence, concentration, discipline, cooperation, and confidence (Suprihatin & Widyasari, 2023; Susilawati & Diana, 2024). Research on *life skills education* also confirms that life skills in early childhood can be developed through social interaction, habituation, play, and children's involvement in simple tasks (Loretha et al., 2023) (Nurani & Pratiwi, 2020). Meanwhile, studies on sustainable education show that sustainability values need to be introduced from an early age so that students develop concern for health, the environment, social responsibility, and the sustainability of life (Chawla, 2020; Debrah et

al., 2021). However, these studies still tend to operate within their respective discussion spaces, so the connections among practical skills, early childhood education, the SDGs, and vocational readiness have not been systematically compiled into a single framework.

Based on the initial search using Publish or Perish on scientific articles published in the 2020–2025 range, 300 articles related to the main keywords, *early childhood education, practical skills, life skills, sustainable development goals, education for sustainable development, vocational readiness, and future readiness* were obtained. Of the 300 articles, an initial screening was carried out based on titles, keywords, abstracts, and topic suitability. The initial selection yielded 46 articles relevant to the study's focus and worthy of inclusion in the subsequent review stage. Furthermore, the articles were remapped based on the proximity of their themes, the availability of bibliographic information, their relevance to early childhood education, and their contributions to practical skills, the SDGs, and vocational readiness. From this process, 25 priority articles were selected for further analysis in the SLR synthesis.

Mapping of these articles shows that previous studies have developed in several thematic groups. The first group discussed practical skills and *life skills* in early childhood education, especially those related to independence, responsibility, discipline, cooperation, and positive habits. The second group discussed sustainable education and the integration of the SDGs into early childhood learning, particularly in environmental awareness, responsible consumption, and character education. The third group discussed children's readiness to face the future through the development *of school readiness*, *future skills*, social skills, creativity, and problem-solving skills. The fourth group discusses teacher competencies, curriculum design, and learning strategies that support life skills and continuing education. This mapping shows that practical skills, SDGs, and vocational readiness have strong conceptual relationships, but have not been widely analyzed in an integrated SLR study.

From these trends, several research gaps can be identified. First, the study of practical skills in early childhood is still largely framed as a habituation activity, not yet as the foundational basis for long-term vocational readiness. Second, research on vocational readiness is still predominantly conducted among adolescent students, college students, or vocational education graduates, so the initial stage of readiness formation in early childhood has not been widely studied. Third, the integration of practical skills, *life skills*, the SDGs, and vocational readiness has not been widely mapped in the literature. Fourth, previous research remains limited in its presentation of a thematic

synthesis of the forms of practical skills, indicators of early vocational readiness, and their contribution to sustainable human development. This gap highlights the need for SLR studies that can map the direction of prior research in a more objective, structured, and accountable manner.

The novelty of this research lies in the effort to compile a systematic synthesis of practical skills in early childhood as the foundation of sustainable vocational readiness from the perspective of the SDGs. Unlike previous research that tends to discuss practical skills as a habituation of independence or vocational readiness at higher levels of education, this article places practical skills in early childhood as part of a long-term developmental process. Through a *Systematic Literature Review* approach, this study not only synthesizes prior research findings but also maps the research trajectory, identifies dominant themes, identifies research gaps, and builds a conceptual framework that connects early childhood education, *life skills*, the SDGs, and vocational readiness.

Based on this description, this study aims to analyze trends, themes, contributions, and gaps in prior research on early childhood practical skills as a foundation for sustainable vocational readiness from the perspective of *the Sustainable Development Goals*. In particular, this research aims to identify the forms of practical skills developed in early childhood education, map their relationship to the values of the SDGs, and explain their contribution to the development of independence, responsibility, cooperation, problem-solving, and sustainability awareness. Theoretically, this study enriches the discourse of early childhood education, *life skills education*, and *education for sustainable development*. In practice, the results of this research can serve as a basis for educators, early childhood education managers, curriculum developers, and future researchers in designing practical skills learning models that are systematic, contextual, and oriented towards sustainable life readiness.

