

CERTIFICATE

This is to certify that the thesis entitled “**Effectiveness of Developmentally Appropriate Practice-Based Curriculum Framework on Emergent Literacy and Numeracy Skills of Preschoolers**” submitted to Avinashilingam Institute for Home Science and Higher Education for Women, Coimbatore, for the award of the degree of **Doctorate of Philosophy in Human Development**, is a record of original research done by **Kongkona Sonowal**, during the period of her study in the **Department of Human Development**. Avinashilingam Institute for Home Science and Higher Education for Women, Coimbatore, under my supervision and guidance and the thesis has not formed the basis for the award of any Degree / Diploma / Associateship / Fellowship or similar title to any candidate of any University or Institute.


Signature of the
Head of the Department


Signature of the
Supervisor


Signature of the Dean
School of Home Science

DECLARATION

I hereby declare that the thesis entitled, “**Effectiveness of Developmentally Appropriate Practice-Based Curriculum Framework on Emergent Literacy and Numeracy Skills of Preschoolers**”, is the result of the investigation carried out by me in the Department of Human Development, Avinashilingam Institute for Home Science and Higher Education for Women, Coimbatore, under the supervision of **Dr. K. Arockia Maraichelvi**, Professor, Department of Human Development, Avinashilingam Institute for Home Science and Higher Education for Women, Coimbatore and it has not been submitted for the award of any Degree / Diploma / Associateship / Fellowship or similar title of any other University or Institute.


Signature of the Supervisor


Signature of the Candidate

ACKNOWLEDGEMENT

First and foremost, I honour God Almighty for being my source of strength and refuge. I praise him for his eternal love, and offer my sincere gratitude for the infinite grace, benevolence, immense blessings, and mercy showered on me throughout the study as well as for providing enough strength and courage to help me overcome the challenges, paving the way for the study's successful completion.

I express my deep thanks to Padma Bhushan **Sri Dr. T.S. Avinashilingam Ayya Avargal**, the founding President and the first Chancellor of Avinashilingam Institute for Home Science and Higher Education for Women, for creating this Temple of Learning and bestowing his blessings.

The first Vice Chancellor of the Institute, Padma Shri **Dr. Rajammal P. Devadas**, M.Sc, M.A, Ph.D., and Former Chancellor, a famous Home Scientist and Nutritionist who promoted the welfare of women and children, is acknowledged by me with deep thanks.

I would like to place my deep sense of gratitude and sincere thanks to **Dr. T.S.K. Meenakshisundaram**, M.A., M.Phil., Ph.D., Chancellor and Managing Trustee, Avinashilingam Institute for Home Science and Higher Education for Women, Coimbatore, for having provided the infrastructure and all amenities to carry out the study.

I express my appreciation to Late. Padmashri **Dr. P.R. Krishnakumar**, and **Prof. S.P. Thyagarajan**, D.Sc., Ph.D., and M.D., Former Chancellors of the Avinashilingam Institute for Home Science and Higher Education for Women, Coimbatore, for being dynamic administrators, and inspiring academicians.

I would like to express a profound sense of gratitude and sincere thanks to **Dr. V. Bharathi Harishankar**, M.A., M.Phil., Ph.D, FRSA, Vice Chancellor, Avinashilingam Institute for Home Science and Higher Education for Women, Coimbatore for providing infrastructural facilities and support for the conduct of the study.

I am enormously pleased to express my profound sense of gratitude to the Former Vice Chancellor of the Avinashilingam Institute for Home Science and Higher Education for Women, **Dr. Premavathy Vijayan**, M.Sc. M.Ed. M.Phil., Ph.D. who was endearing, and committed, and I thank her for allowing me to use the university's resources to conduct the research successfully.

I am profoundly grateful to **Dr. H. Indu**, Registrar, Avinashilingam Institute for Home Science and Higher Education for Women, Coimbatore, for her comprehensive administration support and encouragement, which played a pivotal role in the successful completion of my study.

I am extremely obliged to **Dr. Kowsalya**, Former Registrar, Avinashilingam Institute for Home Science and Higher Education for Women, Coimbatore, for extending all possible administrative support and encouragement towards the completion of the study.

