Role of Cognition in Developing Young Children's Literacy Ages 4 – 10: The Kenyan Experience

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Abstract: This paper argues that literacy in early childhood could play a significant role in empowering the young children to develop reflection, critique, empathy, a sense of identity and full participation in society. This however is only possible if teachers go beyond the dominant bahavioural, cognitive and socio cultural views that have constrained early childhood teacher education in Kenya and perhaps other countries in the world. I argue that if teacher educators embrace the view of producing teachers who are sensitive to skills and strategies that are essential to effective literacy teaching [alphabet knowledge, phonics, phonological awareness, phonemic awareness, vocabulary, fluency, comprehension and composition], then, children will learn that literacy is a tool to harness the fulfillment of personal goals both within and outside the school. I have also suggested that in supporting teachers to develop critical literacy, children will be empowered to understand how texts may influence and change them as members of society. It is also argued that research into acquisition of literacy with specific reference to key components like word recognition, vocabulary development, fluency, comprehension, the development of writing and spelling directly relate to the processing of print and digital texts. In this paper, I use the Kenyan context to state that cognition empasises that children develop problem solving skills in literacy-related activities through the assistance of a more knowledgeable other. However, it is my feeling that Kenya shares a considerable similarity with other nations in terms of approaches to initial teacher education and professional development hence many issues raised may be relevant to other countries.
Keywords: Literacy, critical literary teaching, emergent literacy, word recognition, phonics.

INTRODUCTION

Literacy in early childhood as a concept includes the capacity to read, understand and critically appreciate various forms of communication including spoken language, printed text and digital media [40]. The above explanation is sufficient enough as it recognizes the importance of conceptualizing literacy to include speaking, reading and writing in both print and digital media. The current prevalence of digital media including the internet in our daily activities makes this definition or explanation appropriate and thus presents a broad conceptualization of literacy. However, Mullis *et al.* [1] defines literacy as the ability to understand and use those written language forms required in society and/or valued by the individual. Young readers can construct meaning from a variety of texts. They are ready to learn, to participate in communities of readers in school and in everyday life and for enjoyment.

The age range under discussion is 4-10. It should be noted that ages 3-4 is pre-primary whereas 5-8 in the Kenyan context is class one to four which marks what is commonly referred to as Lower Primary

school. Given these ages emergent literacy is a concept particularly significant for discussion in this paper.

Emergent Literacy as defined by Whitehurst and Lunigan [2] are skills, knowledge and attitudes that are presumed to be developmental precursors to convenient forms of reading and writing. In addition Aistear says that emergent literacy is concerned with children developing a growing understanding of print and language as a foundation for reading and writing. Further, says through play and hands on experience children see and interact with print as they build an awareness of its functions and conventions. The concept of emergent literacy according to sulzby and Teale [3] ascribes to the child the role of constructor of his or her own literacy.

In contrast to the view held by sulzby and Teale, Sėnėchal *et al.* [3] view emergent literacy as separate from oral language and metalinguistic skills. They propose that emergent literacy is composed of conceptual knowledge and their early procedural knowledge of reading and writing; conceptual knowledge includes children's knowledge of the acts of

reading and writing and their perception of themselves as readers and writers while procedural knowledge includes letter name, letter sound knowledge and some word reading. This paper argues that although reading, writing and speaking strategies are crucially important to develop, it is important to espouse a broader vision of literacy, which should encompass the cognitive, creative and aesthetic dimensions of literacy across the lifespan of the individual.

Cognition

As we look at cognition, it is important to grasp the concept of scaffolding. Wood, Bruner and Ross [4] defined scaffolding as a process that enables a child or novice to solve a problem, carry out a task or achieve a goal which would be beyond his unassisted efforts. Scaffolding draws on the Vygotskian concept of the zone of proximal development (ZPD) where the learner socially constructs knowledge with a more knowledgeable other. Vygotsky [5] defined this ZPD as the distance between the actual development level as determined by independent problem-solving and the level of potential development as determined through problem-solving under adult guidance or in collaboration with more capable peers. It involves balancing support along with challenge, where the ultimate goal is independent, self-regulated learning.