METHOD

This study uses the Systematic Literature Review (SLR) design to identify, select, evaluate, and synthesize prior articles (Cabrera et al., 2023) that discuss practical skills in early childhood as a foundation for sustainable vocational readiness from the perspective of *the Sustainable Development Goals*. The SLR design was chosen because this research no longer focuses on a single location or institution but rather on a systematic mapping of prior research on early childhood education, practical skills, *life skills*, the SDGs, and vocational readiness. The review process follows *the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA)* framework, which consists of 4

main stages: *Identification, Screening*, *Eligibility*, *and Inclusion* (Selcuk, 2019). The use of PRISMA is intended so that the process of searching, selection, and determining articles is carried out in a transparent, structured, and traceable manner.

The research data consists of scientific journal articles published between 2020 and 2025. Article searches are conducted using *the Publish or Perish* application, with the main search sources being Google Scholar and CrossRef. The keywords used in the search process include: "early childhood education", "practical skills", "life skills", "sustainable development goals", "education for sustainable development", "vocational readiness", and "future readiness". In addition to English keywords, the search also considers Indonesian terms such as "early childhood education", "life skills", "child independence", "early childhood education", and "SDGs". The combination of these keywords is used to retrieve articles that are conceptually close to the research focus.

The identification stage is carried out by searching the article using Publish or Perish with a predetermined keyword combination. From the initial search, 300 articles were identified on early childhood education, practical skills, *life skills*, the SDGs, sustainable education, and future readiness. At the screening stage, articles are filtered based on title, year of publication, keywords, abstract, and initial relevance to the study's focus. Articles that are not in accordance with the theme, are not in the range of 2020–2025, are not in the form of journal articles, duplicates, or do not have adequate bibliographic information are excluded from the selection process. From this stage, 46 articles were obtained that were considered relevant at the beginning and worthy of further review.

The eligibility stage is carried out by examining more deeply the suitability of the article based on the abstract content, the focus of the study, the availability of the complete text, the clarity of the journal source, and the relationship of the article with early childhood education, practical skills or *life skills*, SDGs, or continuing education, as well as vocational readiness or future readiness. At this stage, the articles are grouped into several themes: practical and *life skills* in early childhood education; continuing education and the SDGs; future readiness and vocational foundations; and teacher competence and curriculum design. From the 46 articles that passed the initial selection, the 25 most relevant priority articles were selected to be analyzed in the final synthesis. Thus, the included stage yielded 25 articles that served as the primary basis for the SLR analysis.

Inclusion criteria in this study include: scientific journal articles published in 2020–2025; articles in Indonesian or English; articles discussing early childhood education, early childhood education, preschool, kindergarten, or early childhood education; articles related to practical skills,

