Universe Scientific Publishing

10.18686/ahe.v6i18.5680.

A Literature Review:Approaches that Facilitate Children's Literacy and Numeracy Development in Play-based Environment

Hui Xu

Jining Teachers College,Ulanqab City,Inner Mongolia 012000,China.

Abstract: Play-based learning has been researching for years,especially in the field of early childhood education.It's self-evident that the importance of literacy and numeracy in early years period.This paper discusses the theoretical background of both Australia and China.In the meanwhile,mentions different approaches that can facilitate young children's literacy and numeracy development in a play-based environment.These can help early childhood educators discuss and put these methods into real practice when they are with children.

Keywords: Children's development; Literacy; Numeracy

1. Introduction

This paper is a literature review of play-based learning approaches that help to facilitate young children's literacy and numeracy in kindergarten.In recent years,educators have looked for new methods about organizing learning for young children.In Australia,the Early Years Learning Framework(EYLF)has caught the eyes of both educators and parents.The ideology of play has raised public awareness that children should be taught in a playful environment,in other words,learning through play seems prior to other approaches. This recent released official document has embedded freshness into early years settings and brought challenges for the previous way of teaching and learning in early childhood education.Even though the EYLF was supported national wide,traditional approaches are important.Educators may have conflicts in the specific method that what they should use to enhance children's literacy and numeracy. However,traditional learning approaches was intentionally replaced by play-based learning,this paper argues that both traditional and play-based learning approaches will be helpful for educators to improve young children's literacy and numeracy.Approaches and people who use the approaches to facilitate children's literacy and numeracy learning are two crucial elements that will discuss in the following part of the paper.

2. Literature Review

2.1 Literacies in Early Years

Fleer and Raban(2010)draw upon everyday concept formation and academic concept formation in literacy and numeracy,for a better understanding of how the learning of these knowledge systems can be best supported in preschool years.The discussion includes not only Vygotsky's theoretical work that children should learn some concepts and relate to their daily lives,but also presents the importance of adults in mediating concept formation in children's life.Fleer and Raban(2010)suggest children's acquisition of literacy and numeracy concepts should base on their understanding of the central concepts that character particular forms of knowledge(Hedegard&Chaiklin,2005).For example,when a child understands classification,then he or she may develop a rational understanding of comparison,systems,and sorting.Besides,the author claimed an approach that called double-move method,which values in the learning of literacy and numeracy for children in preschools.The double-move approach illustrates how educators can bring literacy and numeracy concepts together with children's personal knowledge and their everyday lived experiences.What double-move approach emphasizes is that the link between the concepts children have already known and remain them visible in children's life.Hedegard and Chaiklin(2005)agreed that children are prone to remember topics that come from their parents,community,or their interests.The role

of adults in children's everyday practice about literacy and numeracy is another valuable point in this literature.Caregivers are primary people who can facilitate children's learning in literacy and numeracy.Adults are in charge of transmitting concepts and display them in front of children in order to support them with better comprehension.Although everyday activities embed opportunities for young children to learn through observation and apprenticeship,Newman and Celano(2001)pointed out in their study that neighborhood or community has influenced children's literacy and numeracy development.Many people would think that children who born in a rich family or live in a relatively wealthy neighborhood might have more resources for literacy and numeracy learning.However,the research came up with an interesting result that beyond people's imagination.The conclusion of the research showed that resources alone are unlikely to improve literacy and numeracy achievement.In contrast,the difference in settings may vary the patterns of early literacy and numeracy development.Even rich environment offer limited resource if children did not know how to interact with the resources in hand.Therefore,neighborhood environment plays less meaningful role than approaches that children should learn to deal with literacy and numeracy learning.Adults are critically important in the process of young children's literacy and numeracy development.Parents are first caregivers that children believe in.For teachers,using appropriate pedagogy in supporting children's learning in literacy and numeracy seems necessary(Fleer&Raban,2010).

2.2 Facilitating Math Learning

Changes in early childhood sector are increasingly concerned in Australia.The Early Years Learning Framework(EYLF)for Australia has clearly set out learning outcomes that enclose being,belonging,and becoming,which provide a context in early childhood education for teachers to develop curricula that meet the need of children(Cohrssen et al.,2013).Even though the EYLF demonstrates clear learning outcomes and sets out practice,it does not provide specific strategies for teachers or aspirational learning targets for children.This causes dilemma in how to put the EYLF into real practice to support the learning of young children in a playful environment. Intentional research provide compelling evidence in children's learning on math before school(Lago&DiPerna,2010).However,many educators are reluctant to engage in intentional teaching program either because of the lack of self-confidence or they are anxious about their professional knowledge on mathematics(Lee&Ginsberg,2009).In early childhood education,numeracy is important for children's later mathematics performance(Lago&DiPerna,2010).Mathematical literature in early childhood education seems to have a shared understanding of numeracy knowledge concerns not only numbers,but also measurement,shape,space,etc.Celements and Sarama(2008)suggest that even curricula contain one aspect of mathematical knowledge will strengthen children's mathematics learning. More importantly,increasing activities in mathematics that relate to real life experience of children.This idea was also supported by Vygotsky that learning concepts through real life situations.Cohrssen,Church,Ishimine and Tayler(2013)provide international perspective about mathematical curricula by comparing United States and Britain.The goals for mathematics learning in US and Britain in early childhood education gave out precise standards that children should say and use number names in familiar contexts,count up to ten on every objects,and recognisation on numerals one to nine(DCSF,2008).In Australia,the EYLF identifies broad learning outcomes that educators should provide more opportunities for young children to understand numeracy ideas which could inform teachers'planning for the class.Teachers should bring tools that can display numeracy knowledge to children.For example,we played dominos and dices in the class to match the number on the dice with the domino card in order to train one-to-one correspondence. Cohrssen,Church,Ishimine and Tayler(2013)finally summarize the important of math learning in early childhood is not simply teach children to add and subtract,but rather to cultivate them to develop understandings of big ideas in math.This article made detailed analysis in mathematics within the Early Years Learning Framework.Play is important for children to learn numeracy in their early years.

