CHAPTER II
LITERATURE REVIEW

2.1 English Learning

English language learning is the process of acquiring language skills as a foreign language through structured, interactive, and meaningful activities. This process includes mastering vocabulary, pronunciation, and language skills such as listening, speaking, reading, and writing. These four skills are interconnected and support each other in developing effective communication abilities. Therefore, English learning should not only focus on linguistic aspects but also on the use of language in real-life contexts so that learners can apply it in everyday situations (Gilakjani, 2016).

English plays a significant role as an international language used in various fields, including education, technology, business, and global communication. The ability to communicate in English has become an essential skill in the modern era. Therefore, introducing English at an early age is considered a strategic step to equip children with global communication skills. Early exposure allows children to acquire language more naturally because they are in an optimal stage of development (Rahiem, 2021).

In the context of young learners, English language learning must be adapted to their cognitive development. Children aged 4–6 years are generally in the concrete operational stage, meaning they understand information better when it is presented visually and through direct experiences. Abstract concepts are often difficult for them to grasp. Therefore, the use of visual media, illustrations, and hands-on activities becomes essential in supporting effective language learning for young children (Cameron, 2018).

In addition to cognitive factors, social and emotional aspects also influence children's success in learning English. Children learn more effectively through interaction with their environment, including teachers and peers. These interactions help them understand how language is used in real communication. Therefore, English learning should be designed to be interactive and communicative to support natural language acquisition (Pinter, 2017).

A child-centered learning approach is considered effective for teaching English to young learners. This approach emphasizes the importance of aligning learning activities with children's needs, interests, and developmental stages. Activities such as playing, storytelling, and using visual media can increase children's engagement. Enjoyable learning experiences help children acquire language without pressure, making the process more effective (Pratama & Hidayati, 2022).

Learning media also play an important role in supporting English language learning. Engaging and interactive media can increase children's motivation and help them understand the material more easily. The use of appropriate media can create meaningful learning experiences. Therefore, the development of learning tools such as the English Smart Book becomes a relevant solution for supporting English learning for young children (Smaldino et al., 2019).

2.1.1 English for Young Learners

In this research, young English learners refer to children aged 4–6 years who are in the early stages of cognitive, social, and emotional development. At this stage, children have a natural ability to acquire language through imitation, interaction, and direct experiences. They tend to learn language unconsciously through daily activities. Therefore, English learning for young children should be designed in a natural and enjoyable way (Pinter, 2017).

Children aged 4–6 have distinct characteristics that influence their learning process. They are highly curious, active, and attracted to concrete and visual objects. However, they also have relatively short attention spans, which makes it easy for them to lose focus. For this reason, learning activities should be varied and engaging to maintain their attention (Cameron, 2018).

Young learners understand English more effectively when the learning process involves interactive and enjoyable activities. Activities such as games, songs, storytelling, and the use of visual media can help children understand and remember vocabulary. These activities provide

meaningful learning experiences because they involve emotions and direct participation. As a result, the learning process becomes more effective and less monotonous (Pratama & Hidayati, 2022).

Teaching strategies should be adapted to children's characteristics and needs. A flexible and child-centered approach allows learning to be more relevant and engaging. The use of interactive and sensory-based media can increase children's participation in the learning process. In this context, the English Smart Book is designed to meet these needs by integrating visual and interactive elements (Sari & Lestari, 2023).

Furthermore, children's language development is influenced by a supportive learning environment. An environment rich in visual stimuli and interaction can enhance language acquisition. Therefore, English learning should be designed creatively and contextually to support children's optimal development (Rahiem, 2021).

2.2 Learning Media

Learning media refers to all tools used to convey information and support the teaching and learning process. Media function as a bridge between teachers and students in delivering learning materials more effectively. The use of appropriate media can improve learning outcomes and facilitate students' understanding. Therefore, learning media are an essential component of the educational process (Smaldino et al., 2019).

Learning media can take various forms, such as printed, visual, audio, and audiovisual media. Each type has its own characteristics and advantages in presenting information. The selection of media should be based on learning objectives, content, and students' characteristics. Proper selection ensures that media can be used effectively to support learning (Arsyad, 2017).