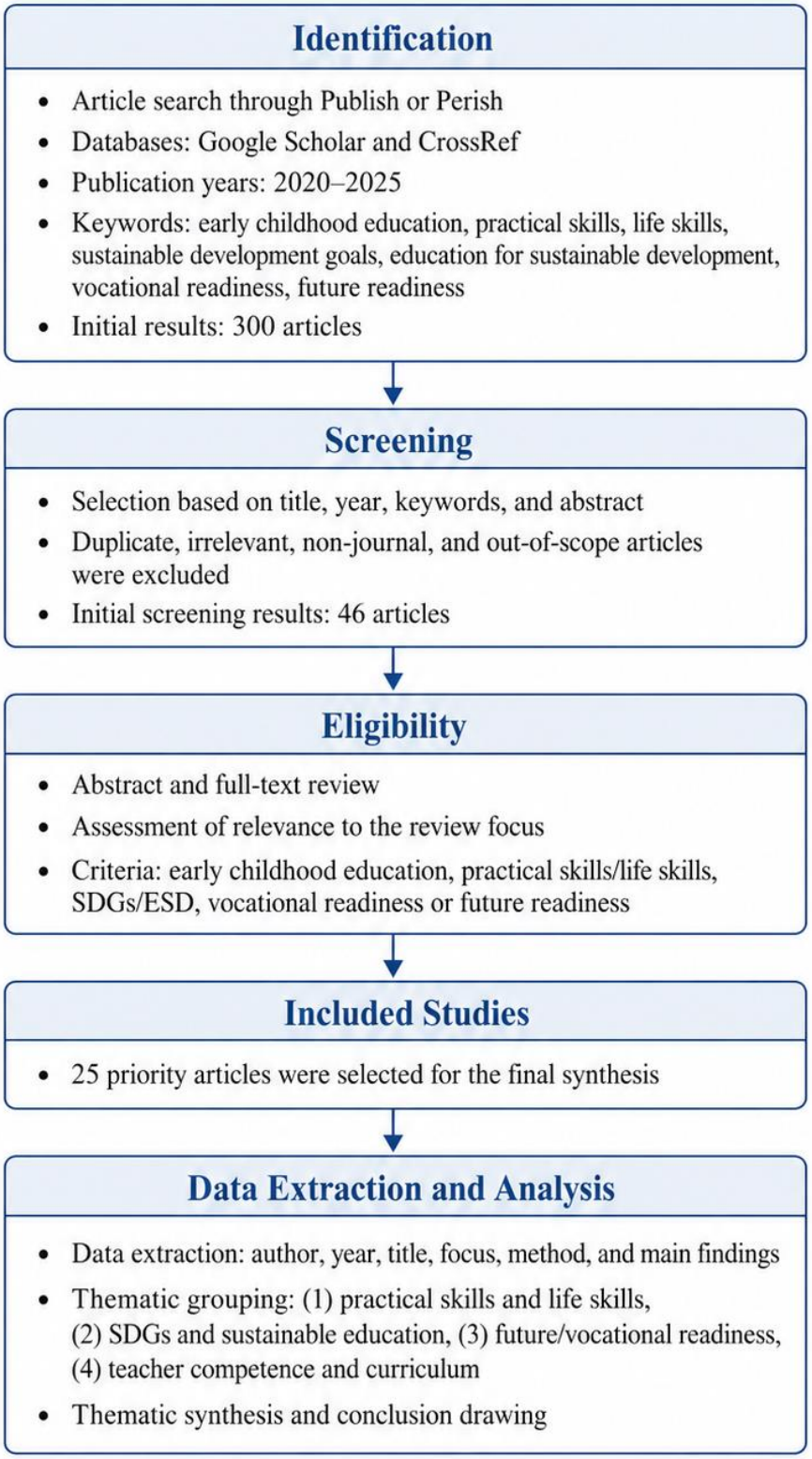
life skills, independence, responsibility, cooperation, SDGs, continuing education, *future readiness*, or *vocational readiness*; and the article has searchable bibliographic information. Meanwhile, exclusion criteria include: articles that are not related to early childhood; articles that only discuss vocational education, vocational schools, students, or the world of work without a conceptual relationship with early childhood education; popular non-journal articles; duplicate articles; articles outside the specified year range; and articles that do not have adequate access or information to analyze.

Data analysis was carried out using thematic synthesis. The first stage is data reduction, which involves extracting the key information from each article, including the title, author, year, source, study focus, method, and main results. The second stage is thematic categorization, which is grouping articles based on the main themes that emerge from the search results. The third stage is the synthesis of findings, which involves comparing, connecting, and interpreting the results of previous research to identify general patterns, contributions, and gaps in the field. The fourth stage is drawing conclusions, which involves formulating a conceptual understanding of the role of early childhood practical skills as the foundation of sustainable vocational readiness from the perspective of the SDGs.

To maintain the quality of the articles analyzed, each article is judged based on the relevance of the topic, the clarity of the research objectives and methods, the strength of the results, and its contribution to the SLR's focus. Articles directly related to early childhood education, practical or *life skills*, and the SDGs or future readiness are given higher priority. Articles that are only partially related are still considered as supporting if they contribute to theoretical or contextual understanding. With this procedure, the research is expected to produce a systematic, relevant synthesis of the literature that can serve as the basis for further studies on early childhood education, life skills, the SDGs, and sustainable vocational readiness.