Scaffolding further involves functions, such as gaining and maintaining a child's attention, reducing the task to manageable components, accentuating relevant features of the task, reducing possible frustrations and demonstrating and modeling task components [6]. In the classroom, scaffolding involves a delicate balancing act for the teacher where the teacher provides 'just-in-time' assistance [7], through explicit strategy instruction, modeling, demonstrating and thinking aloud in a task situation where the child is challenged. Collins, Brown and Newman's [8] cognitive apprenticeship model notes that children will develop problem-solving skills through a more knowledgeable other mentoring, guiding, coaching and structuring the task for the child, without explicitly giving children the answers. Such scaffolding is both generative and reflective [8, 9]. The goal is that teacher assistance will fade over time and the child will apply strategies to new situations and adopt a flexible, metacognitive approach which includes procedural, declarative and conditional levels of knowledge [10].

LITERATURE REVIEW
Language learning and use in early childhood

Early childhood education settings can be divided into three major categories regarding language use: (i) where the first language is the primary language of the classroom; (ii) a bilingual classroom where instruction is scheduled so that both languages are used; (iii) classroom where English is used for all interaction.

In practice, however it is difficult to categorize instructional programmes regarding language use as each language classroom may take different forms of instruction [11]. Even though young children are predisposed to learning more than one language, learning to understand and express language proficiently is a huge task which requires time, patience and language supports [12].

During the early childhood years, children are engaged in extended oral language development in their first language as they become familiar with the components of oral language: phonology (sounds of language); vocabulary (words); grammar (how words can be put into sentences); discourse (how sentences can be put together to tell stories or to explain how something works); pragmatics (rules about how to use language). These aspects of oral language are also closely linked to literacy development in young children [13].

There are however individual differences in how children develop along this developmental pathway. Wong Fillmore [14] described how young children who are learning English as an additional language (EAL) vary according to their motivation, exposure, age and personality. These cognitive and social factors interact together and affect children's language acquisition. Placing young children in English language care settings at a very young age where they may begin to prefer English leading to the loss of their mother tongue may lead to an inability to communicate with parents, siblings and grandparents. This has implications for mother tongue support to help ensure uninterrupted conceptual development in young children who are dual language learners as they acquire English. Supporting the development of the child's mother tongue ensures that children who are dual language learners will not fall behind in their conceptual development and academic skills as they acquire English.

Classroom talk and second language development

Rich contexts for second language development can be provided by both *child to child talk* and *teacher-child talk* [15]. This has implications for classroom management. Productive talk needs to be deliberately and systematically planned and scaffolded by the teacher in order to support language development [16]. For example, tasks which not only encourage but *require* group talk, will ensure an authentic purpose for carrying out the activity. Where talk is necessary to carry out the task, or tasks which involve some kind of 'information gap' (e.g. where different members of a group hold different information or incomplete information so information must be shared), this creates an authentic purpose for communication. Organizing the class into 'expert' groups whereby different groups

of learners become 'experts' in a particular aspect of a topic (e.g. *insects* could be researched under headings such as *description, habitat, food, life cycle, interesting fact*) also fulfills the principle of creating an 'information gap' to support the pedagogic task [16].

Small group activities will ensure inclusivity among the group and lower the 'affective filter' (low level of stress) in the child's environment [17]. Getting help for the L2 learner from English-speaking children will also support the 'comprehensible input' of classroom routines and instructions. In the junior classroom, 'safe havens' for the L2 children may be provided by Lego, Jigsaw puzzles and manipulative games. Language is encouraged for meaningful and authentic purposes. Fine-tuning of spoken language by the class teacher is needed to reiterate and scaffold production of language by expanding, repeating and extending the child's use of language and even by using a few important words in the child's home language. The helpfulness of classroom routines, (e.g. taking turns; tidy up tasks; daily schedules) and the repetition of phrases and sentences provide opportunities for language use and interaction in a natural setting [11], thus leading to second language development.

Language and literacy activities

For young children in the early year's classroom, the curriculum supports language and literacy development through activities' time. This could be teacher-directed activity, or child-initiated activity. Teacher-directed activity for example, could include a 'running commentary' or 'talk aloud' while doing the task. Child-initiated activities would include free play activities such as make-believe or socio-dramatic play (e.g. playing shop), whereby the language is embedded in the context of the play situation.