2.3 Teaching Literacy and Numeracy with Blocks

It is said that children love playing with blocks(Newburger,&Vaughan,2006).Blocks are expensive,they take up lots of spaces and need to be stored.It seems that they are trouble.But blocks are essential for children two to eight years old and beyond(Newburger,&Vaughan,2006).The reason why blocks are more worth than trouble is that playing with blocks can help children develop academic skills.Blocks are open-ended,children can play with blocks by themselves or others.The authors mention so many benefits that playing block brings for children.Most importantly,the authors had given the fact that children can learn math,language,and science through playing blocks.Young children learn best by working with real materials rather than just listening to teachers.Blocks can show a lot of mathematics concepts.It is possible for young children to learn math by counting the blocks,at the same time,blocks can help children know about words that describe position in space because blocks can be on top,under,over,beside,next to,near,far,behind,and with.Besides these,children also can learn words in block buildings about size,shape,and amount.These are words found in geometry and algebra.Playing with blocks is not only functions in young children's learning about numeracy,but also plays a crucial role in their literacy.People may doubt about how children develop their literacy with blocks.However,young children learn through

by doing things,they learn through all their senses,and they learn best when something means a lot to them.Blocks can usually be built into towers and roads,doorways and bridges,fences and walls.It is amazing that children can learn math in these three periods. First,children count blocks in a tower that enable them to count and use numbers as a part of play.Second,children take down a tower one block a time,this action progresses their ability to put together and take apart shapes,and also,children will develop their understanding of subtraction.Third,building a tower next to a tower.Children will recognize comparison in this part of play.In the doorways and bridges period,children can learn directions,order,and positions by making a block bridge,for example,they make a block bridge a space between two blocks.Moreover,encouraging children to move cars or animals under a block-built bridge to demonstrate the awareness of measurement.In the fences and walls period,children recognize names,builds,draws,and compare two-dimensional or three-dimensional shapes.For instance,a girl takes four double units and puts them together in a square shape.Therefore,children can come up with many ideas and actions through the process of playing with blocks.

Conclusion

Play-based learning and play-based approaches are popular in early childhood educations.When mentioned children,people come up with the idea of play.It is so natural to relate play to children.This paper mainly shows different approaches in a play-based learning development that can facilitate young children's literacy and numeracy learning.To sum up,firstly,we should put children into daily experience in order to enable them understand about literacy and numeracy concepts.Secondly,being respect to traditional approach,-such as using picture books to stimulate children's learning on literacy and numeracy.Thirdly,choosing appropriate playful activities and instruments in order to provide children with detailed information in literacy and numeracy learning,for example,playing with blocks,lego bricks,dominos.Finally,the role of teachers is important because children can be designed to learn due to teachers'profession in creating incidental learning environment and intentional teaching method.As educators,we should reflect ourselves in working with children in order to develop approaches appropriately within different context.

References:

[1]Cohrssen,C.,Church,A.,Ishimine,K.,&Tayler,C.(2013).Playing with math:Facilitating the learning in play-based learning. Australian Journal of Early Childhood,38(1),95-99.

[2]DCSF(Department of Children,Schools and Families).(2008).Statutory framework for Early Years Foundation Stage:Early Learning Goals.

[3]Fleer,M.&Raban,B.(2010).Literacies in early childhood:The preschool period.In A.Penelope L.Peterson,Eva L.&B.Baker,Barry McGaw(Eds.),International encyclopedia of education(pp.75-80).

[4]Hedegaard,M.and Chaiklin,S.(2005).Radical-Local Teaching and Learning:A Cultural-Historical Approach.Denmark:Aarhus University Press.

[5]Jalongo,M.R.(Eds.).(2004).Young children and picture books(2nd ed.).Washington,DC:National Association for the Education of Young Children.

[6]Lago,R.M.&DiPerna,J.C.(2010).Number sense in kindergarten:A factor-analytic study of the construct.School Psychology Review,39(2),164-180.

[7]Lee,J.S.,&Ginsberg,H.P.(2009).Early childhood teachers'misconceptions about mathematics education for young children in the United States.Australian Journal of Early Childhood,34(4),37-45.

[8]Neuman,S.and Celano,D.(2001).Access to print in low-income and middle-income communities:An ecological study of four neighborhoods.Reading Research Quarterley,36(1),8-26.

[9]Newburger,A.and Vaughan,E.(2006).Teaching Numeracy,Language,and Literacy with Blocks.MN:Redleaf Press.

[10]Pramling Samuelsson,I.and Sheridan,S.(2010).A turning-point or a backward slide:The challenge facing the Swedish preschool today.Early Years 30(3),219–227.

[11]Thomas,L.,Warren,E.,&Vires,E.(2011).Play-based learning and international teaching in early childhood contexts.Australian Journal of Early Childhood,36(4),69-75.