Figure 1. PRISMA-Based SLR Research Method Flow

Systematic Literature Review on early childhood practical skills as a foundation for sustainable vocational readiness



Source: Processed by the researcher

FINDINGS AND DISCUSSION

Findings

The results section presents the article selection process, publication characteristics, mapping of selected articles, and thematic synthesis of the analyzed literature. This study uses data from Publish or Perish searches of 300 articles in the 2020-2025 range. The article was obtained using keywords related to early childhood education, practical skills, life skills, sustainable development goals, education for sustainable development, vocational readiness, and future readiness. After initial screening based on title, year, keywords, abstract, and topic relevance, a total of 46 articles were considered relevant. Of these, 25 articles were selected as priority articles for the final synthesis because they were most closely aligned with the focus on early childhood education, practical or life skills, SDGs/ESD, and vocational or future readiness.

Table 1. PRISMA-Based Article Selection Flow

No	PRISMA Stage	Selection Procedure	NOA	Remarks
1	Identification	Article search through Publish or Perish based on Google Scholar and CrossRef in the range 2020-2025.	300	All the initial articles that appear are based on keyword combinations.
2	Screening	Selection based on title, year, keywords, abstract, duplication, and initial relevance.	46	Irrelevant, non-journal, duplicate, or out-of-focus articles are excluded.
3	Eligibility	Feasibility study based on the proximity of the theme, bibliographic information, access to the full text, and the relevance to PAUD, life skills/practical skills, SDGs/ESD, or readiness.	25	The most appropriate priority article is selected for the final synthesis.
4	Included	The article is used as the main basis for SLR analysis.	25	Articles are analyzed through data extraction and thematic synthesis.

Source: Data processed by the researcher, 2026.

Based on Table 1, the article selection process narrows the initial 300 articles to 25 priority articles. This filtering is important because not all articles in search results directly align with the study's focus. Some articles discuss vocational education at a higher level, some discuss the SDGs in general, and some do not specifically address early childhood education. Therefore, the final article was selected for its conceptual proximity to early childhood practical skills, continuing education,

and long-term life and vocational readiness.

Table 2. Characteristics of Articles by Year of Publication

No	Year	NOA	Percentage
1	2020	3	12.0%
2	2021	4	16.0%
3	2022	5	20.0%
4	2023	6	24.0%
5	2024	2	8.0%
6	2025	5	20.0%
	Total	25	100.00%

Source: Data processed by the researcher, 2026.

The distribution of publication years shows that studies related to early childhood education, SDGs/ESD, life skills, and readiness have increased in recent years. The 2023 articles were the most, followed by 2022 and 2025. This pattern indicates that the issue of early childhood education within the framework of sustainability and future readiness has received more attention since the SDGs agenda began to be widely integrated into the global education discourse.

Table 3. Mapping 25 SLR Priority Articles

No	Author/Year	Article Title	Key Focus	Role in Synthesis
1	(Chen & Huang, 2025)	Enhancing early childhood health and safety education: the impact of life skills-based teaching strategies	PAUD + life skills/practical skills	It is closest to the SLR focus because it discusses early childhood health and safety education through life skills-based strategies; directly relevant...
2	(Hadela & Anđić, 2021)	Necessary competences of early childhood educators for implementing education for sustainable development: A review of the research literature	Early childhood education + ESD/SDGs + educator competence	Review articles on the competence of early childhood educators to implement education for sustainable development; strong as a reference for the synthesis of teachers, SDGs, and...
3	(Rad et al., 2022)	Pathways to inclusive and equitable quality early childhood education for achieving SDG4 goal—a scoping review	Early childhood education + SDG 4.2 + inclusion	Scoping review of the path to quality, inclusive, and equitable early childhood education to achieve SDG 4; relevant as the foundation of the SDGs in the context of children's education.
4	(Chapman & O'Gorman, 2022)	Transforming learning environments in early childhood contexts through the arts:	Early Childhood Education + SDGs + Learning Environment	Discuss the transformation of the early childhood learning environment through the arts in response