Other activities include book reading in small groups, re-reading the story, retelling the story, talking about the story, and reading to other children. Playtime activities and circle time also provide opportunities for language use and stimulate social interaction among children who are learning English as additional language [18, 11]. Further, activities which support literacy development for young L2 children include the following: letter recognition, phonological awareness (sounds in words), concepts of print (how books work), vocabulary development (words and meanings) and storytelling,

Theoretical Framework
Socio-cultural theory

This paper is supported by the Socio-cultural theory which emphasizes the role that culture plays in the development and practice of literacy. Literacy learning from this perspective is a social practice, one that is embedded within specific cultural contexts and mediated by particular cultural tools [19]. Research in this field utilizes Vygotsky's [5] notion that language learning is influenced by the social contexts in which children are immersed as they grow up and that they draw on a range of mediational tools in the construction of meaning [20]. Socio-cultural theory of learning emphasizes the social nature of learning and thus also draws on concepts such as the community of practice model [21], in which learners engage in 'legitimate peripheral participation' in communities of learners. Novice learners join more expert learners in a community and, as they gain skills, knowledge and understanding, become more central members of the expert group.

Literacy is a social practice that is located within a wider social, economic and political context [22, 23]. Of interest to this paper is the concept of autonomous and ideological definitions of literacy [24]. Rather than being two opposing views, it is most helpful to think about autonomous and ideological definitions as being points on a continuum of definitions. At one end, autonomous models define literacy as a unified set of neutral skills that can be applied equally across all contexts [25]. From this perspective, there is no need to adjust instruction for different contexts of use or diverse learners. At the other end, ideological models define literacy as a social practice grounded in social, historical, cultural and political contexts of use. In this view, the nature and meaning of literacy are constructed in the specific social practices of participants, in particular cultural settings for particular purposes. Thus, literacy is more than acquiring content but, in addition, locates reading and writing in the social and linguistic practices that give them meaning [25].

Socio-cultural theory of literacy has led to an understanding of the way in which children are immersed in literacy practices from birth and thus develop a range of skills, knowledge and understanding about literacy [26], their 'funds of knowledge' [27], which do not always match with the discourses of schooling [22]. Children's own cultural interests, however, can be important in literacy learning. Over the past two decades, research drawing on socio-cultural theory has indicated how popular culture and media inform children's literacy learning, given that these are prevalent across children's lives.

More recently, the significance of cultural-historical explanations of learning and development have been emphasized and some writers use the term socio-cultural historical theory instead of, or alongside, socio-cultural theory. Socio-cultural-historical perspectives take into account the social, historical and cultural dimensions of everyday activities and seek to better understand children within this richly framed research context.

Main Argument
Alphabet knowledge, phonological awareness, phonemic awareness, vocabulary and phonics

This section looks at the aspects of alphabet knowledge, phonological awareness, phonemic awareness and phonics that should be assessed in the early years.

Alphabet knowledge

Knowledge of and familiarity with the visual shapes of the individual letters is an important prerequisite to learning to read [28]. Children's ability to name letters strongly predicts their future reading achievement. For example, learning letter names often turns spontaneously into interest in letter sounds and in the spellings of words. This may be because some letters contain information about their sounds. Knowledge of letter names is also strongly associated with children's ability to remember the structure of written words and the tendency to treat words as ordered sequences of letters rather than holistic patterns. Lack of letter-name knowledge is associated with difficulty in learning letter sounds and word recognition. This paper also argues that letter knowledge may help direct a child's attention to the components of words and the general idea that they can be represented as smaller units. However, ability to recite the alphabet is not sufficient on its own; children must be able to recognize each letter in isolation.

Phonological awareness

The term phonological awareness refers to 'the ability to detect and manipulate the sound segments of spoken words' [29]. It is also described as sensitivity to larger units of sound such as syllables, onsets and rhymes [30]. Stanovich [31] also uses the term *phonological sensitivity* to describe phonological awareness. According to Lonigan [32], phonological awareness is often seen as developing on a continuum, starting with sensitivity to large and concrete units of sounds (i.e. words, syllables) and progressing to sensitivity to small and abstract units of sounds (i.e. phonemes). In general, it is appropriate to observe most aspects of phonological awareness, though not phonemic awareness, in preschool children. The following tasks are suitable for assessing broad aspects of phonological awareness: Identifying rhyming words in songs and poems. It is useful to make a distinction between whether the child can hear rhyming words, or identify rhyming words when they are encountered during informal book reading. Segmenting sentences into words, Segmenting words into syllables and blending syllables into words, Onset-rime blending and segmentation. Early years educators need to observe young children reflecting on words and word parts as they engage in literacy-related activities.