For young learners, learning media play a crucial role because they learn through direct experience and visual stimulation. Engaging media can help children understand abstract concepts in a more concrete way. In addition, media can

increase children's motivation and interest in learning. Therefore, interactive media are highly recommended for early childhood education (Cameron, 2001).

Learning media also serve several important functions, such as attracting attention, clarifying material presentation, and providing more realistic learning experiences. Media allow students to actively participate in the learning process. This shifts the focus from teacher-centered to student-centered learning. As a result, learning becomes more effective and meaningful (Smaldino et al., 2019).

The selection of learning media should consider students' needs and characteristics. For young children, effective media are those that are colorful, engaging, and involve multiple senses. Examples include picture books and interactive media. These types of media can create enjoyable and meaningful learning experiences (Sari & Lestari, 2023).

The development of instructional design has led to the emergence of innovative media, such as interactive books. These media not only present information but also involve children in learning activities. The English Smart Book is one example that integrates visual, interactive, and sensory elements. This makes English learning more effective and engaging (Kucirkova, 2019).

2.2.1 Book

Books are one of the most commonly used learning media because they present information in a structured and organized manner. The content is arranged sequentially, allowing learners to understand the material step by step. This structured presentation helps children build understanding from simple to more complex concepts. Therefore, books remain an important learning resource in education (Smaldino et al., 2019).

As instructional materials, books are designed to provide meaningful learning experiences. A good book does not only deliver information but also attracts readers' attention. The content and presentation should be adapted to the characteristics of the readers, especially young children. This ensures that the book can be used effectively in the learning process (Kucirkova, 2019).

In English language learning, books function as visual media that help children understand vocabulary. Picture books are particularly effective because they combine text with illustrations. Illustrations help children associate words with their meanings directly. This makes the learning process easier and more engaging (Cameron, 2001).

From a design perspective, books for young children must consider visual aspects. The use of bright colors, simple illustrations, and uncluttered layouts can increase children's interest. Clear typography also supports readability. Good design enhances the effectiveness of learning materials (Pinter, 2017).

The development of books has evolved into more interactive formats. Books now include features that allow children to actively engage with the content. Elements such as flaps and movable parts increase children's involvement. This makes books more engaging and effective as learning media (Sari & Lestari, 2023).

2.2.1.1 Smart Book

Smart Book is an innovative learning medium that combines information with interactive and sensory elements. This medium is designed to increase children's engagement in the learning process. Smart Book functions not only as a reading material but also as an exploration tool that allows children to learn actively. Therefore, it provides a more meaningful learning experience (Kucirkova, 2019).

In early childhood learning, sensory involvement plays a crucial role. Smart Book integrates visual elements, interactive activities, and sensory experiences. Children can see, touch, and interact directly with the material. This helps them understand and retain information more effectively (Rahiem, 2021).

In terms of design, Smart Book uses simple illustrations, attractive colors, and clear layouts. Interactive elements such as flaps and textures enhance the appeal of the medium. These design

features support children's active participation in learning. As a result, Smart Book becomes an effective medium for young learners (Sari & Lestari, 2023).

Smart Book also incorporates the concept of sensory play, which involves multiple senses in the learning process. This approach strengthens children's understanding and memory retention. Learning experiences that involve sensory engagement are more effective for young children. Therefore, Smart Book is suitable for English language learning (Rahiem, 2021).

Overall, Smart Book is a learning medium that integrates visual, interactive, and sensory elements. This combination makes learning more engaging and effective. It supports children's language development optimally (Smaldino et al., 2019)

2.3 Design

Design refers to the process of planning and organizing visual and functional elements to create a product that is not only aesthetically appealing but also effective in achieving its intended purpose. In the context of education, design plays a crucial role in determining how information is structured, presented, and understood by learners. A well-designed learning medium does not only focus on visual appearance but also considers clarity, usability, and learning effectiveness. Therefore, design becomes a key factor in developing meaningful and effective learning media (Smaldino et al., 2019).