		Responding to the United Nations Sustainable Development Goals		to the SDGs; suitable for explaining the integration of concrete activities and...
5	(Collins & Garrity, 2025)	Early childhood educators' understanding of education for sustainable development	PAUD + ESD + educator understanding	Specifically discusses early childhood educators' understanding of ESD; It is important to look at the readiness of institutions and teachers in integrating sustainability.
6	(Ruto-Korir et al., 2020)	Sustainability of early childhood education in Kenya: Where are we at the beginning of sustainable development goals	PAUD + SDGs + institutional sustainability	Discussing the sustainability of early childhood education in the early context of achieving the SDGs; relevant to build the argument that PAUD is part of the agenda...
7	(Ogunlade, 2023)	A novel pedagogical tool for childhood education in STEM and STEAM towards achieving sustainable development goals in africa	Childhood education + SDGs + readiness	Linking childhood education, STEM/STEAM, SDGs, and school readiness/work competitiveness; Suitable for bridging practical skills with time readiness...
8	(Li & Rao, 2023)	Advancing equity in early childhood development in China: Progress in meeting Sustainable Development Goal Target 4.2	Early childhood development + SDG 4.2	Assessing the progress of fulfilling SDG Target 4.2 on early childhood development; strong to show the relationship between early childhood education, school readiness, and educational justice.
9	(Nair et al., 2023)	Promoting school readiness in children with developmental disabilities in LMICs	School readiness + children + inclusion	Focus on school readiness of children with developmental disabilities in LMICs; relevant for indicators of early readiness, inclusion, and long-term learning readiness...
10	(Smythe et al., 2022)	The role of parenting interventions in optimizing school readiness for children with disabilities in low and middle income settings	Parenting intervention + school readiness	Discussing the role of parenting intervention in optimizing the school readiness of children with disabilities; Supports the family dimension, initial readiness and foundation...
11	(Black et al., 2021)	The principles of Nurturing Care promote human capital and	Nurturing care + human capital	Connecting nurturing care with human capital from preconception to

		mitigate adversities from preconception through adolescence		adolescence; It is relevant for the argument that sustainable vocational readiness begins...
12	(Chandra, 2024)	Shaping foundational learning skills: A harbinger to the future of work	Foundational skills + future of work	Discuss foundational learning skills as an introduction to the future of work; It is relevant to connect basic skills with the future...
13	(Brush et al., 2022)	Social and emotional learning: From conceptualization to practical application in a global context	SEL + practical application	Discussing social and emotional learning from concepts to practical applications; relevant for indicators of cooperation, responsibility, communication, and regulation...
14	(Murray, 2023)	What is the purpose of education? A context for early childhood education	Educational + PAUD objectives	Provide philosophical context about the purpose of education in early childhood education; useful to strengthen the argument that early childhood education is not only academic, but the formation of...
15	(Parvin, 2025)	Comparative analysis of child development approaches across different education systems globally	Child development + global education system	Analyzing child development approaches to various education systems; relevant as an international comparison in strengthening the foundation of child development.
16	(Tripon, 2024)	Nurturing sustainable development: the interplay of parenting styles and SDGs in Children's development	Parenting style + SDGs + child development	Linking parenting styles, SDGs, and child development; Supporting the theme of family and social environment as factors in the formation of practical skills and...
17	(Olusanya et al., 2023)	Sustainable Development Goals summit 2023 and the global pledge on disability-focused early childhood development	SDGs + early childhood development + disability	Discuss the global commitment of the SDGs to disability-based early childhood development; strong for the perspective of inclusion and sustainable human development.
18	(Cabello et al., 2021)	Disaster risk reduction education: Tensions and	ESD/SDGs + preparedness	Discussing disaster risk reduction education,