Phonemic awareness

A phoneme is the phonological unit of speech that makes a difference to meaning. Thus, the spoken word **fun** is comprised of three phonemes: /f/, //, and /n/. It differs by only one phoneme from each of the spoken words, *van, gun* and *can*. **Phonemic awareness** therefore is the insight that every spoken word can be conceived as a sequence of phonemes. Because phonemes are the units of sound that are represented by the letters of an alphabet, an awareness of phonemes is key to understanding the logic of the alphabetic principle and thus to the *learnability* (my italics) of phonics and spelling. Teachers can use a variety of formal and informal activities to assess phonemic awareness – or the ability of children to segment words into their constituent sounds – an important prerequisite for both word reading and spelling. In assessing phonemic awareness, it is important to note that there is a hierarchy of tasks that is broadly indicative of the sequence in which children master awareness

Vocabulary

Vocabulary knowledge is a key indicator of later oral language development, as well as proficiency in reading [34]. The size of an individual's word knowledge has been related to comprehension in primary grades [35,36] and to fluency and comprehension at post-primary level [37]. Further, children from disadvantaged backgrounds tend to have smaller vocabularies than their middle-class counterparts, even before they begin their schooling [38,39]. Hence, it is important to assess children's vocabulary knowledge from as early a stage as possible. This can be done informally as children engage in structured activities such as dialogic reading, or in more formal contexts involving the administration of standardized measures of receptive vocabulary. Vocabulary knowledge can be obtained by asking for a definition of a word, a characteristic of a word, the opposite of a word, contrasting two words asking for another word with the same meaning etc. As children progress in their reading, vocabulary will become more sophisticated, and word meanings can be discussed in the context of specific texts that children have read as a group or independently. Reading vocabulary can be assessed orally (using some of the prompts suggested above) or it can be assessed through writing (for example, by asking children to define words in writing, or use words in sentences).

Phonics

These are instructional practices that emphasize how spellings are related to speech sounds in systematic ways. There is usually a predictable relationship between sounds and letters and this should allow children to apply this knowledge to familiar and unfamiliar words as they begin to read with fluency. Children are taught for example that the letter '**m**'

represents the sound /**m**/ and that it is the first letter in words such as mango, money, and monkey etc. children's reading development is dependent on their understanding of the alphabetic principle- the idea that letters and letter patterns represent the sounds of spoken language.

Children's knowledge of letter names and shapes is a strong predictor of their success in learning to read. Knowing letter names is strongly related to children's ability to remember the forms of written words and their ability to treat words as sequences of letters. Phonics instruction is a way of teaching reading that stresses the acquisition of letter-sound correspondences and their use in reading and spelling. Early skills in alphabetic serve as strong predictors of reading success, while later deficits in alphabetic is the main source of reading difficulties. This article argues that developing alphabetic skills is important.

Developing Teacher's Critical Literacy
An important dimension of literacy that is often overlooked is creativity. Creativity can be viewed generally as an activity where the mind is involved in producing new ideas or new ways of connecting and understanding existing ideas. Creativity can be viewed as part of critical analysis, problem solving, inventiveness and innovation by which we see, hear, taste, smell, and touch the world around us. In addition to instruction that focuses on developing children's cognitive abilities in and through literacy, it is important to provide children with opportunities to engage in creative literacy activities to support their emotional and imaginative development. Hence, activities such as responding to reading in non-print forms, dramatic play, and writing workshops can be used to foster key creative skills.

Critical literacy [33] is the ability to read texts in an active, reflective manner in order to better understand power, inequality and injustices in our human relationships. Texts here mean vehicles through which individuals communicate e.g. songs, novels, conversations, pictures etc. Teachers who are well grounded in critical literary skills should help learners to interrogate societal issues and institutions like the family, poverty, education, equity and inequality in order to critique the structures that serve as norms. Critical literacy is not simply a means of attaining literacy in a sense of improving the ability to decode words, but the ability to have a discussion with others about different meanings and also explore the relationships between theoretical frameworks and their practical implications in society.

CONCLUSION
This paper has argued that children's literacy is developmental, constructivist and incremental in nature and is embedded within cultural, societal and community practices. From the discussion and in line with recent research, it should be acknowledged that with adequate and appropriate attention to the key literacy skills, presented in purposeful and authentic contexts, based on children's assessed needs and stages of development, by teachers familiar with a repertoire of developmentally appropriate pedagogical approaches and deep levels of content knowledge , children are more likely to acquire and use literacy strategies, develop positive dispositions towards literacy and attain higher levels of engagement and motivation, creativity and agency.

On the basis of the preceding discussion the future of children literacy is one of hope. Instruction in phonological awareness and phonemic awareness must be child appropriate. Time spent on word play, nursery rhymes, riddles, and general exposure to storybooks will develop phonological awareness including phonemic awareness.

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