In developing educational media, design must consider both visual communication and user experience. Elements such as color, shape, typography, and layout should be arranged systematically to support the delivery of information. A well-structured design helps learners follow the flow of information more easily and reduces cognitive overload. This is particularly important for young learners who have limited attention spans and processing capacity. Thus, design functions as a bridge between learning content and learners' understanding (Kucirkova, 2019).

For children aged 4–6 years, design must be adapted to their developmental characteristics. At this stage, children are more responsive to simple, colorful, and visually engaging materials. Complex and overly dense designs can hinder understanding and reduce interest. Therefore, simplicity, clarity, and attractiveness are essential principles in designing learning media for young learners. These principles help children focus on key information without being overwhelmed (Cameron, 2001).

In addition to visual aspects, design also involves interaction. Interactive design allows children to actively engage with the learning material rather than passively receiving information. Simple interactions such as opening, sliding, or touching parts of the media can enhance children's involvement and understanding. Active engagement supports deeper learning because children experience the material directly. Therefore, incorporating interactivity is an important aspect of effective educational design (Yusuf & Widyaningsih, 2020).

In the development of the English Smart Book, design serves as a connection between learning objectives and children's experiences. Every visual and interactive element is intentionally designed to support vocabulary learning in a contextual and meaningful way. The integration of visual, interactive, and sensory elements creates a more engaging learning environment. As a result, design not only enhances the appearance of the media but also improves the overall learning process (Smaldino et al., 2019).

2.3.1 Visual Design

Visual design is a component of design that focuses on organizing visual elements to communicate information effectively. These elements include color, illustrations, typography, and layout, which are arranged systematically to enhance understanding. In educational media, visual design plays an important role in attracting attention, clarifying information, and supporting comprehension. Therefore, effective visual design is essential in creating engaging learning materials for young learners (Kucirkova, 2019).

Color plays a significant role in capturing children's attention and creating an engaging learning atmosphere. Bright and contrasting colors are more effective in maintaining focus and distinguishing different types of information. In addition, colors can be used as visual markers to support memory retention. Proper color selection helps children process and remember information more easily, making the learning experience more effective (Cameron, 2001).

Illustrations are essential in helping children understand concepts, especially in language learning. Simple and communicative images allow children to connect words with their meanings directly. Since young learners rely heavily on visual input, illustrations make abstract language concepts more concrete. As a result, learning becomes easier and more meaningful for children (Pinter, 2017).

Typography also plays an important role in improving readability. The use of simple fonts, larger text sizes, and appropriate spacing helps children recognize letters and words more easily. A clean and uncluttered layout further supports readability and prevents visual overload. These aspects are crucial in ensuring that children can follow the learning content without confusion (Smaldino et al., 2019).

In addition, visual design principles such as balance, contrast, and visual hierarchy must be applied. Visual hierarchy helps guide children's attention to the most important information first by organizing elements based on size, color, and position. This structured arrangement allows children to process information gradually and effectively. Applying these principles enhances both clarity and engagement in learning materials (Kucirkova, 2019).

In the context of the English Smart Book, the physical form of the book is also an integral part of visual design. The book is designed with a basic square shape combined with decorative elements in the form of protruding cat ears at the top. These elements create a unique and recognizable visual identity that attracts children's attention. Additionally, the cat's eyes are designed using beads, providing a reflective visual effect that enhances visual stimulation.

The whiskers are created using soft wire material, giving a raised and tactile quality to the design. These three-dimensional elements allow children to not only see but also touch parts of the book. This combination of visual and tactile features enhances sensory engagement. Therefore, the visual design extends beyond two-dimensional elements and becomes a multisensory experience.

The use of a cat character in the design aims to increase children's emotional engagement with the learning media. Familiar and playful shapes help children feel more connected and interested in the material. This emotional connection can improve motivation and participation in learning activities. Thus, visual design in the English Smart Book functions not only as an aesthetic element but also as a strategy to enhance learning effectiveness (Rahiem, 2021).