		connections with sustainable development goals		preparedness, and SDGs with the mention of ECE; supporting the themes of preparedness, responsibility, and survival skills.
19	(Taimur & Sattar, 2020)	Education for sustainable development and critical thinking competency	ESD + critical thinking	It is relevant as a foundation that ESD is related to critical thinking; supporting problem solving indicators in sustainable vocational readiness.
20	(Hoang et al., 2020)	Introducing a tool to gauge curriculum quality under Sustainable Development Goal 4: The case of primary schools in Vietnam	SDG 4 + curriculum quality	Provide curriculum quality measurement tools under SDG 4; useful for discussions of curriculum quality and continuous learning despite the context...
21	(Khajuria, 2025)	Integrating circular economy education into education for sustainable development: A conceptual advancement and typology of integration strategies	Circular economy + ESD	Providing a conceptual framework for the integration of circular economy education into ESD; relevant to the theme of environmental practical skills such as sorting waste,...
22	(Bulut & Borromeo Ferri, 2025)	Bridging mathematical modelling and education for sustainable development in pre-service primary teacher education	ESD + teacher education	Discussing the integration of mathematical modelling and ESD in the education of prospective teachers; Supporting the dimension of teacher readiness to implement sustainability learning.
23	(Nayasi et al., 2022)	Readiness to teach for cultural inclusivity and sustainable learning: Views of preservice primary teachers in Fiji	Readiness to teach + sustainable learning	Contains the concepts of readiness to teach and sustainable learning; It is relevant to read the readiness of educators in building inclusive and sustainable learning.
24	(Parveen, 2022)	Role of Teacher in promoting Education for Sustainable Development (ESD) and its correlation with SDG4	Teacher role + ESD + SDG 4	Discussing the role of teachers in promoting ESD and its relation to SDG 4; support a synthesis of the role of educators.
25	(AlAli et al., 2023)	Towards a sustainable future: Evaluating the ability of STEM-based	STEM-based teaching + SDGs	Evaluating STEM-based learning capabilities in achieving the SDGs;

	teaching in achieving sustainable development goals in learning	Supporting the themes of practical learning activities, problem solving, and sustainability learning.

Source: Data processed by the researcher, 2026.

Table 3 shows that the articles analyzed were not only centered on a single theme but also spanned several interrelated fields of study. Some of the articles discuss practical and life skills directly; some discuss ESD and SDGs in early childhood education; some discuss school and future readiness; and some discuss the role of teachers, curriculum, and the learning environment. This diversity shows that early childhood practical skills as the foundation of sustainable vocational readiness are interdisciplinary themes that connect child development, pedagogy, sustainability, and future readiness.

Table 4. Thematic Synthesis of Selected Articles

No	Theme Synthesis	Supporting Articles	Key Findings	The Meaning of Sustainable Vocational Readiness
1	Practical skills and early childhood life skills	(Brush et al., 2022; Chen & Huang, 2025; Murray, 2023; Parvin, 2025)	Life skills, social-emotional skills, experiential learning, and practical activities help children build independence, responsibility, and self-regulation.	It is the initial basis for the formation of a positive work attitude, discipline, responsibility, and the ability to complete simple tasks.
2	SDGs/ESD in early childhood education	(Chapman & O'Gorman, 2022; Collins & Garrity, 2025; Li & Rao, 2023; Olusanya et al., 2023; Rad et al., 2022; Ruto-Korir et al., 2020)	The SDGs and ESD emphasize quality education, inclusion, environmental sustainability, and equal access from an early age.	Strengthening the orientation that children's readiness is not only academic, but also social, ecological, and sustainable.
3	School readiness, future readiness, and vocational foundation	(Black et al., 2021; Chandra, 2024; Nair et al., 2023; Ogunlade, 2023; Smythe et al., 2022)	Future readiness is built through a foundation of learning, family support, child development, and contextual learning experiences.	It shows that vocational readiness can start from the formation of a foundation for learning, creativity, perseverance, adaptation, and problem solving.
4	Teacher competencies, curriculum, and continuous learning environment	(Bulut & Borromeo Ferri, 2025; Hadela & Anđić, 2021; Hoang et al., 2020; Nayasi et al., 2022; Parveen, 2022)	The implementation of ESD requires teacher competence, a supportive curriculum, an inclusive learning environment, and	Teachers and curriculum are the link between children's practical activities, SDGs values, and the formation of long-term life readiness.

			pedagogical readiness.	
5	Sustainability, problem-solving, and environmental responsibility skills	(AlAli et al., 2023; Cabello et al., 2021; Khajuria, 2025; Taimur & Sattar, 2020; Tripon, 2024)	ESD deals with critical thinking, circular economy, preparedness, STEM, and environmental responsibility.	Expanding the meaning of practical skills to the ability to think critically, protect the environment, use resources responsibly, and solve problems.