I express my gratitude to **Dr. K Manimozhi** M.Sc., B.Ed., M.Phil., Ph.D., Former Controller of Examinations, and Prof. **Dr. K. Sambath Rani** M.R.Scj., M.Phil., M.Ed. (MR+VI), Ph.D., NET, Controller of Examinations, Avinashilingam Institute for Home Science and Higher Education for Women, Coimbatore, for extending all possible help in the submission of the research work.

My sincere gratitude to **Dr. G.P. Jeyanthi**, M.Sc., M.Phil., Ph.D., Former Director, Research and Consultancy, and **Dr. P. Lalitha**, M.Sc., M.Phil., Ph.D., Dean, Research & Consultancy, Avinashilingam Institute for Home Science and Higher Education for Women, Coimbatore, for their help and valuable suggestions during the tenure of my research work.

I record my immense thanks to **Dr. N. Vasugi**, M.Sc., M.Phil., Ph.D., Dean, Students Affairs and Former Dean, School of Home Science, and **Dr. S. Amsamani**, M.Sc., M.Phil., Ph.D., Dean, School of Home Science, Avinashilingam Institute for Home Science and Higher Education for Women, Coimbatore for their continued interest and constant support in the conduct of thesis work.

I would like to express a humble note of thanks to **Dr. Ramya Bhaskar** M.Sc., M.Phil., Ph.D., Assistant Professor (SG) and Head in-charge of the Department of Human Development, Avinashilingam Institute for Home Science and Higher Education for Women, Coimbatore, for her guidance and support.

I wish to express my profound gratitude to my supervisor, **Dr. K. Arockia Maraichelvi**, M.Sc., M.Phil., Ph.D., Professor, Department of Human Development, Avinashilingam Institute for Home Science and Higher Education for Women, Coimbatore, for being an exceptional mentor, educator, and guide. Her unwavering support and guidance have been invaluable throughout this journey. It has been a privilege to work under her remarkable and diligent supervision. Her insightful advice and thoughtful recommendations greatly enhanced the quality and direction of my dissertation. Working under her mentorship

provided me with an incredible opportunity to grow professionally in my field. I sincerely appreciate her tireless efforts and dedication - despite her demanding schedule, she generously devoted her time and support in every possible way. I will always remain deeply grateful for her concern, encouragement, and commitment throughout this incredible journey, marked by both challenges and achievements.

With high gratification, I would like to convey my sincere gratitude to Professor **S. Madhumathi**, Principal, Department of Home Science, Government Home Science College, Hassan, the Doctoral Committee expert, for her valuable advice and suggestions towards this research work.

Profoundly, I wish to express my gratitude to all the **Faculty members** in the Department of Human Development, Avinashilingam Institute for Home Science and Higher Education for Women, Coimbatore, for their constant support and encouragement towards my research.

I extend my wholehearted thanks to the **administrators of the preschools** for their permission and full cooperation in allowing me to collect data from the students. I am especially grateful to the preschool that allowed me to conduct the intervention and ensured the smooth execution of the programme. I also owe special gratitude to the educators who implemented the intervention with commitment and dedication.

I would like to thank **UGC (University Grants Commission)** for selecting me for the scheme of National Fellowship Scheduled Tribe (NFST) as entrusted and funded by the Ministry of Social Justice.

Above all, I am deeply grateful to my **parents, husband, and all my family members**, whose unwavering encouragement and support inspired me to follow my dream. Without their motivation and constant presence, this journey would not have been possible. I realize that words cannot fully express the extent of the hardships and sacrifices they have made for me.

I would like to record my deepest appreciation to my lovable **Friends** for their spontaneous encouragement and long-lasting moral support in all my endeavors.

I owe my gratitude to all my **well-wishers** for their constant encouragement, support, and prayer in the successful completion of this entire journey. I would also like to thank all those who participated in the study and helped to facilitate the research process.