2.3.1.1 Designing a Smart Book

Smart Book design is the process of creating educational media that integrates visual elements, content, and interaction to provide a meaningful and effective learning experience for young children. In the context of English language learning, this medium not only functions as a tool for delivering information but also plays a role in enhancing students' active participation. This is in line with the idea that high-quality instructional materials should provide relevant learning experiences and meet learners' needs (Tomlinson, 2011).

In relation to learners' characteristics, children aged 4–6 years tend to learn more effectively through direct experiences and exploratory activities. At this stage, children understand language better through real actions and interactions rather than abstract explanations. Therefore, learning media should facilitate active engagement so that children can develop their understanding naturally. As emphasized by Pinter (2017), language learning for young children should involve activities that encourage participation and interaction.

From a visual perspective, the use of simple and communicative illustrations is essential in supporting children's understanding of

English vocabulary. Visual representations help children associate words with their concrete meanings, making the learning process more accessible. In addition, the use of bright and contrasting colors can attract attention, while clear typography supports letter and word recognition. A well-organized layout that is not overly crowded also helps children follow the flow of information without experiencing cognitive overload (Cameron, 2001).

Beyond visual aspects, interaction becomes an important component in Smart Book design. Interactive elements such as lift-the-flap features, sliding panels, and tactile materials allow children to engage directly with the content. This direct engagement encourages active participation and enhances the learning experience. As stated by Lynch (2008), effective children's books are those that involve readers through simple yet meaningful interactions.

Furthermore, the concept of sensory play serves as a fundamental basis in the development of the Smart Book. This approach emphasizes the importance of engaging multiple senses, such as sight, touch, and movement, in the learning process. Sensory stimulation can strengthen children's understanding and improve memory retention. By integrating sensory activities into the book, children are able to experience learning in a more concrete and meaningful way (Cameron, 2001).

In addition to sensory engagement, the relationship between design and learning objectives must also be considered. Every visual and interactive element should be intentionally designed to support vocabulary acquisition within meaningful contexts. Children learn language more effectively when it is presented in situations that relate to their experiences. Therefore, the inclusion of images, matching activities, and object exploration helps children understand word meanings more naturally (Scott & Ytreberg, 1990).

Overall, Smart Book design emphasizes not only visual attractiveness but also its educational function in supporting children's

learning. The integration of visual elements, interaction, and sensory activities creates a more effective and meaningful learning experience tailored to young learners' characteristics. Therefore, beyond conceptual and visual considerations, it is also necessary to examine how these elements are systematically structured into interactive formats, which leads to the discussion of interactive book designing.

2.3.1.2 Interactive Book Design

Building upon the concept of Smart Book design, interactive book designing focuses on how visual elements, content, and user interaction are systematically integrated into a cohesive learning medium. Interactive books are not limited to presenting information but are designed to actively engage users in the learning process. In the context of the English Smart Book, interaction plays a crucial role in supporting children's understanding of learning materials. Therefore, interactive design must be carefully planned and aligned with the characteristics of young learners (Kucirkova, 2019).

One of the key aspects of interactive book design is the interaction flow. Each page is designed to guide children through specific actions, such as opening flaps, sliding elements, or touching certain parts of the book. This structured interaction allows children to process information gradually rather than all at once. As a result, children can follow the learning process in a more organized and manageable way (Yusuf & Widyaningsih, 2020).

In addition to interaction flow, visual hierarchy plays an important role in guiding children's attention. By organizing visual elements based on size, color, and position, children can easily identify which parts are more important. This helps them focus on relevant information and understand the sequence of learning activities. A clear visual hierarchy reduces confusion and enhances the overall learning experience (Kucirkova, 2019).

Another important component in interactive design is the use of visual cues. Visual cues refer to simple indicators such as arrows, icons, or symbols that guide children on how to interact with the book. These cues are particularly useful for young learners who may not yet be able to read written instructions. By relying on visual guidance, children can independently navigate the book and participate more actively in the learning process (Cameron, 2018).