Source: Data processed by the researcher, 2026.

The thematic synthesis in Table 4 shows that practical skills cannot be understood as simple technical skills alone. In the context of early childhood education, practical skills intersect with life skills, social-emotional learning, sustainability education, school readiness, and character strengthening. Therefore, practical skills are a strategic foundation for sustainable vocational readiness, especially because they foster the productive habits children need for long-term development.

Discussion

Practical Skills as the Initial Foundation of Vocational Readiness

The results of the synthesis show that practical skills in early childhood play an important role in forming the foundation of vocational readiness. Vocational readiness in the context of early childhood is understood not as direct entry into the world of work, but as developmental readiness encompassing independence, responsibility, discipline, cooperation, self-regulation, and the ability to complete simple tasks. (Chen & Huang, 2025) emphasizes the importance of life skills-based learning strategies in early childhood health and safety education. These findings suggest that practical skills can be linked to a child's ability to take care of themselves, understand risks, and act responsibly in daily life.

In this perspective, simple activities such as tidying up tools, keeping clean, sorting objects, following instructions, working in groups, and completing routine tasks can be framed as learning experiences with vocational value from an early age. These activities foster a productive mindset because children learn to understand their responsibilities towards themselves, their friends, their teachers, and the environment. This synthesis aligns with the article by (Brush et al., 2022), which emphasizes the importance of social and emotional learning in practical application. Thus, vocational skills do not emerge suddenly at the secondary or higher education level but are built through practical habituation from an early age (Schulz et al., 2023).

SDGs Integration Expands the Meaning of Practical Skills

The second finding shows that integrating the SDGs with education for sustainable development broadens the meaning of practical skills in early childhood. Practical skills are not only related to personal independence but also to awareness of sustainability, social concern, and ecological responsibility. The article by (Rad et al., 2022) positions inclusive, high-quality early childhood education as part of efforts to achieve SDG 4. (Chapman & O'Gorman, 2022) article shows that the early childhood learning environment can be transformed through art to respond to the SDGs agenda. Meanwhile, (Collins & Garrity, 2025) emphasized that educators' understanding of ESD is an important element in integrating sustainability values into early childhood learning.

These findings show that practical activities such as planting, sorting waste, using materials sparingly, cleaning the environment, and maintaining health can be structured as a concrete form of SDG learning that aligns with children's development. In this way, the child not only learns to perform a task but also understands the value behind the action (Tomasello, 2018). Practical skills then become a means of building awareness that every action is connected to health, the environment, togetherness, and the sustainability of life. This is what distinguishes ordinary practical skills from practical skills oriented towards ongoing vocational readiness.

Future Readiness is Built through the Foundation of Early Learning

A group of articles on school readiness, future readiness, and foundational skills shows that children's future readiness is strongly influenced by the quality of learning experiences in early childhood. (Li & Rao, 2023) article discusses progress toward meeting SDG 4.2 in early childhood development in China, while (Nair et al., 2023; Smythe et al., 2022) emphasize the importance of school readiness for children with disabilities and the need for parenting interventions. (Chandra, 2024) also places foundational learning skills as an important marker for the future of work. This set of findings strengthens the argument that sustainable vocational readiness must begin by building a foundation of learning, not just by mastering job skills in adolescence. In the context of early childhood education, the foundation lies in children's ability to follow rules, complete activities, work together, make simple decisions, manage emotions, and solve problems (Yogman et al., 2018). These skills are an important prerequisite for developing a productive character in the future. Thus, practical and life skills have strategic value because they serve as a bridge between early childhood learning and the demands of future life that are increasingly complex, adaptive, and sustainability-

oriented.