LIST OF TABLES

TABLE NO.	TITLE	PAGE NO
I	Identified shortcomings in ECCE In India mapped to recommended interventions	25
II	Indicators of the Modified Emergent Literacy and Numeracy Assessment Pack – Outcomes of the panel discussion	59
III	Emergent Literacy and Numeracy Assessment Pack- Gradations and scores	61
IV	Indicators of the reference curriculum (High Scope and Head Start) aligned with the indicators of the Modified Assessment Pack	70
V	Indicator-wise time frame of implementing the DAP-based ECCE Curriculum Framework in the classroom setting	75
VI	Socio-demographic characteristics of the selected preschoolers	83
VII	Categorisation of the selected preschoolers based on their performance in Reading Skills	86
VIII	Categorisation of the selected preschoolers based on their performance in Writing Skills	88
IX	Categorisation of the selected preschoolers based on their performance in Numeracy Skills	90
X	Influence of Gender on preschoolers' Reading Skills	96
XI	Influence of Gender on preschoolers' Writing Skills	97
XII	Influence of Gender on preschoolers' Numeracy Skills	97
XIII	Influence of Birth order on preschoolers' Reading Skills	99
XIV	Influence of Birth order on preschoolers' Writing Skills	100
XV	Influence of Birth order on preschoolers' Numeracy Skills	100
XVI	Influence of Type of family on preschoolers' Reading Skills	102
XVII	Influence of Type of family on preschoolers' Writing Skills	103
XVIII	Influence of Type of family on preschoolers' Numeracy Skills	103

TABLE NO.	TITLE	PAGE NO
XIX	Influence of Type of ECCE centres enrolled on preschoolers' Reading Skills	105
XX	Influence of Type of ECCE centres enrolled on preschoolers' Writing Skills	106
XXI	Influence of Type of ECCE centres enrolled on preschoolers' Numeracy Skills	107
XXII	Influence of Parental educational status on preschoolers' Reading Skills	110
XXIII	Influence of Parental educational status on preschoolers' Writing Skills	112
XXIV	Influence of Parental educational status on preschoolers' Numeracy Skills	114
XXV	Influence of Parental occupational status on preschoolers' Reading Skills	117
XXVI	Influence of Parental occupational status on preschoolers' Writing Skills	119
XXVII	Influence of Parental occupational status on preschoolers' Numeracy Skills	121
XXVIII	ANCOVA summary for Phonological awareness (pre-test score as covariate)	126
XXIX	Pair-wise comparisons on Phonological awareness between control and experimental group	126
XXX	Estimated marginal means of Phonological awareness (controlling for pre-test score)	127
XXXI	ANCOVA summary for Print awareness (pre-test score as covariate)	130
XXXII	Pair-wise comparisons on Print awareness between control and experimental group	130
XXXIII	Estimated marginal means of Print awareness (controlling for pre-test score)	131

TABLE NO.	TITLE	PAGE NO
XXXIV	ANCOVA summary for Listening comprehension (pre-test score as covariate)	133
XXXV	Pair-wise comparisons on Listening comprehension between control and experimental group	133
XXXVI	Estimated marginal means of Listening comprehension (controlling for pre-test score)	134
XXXVII	ANCOVA summary for Alphabet writing (pre-test score as covariate)	137
XXXVIII	Pair-wise comparisons on Alphabet writing between control and experimental group	137
XXXIX	Estimated marginal means of Alphabet writing (controlling for pre-test score)	138
XL	ANCOVA summary for Number writing (pre-test score as covariate)	140
XLI	Pair-wise comparisons on Number writing between control and experimental group	140
XLII	Estimated marginal means of Number writing (controlling for pre-test score)	141
XLIII	ANCOVA summary for Number and operation (pre-test score as covariate)	143
XLIV	Pair-wise comparisons on Number and operation between control and experimental group	143
XLV	Estimated marginal means of Number and operation (controlling for pre-test score)	144
XLVI	ANCOVA summary for Data analysis and measurement (pre-test score as covariate)	147
XLVII	Pair-wise comparisons on Data analysis and measurement between control and experimental group	147

TABLE NO.	TITLE	PAGE NO
XLVIII	Estimated marginal means of Data analysis and measurement (controlling for pre-test score)	148
XLIX	ANCOVA summary for Algebra and pattern-making (pre-test score as covariate)	151
L	Pair-wise comparisons on Algebra and pattern-making between control and experimental group	151
LI	Estimated marginal means of Algebra and pattern-making (controlling for pre-test score)	152
LII	ANCOVA summary for Geometry and spatial awareness (pre-test score as covariate)	155
LIII	Pair-wise comparisons on Geometry and spatial awareness between control and experimental group	155
LIV	Estimated marginal means of Geometry and spatial awareness (controlling for pre-test score)	156