Furthermore, sensory elements are integrated into interactive book design to enrich children's learning experiences. The use of textures, movable parts, and tactile materials allows children to engage multiple senses during learning. Sensory interaction helps strengthen the encoding of information in memory, making it easier for children to recall what they have learned. Therefore, incorporating sensory design is essential in improving learning effectiveness for young learners (Rahiem, 2021).

In addition to engagement, interactive design must also align with learning objectives. Every interactive feature should have a clear educational purpose, particularly in supporting vocabulary recognition and language understanding. Interactions should not only be engaging but also meaningful in relation to the learning content. This ensures that all design elements contribute directly to the learning process rather than serving as mere decorative features.

Overall, interactive book designing integrates visual structure, interaction flow, and sensory experience into a unified system. This approach creates a learning medium that is both engaging and pedagogically effective. In the English Smart Book, interactive design supports active participation, enhances understanding, and provides a more meaningful learning experience for young learners (Smaldino et al., 2019).

2.4 Memory Span

Memory span refers to an individual's ability to store and recall information over a certain period of time. In the context of education, memory span relates to

how much information learners can process, store, and retrieve at one time. This ability is closely linked to cognitive development and plays an important role in determining how learning materials should be organized and presented. For young learners, whose cognitive abilities are still developing, memory span becomes a key consideration in designing effective learning experiences.

Children aged 4–6 years are still in the early stages of memory development, which means their ability to process and retain information is limited. At this stage, children tend to remember information more easily when it is presented in a simple, meaningful, and repetitive manner. Cameron (2001) states that children learn language more effectively when the material is presented in a concrete and contextual form. When learning materials are too complex or contain excessive information, children may struggle to understand and retain the content. Therefore, the presentation of learning materials should be adjusted to match children's developmental level.

The limitations of memory span in young children require appropriate instructional design strategies to support their learning process. One effective approach is to limit the amount of information presented at one time and organize it into smaller, manageable units. The use of clear and relevant visuals can also support children in understanding and remembering information more effectively. In addition, a simple and uncluttered layout helps reduce cognitive overload and allows children to focus on key learning points. These strategies enable children to process information gradually and more efficiently.

Repetition plays an important role in strengthening children's memory. Information that is presented repeatedly through various formats, such as images, activities, and interactive elements, becomes more familiar and easier to recall. Scott and Ytreberg (1990) explain that repetition in language learning helps children recognize patterns and reinforces their understanding of vocabulary. Through repeated exposure, children develop stronger memory connections. As a result, repetition supports both short-term and long-term memory development.

In addition to repetition, sensory engagement also contributes to the development of memory in young children. Activities that involve multiple senses,

such as seeing, touching, and moving objects, can strengthen the encoding process in memory. When children actively engage with learning materials through sensory experiences, they are more likely to understand and remember the information. These experiences make learning more meaningful and enjoyable. Therefore, sensory-based activities play an important role in supporting memory development.

In the context of designing an English Smart Book, understanding memory span is essential for determining how content should be structured and presented. The amount of information on each page, the use of visuals, and the type of interaction must be carefully designed to match children's memory capacity. A design that is simple, well-structured, and incorporates sensory activities can help children process and retain information more effectively. Interactive elements also support engagement and repeated exposure. Therefore, applying the concept of memory span can improve the effectiveness of learning media for young learners.

2.4.1 Early Learners Memory Span

Between the ages of 4 and 6, children's memory is still developing and is characterized by a limited short-term memory capacity. At this stage, children are generally able to remember only a small amount of information at one time, typically around three to five items. However, their ability to remember gradually improves as they grow older and gain more learning experiences. This developmental condition highlights the importance of presenting information in manageable amounts. By doing so, children are more likely to process and retain the information effectively.

Children's ability to remember information is strongly influenced by how the material is presented. They are more likely to retain visual and concrete information rather than abstract or purely verbal explanations. This is closely related to their stage of cognitive development, which relies on direct and observable experiences. Cameron (2001) emphasizes that visual support plays a key role in helping children understand and remember language. Therefore, the use of images, colors, and real-life representations is essential in learning materials.