Teacher's Role, Curriculum, and Learning Environment

The synthesis of the article also shows that the success of sustainable practical skills development is strongly influenced by teacher competence, curriculum design, and learning environment. (Hadela & Anđić, 2021) emphasized the need for early childhood educators' competence in implementing sustainable education for sustainable development. (Hoang et al., 2020) highlight the importance of curriculum quality within the framework of SDG 4, while (Parveen, 2022) discusses the role of teachers in promoting ESD and its correlation with SDG 4. These findings show that the value of the SDGs cannot be automatically reflected in learning if teachers lack adequate conceptual and pedagogical readiness.

Teachers have an important position as designers of practical learning experiences. Simple activities can be meaningful if teachers can relate them to the values of responsibility, cooperation, health, the environment, and sustainability. The curriculum also needs to provide space for activity-based learning, not just for cognitive academic activities (Rashid et al., 2026). Thus, learning practical skills in early childhood education needs to be designed as part of a systematic curriculum, not just an additional activity or daily routine without pedagogical reflection.

Practical Skills as an Initial Framework for Sustainable Vocational Readiness

The main novelty of this synthesis lies in mapping the relationships among early childhood practical skills, life skills, the SDGs/ESD, and sustainable vocational readiness. Previous studies have tended to separate these themes. Articles on life skills are more about independence and habituation; Articles on the SDGs are more about continuing education and inclusion, while articles on readiness are often associated with school readiness or job readiness at a higher level. This synthesis shows that the three domains can be connected in a single conceptual framework.

The framework places practical skills as the starting point in the formation of sustainable vocational readiness. Children who are accustomed to performing practical tasks independently, working together, protecting the environment, and solving simple problems are building the basis for future work attitudes. When such activities are linked to the SDGs, vocational readiness is directed not only at individual productivity but also at social responsibility and sustainability. Thus, this article offers the perspective that sustainable vocational readiness can be cultivated from an early age through the learning of practical skills designed in a conscious, contextual, and value-oriented manner towards the SDGs.

Limitations and Directions of Further Study

Although the articles analyzed have been selected through a systematic process, there are some limitations to note. First, not all articles use the term "vocational readiness" in the context of early childhood. Some articles use the terms school readiness, future readiness, foundational skills, or sustainable learning. Therefore, the interpretation of vocational readiness is conceptualized by considering the relationships among basic skills, learning readiness, and long-term life readiness. Second, some supporting articles discuss basic education, teacher education, or continuing education in general, so they are used as theoretical reinforcements rather than as the main source of PAUD. Further research is recommended, including empirical studies that directly examine the relationships among early childhood practical skills, SDGs scores, and indicators of early vocational readiness. Longitudinal studies are also needed to examine how the early habituation to practical skills affects children's independence, responsibility, and readiness for the next level of education. In addition, the development of SDGs-based practical skills learning models in PAUD institutions can be a relevant research agenda to strengthen the contribution of early childhood education to sustainable human development.

CONCLUSION

Based on the results of *the Systematic Literature Review* of 25 priority articles selected from 300 initial articles, it can be concluded that practical skills of early childhood play an important role as a foundation for sustainable vocational readiness. Practical skills not only function as daily habituation activities, but also as a means of establishing independence, responsibility, discipline, cooperation, problem-solving skills, and concern for the environment. The findings of the study show that activities such as taking care of themselves, tidying up the learning environment, completing simple tasks, sorting garbage, gardening, working in groups, and following learning routines can foster productive attitudes relevant to children's lives and future readiness. The integration of practical skills with *the values of the Sustainable Development Goals* also strengthens early childhood education's role as a starting point for character building, sustainability awareness, and social responsibility.

This study emphasizes that vocational readiness in early childhood is not understood as direct work readiness but as the initial process of developing productive habits, independent

character, adaptability, and awareness of sustainability. However, the study's results show that previous research still tends to discuss practical skills, *life skills*, the SDGs, and vocational readiness separately. Therefore, further research is recommended to conduct empirical, comparative, and longitudinal studies on the development of SDGs-based practical skills learning in early childhood education institutions. Follow-up studies also need to develop curriculum models, assessment instruments, and learning strategies that can more effectively link early childhood practical skills to life readiness, future readiness, and sustainable development.

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