In addition to limited capacity, children at this age have not yet developed advanced cognitive strategies for organizing information. They often find it difficult to group, categorize, or structure information independently. For this reason, learning materials must be presented in a clear and well-organized manner. A structured presentation helps children recognize patterns and relationships between pieces of information. This supports both understanding and memory retention.

Another important factor affecting memory span is children's relatively short attention span. Children can only maintain focus for a limited period, especially when learning activities are not engaging. Therefore, learning materials should be designed to be visually attractive, interactive, and varied to maintain children's attention. Presenting too much information at once may overwhelm them and reduce their ability to retain the material. Breaking information into smaller sections can significantly improve both attention and memory.

Active engagement also plays a crucial role in strengthening children's memory. Activities that involve direct interaction, such as opening, moving, or touching objects, can enhance the encoding of information into memory. Pinter (2017) states that active participation helps children better understand and remember what they learn. When children are actively involved, they are more focused and engaged in the learning process. This leads to deeper understanding and stronger memory retention.

The characteristics of memory span in children aged 4–6 years have important implications for the design of learning materials. Information should be presented in small amounts, with clear structure and supported by visual and interactive elements. Sensory-based activities can also enhance engagement and memory retention. Designing learning materials that align with children's cognitive abilities can improve both comprehension and long-term retention. Therefore, understanding memory span is essential in creating effective and developmentally appropriate learning media.

2.5 Previous Studies

Research on learning media for young learners highlights the importance of well-designed instructional materials in supporting effective learning. Appropriate learning media not only function as tools for delivering content but also play a significant role in enhancing children's attention, motivation, and engagement during the learning process. Therefore, the development of learning media should carefully consider how visual design, interaction, and learning experiences can be effectively integrated to meet the developmental needs of young learners.

In the context of English language learning, Cameron (2001) emphasizes that visual media play a crucial role in helping young learners acquire vocabulary. Children tend to understand and remember new words more easily when they are supported by clear and concrete visual representations. Visual elements such as illustrations help children establish connections between words and their meanings, making the learning process more meaningful. This indicates that the design of visual components in learning media must be carefully planned to support effective language acquisition.

In line with this, Scott and Ytreberg (1990) explain that language learning becomes more effective when it is connected to children's everyday experiences. Young learners are more likely to understand and retain vocabulary when it is presented in familiar contexts and situations. In addition, learning activities that involve active participation can strengthen both comprehension and memory retention. This suggests that contextual and activity-based approaches are essential in designing learning materials for young learners.

Furthermore, Pinter (2017) highlights that active involvement is a key factor in supporting language development among young learners. Children learn more effectively when they are engaged in hands-on activities that involve direct interaction with learning materials. These activities allow children to explore and construct their own understanding of language. As a result, the learning process becomes more engaging and supports long-term memory development.

In the development of learning media, Lynch (2008) states that interactive books have significant potential to enhance children's interest in reading and participation in learning activities. Interactive elements, such as flaps, movable parts, and touch-based features, encourage children to actively engage with the content rather than passively receive information. This type of interaction creates a more dynamic and enjoyable learning experience. Consequently, interactive books can support both cognitive and language development in young learners.

From a design perspective, Ambrose and Harris (2010) as well as Lidwell et al. (2010) explain that the application of visual design principles is essential in improving the effectiveness of learning media. Principles such as color, contrast, balance, and visual hierarchy help guide children's attention and make information easier to understand. A clear and well-structured layout also reduces cognitive load and allows children to focus on key learning elements. This demonstrates that design decisions directly influence how children interact with and understand learning materials.

Based on the studies discussed above, it can be concluded that effective learning media for young learners should integrate visual elements, interactive features, and meaningful learning experiences. These components work together to support active engagement and improve comprehension. However, studies that specifically focus on the development of an *English Smart Book* integrated with *sensory play* are still limited. Therefore, this research aims to develop a learning medium that combines design, interaction, and sensory-based activities to support English learning for children aged 4–6 years.