LIST OF FIGURES

FIGURE NO.	TITLE	PAGE NO
1	Conceptual framework of the study	50
2	Methodology of Phase I - At a glance (Population and sampling)	64
	Methodology of Phase I - At a glance (Construction of tools)	65
	Methodology of Phase I - At a glance (Conduct of the study)	66
	Methodology of Phase I - At a glance (Analysis of data)	66
3	Methodology of Phase II - At a glance (Population and sampling)	78
	Methodology of Phase II - At a glance (Construction of tools)	79
	Methodology of Phase II - At a glance (Conduct of the study)	80
	Methodology of Phase II - At a glance (Analysis of data)	81
4	Mean scores and gradations of preschool children on Literacy skills	92
5	Mean scores and gradations of preschool children on Numeracy skills	93
6	Reading skills score of preschoolers by Birth order	99
7	Numeracy skills score of preschoolers by Birth order	101
8	Writing skill scores of preschoolers by the Type of ECCE centres	106
9	Numeracy skill scores of preschoolers by the Type of ECCE centres	107
10	Reading skills score of preschoolers by Mothers' educational status	110
11	Writing skills score of preschoolers by Fathers' educational status	112
12	Numeracy skills score of preschoolers by Parental educational status	115

FIGURE NO.	TITLE	PAGE NO
13	Reading skills score of preschoolers by Parental occupational status	117
14	Numeracy skills score of preschoolers by Mothers' occupational status	122
15	Mean plot of Phonological awareness for the experimental and control groups (Adjusted for Pretest scores)	128
16	Mean plot of Print awareness for the experimental and control groups (Adjusted for Pretest scores)	132
17	Mean plot of Listening comprehension for the experimental and control groups (Adjusted for Pre-test score)	135
18	Mean plot of Alphabet writing for the experimental and control groups (Adjusted for Pre-test score)	139
19	Mean plot of Number writing for the experimental and control groups (Adjusted for Pre-test score)	142
20	Mean plot of Number and operation for the experimental and control groups (Adjusted for the pre-test score)	145
21	Mean plot of Data analysis and measurement for the experimental and control groups (Adjusted for Pre-test score)	149
22	Mean plot of Algebra and pattern making for the experimental and control groups (Adjusted for Pre-test score)	153
23	Mean plot of Geometry and spatial awareness for the experimental and control groups (Adjusted for Pre-test score)	157

LIST OF APPENDICES

APPENDIX NO.	TITLE
I	Ethical Clearance Certificate
II	General profile questionnaire
III	Emergent Literacy and Numeracy Assessment Pack
IV	Blueprint of DAP-based ECCE curriculum framework focused on Emergent Literacy and Numeracy Skills of preschoolers (3-6 years)
V	Detailed DAP-based ECCE curriculum framework focused on Emergent Literacy and Numeracy Skills of 4-5 years old children with sample lesson plans
VI	Glimpses of implementing DAP-based ECCE Curriculum framework focused on Emergent Literacy and Numeracy Skills of preschoolers

LIST OF ABBREVIATIONS

ECCE	-	Early Childhood Care and Education
DAP	-	Developmentally Appropriate Practice
NAEYC	-	National Association for the Education of Young Children
NEP	-	National Education Policy
UNESCO	-	United Nations Educational, Scientific and Cultural Organization
UNICEF	-	The United Nations International Children's Emergency Fund
OECD	-	The Organisation for Economic Co-operation and Development
SDGs	-	Sustainable Development Goals
ICDS	-	Integrated Child Development Services
NCERT	-	National Council of Educational Research and Training's
NUEPA	-	National University of Educational Planning and Administration
MWCD	-	Ministry of Women and Child Development
GOI	-	Government of India
ASER	-	The Annual Status of Education Report
3Rs	-	Reading, Writing, and Arithmetic
NIOS	-	National Institute of Open Schooling
FLN	-	Foundational Literacy and Numeracy
CCMC	-	Coimbatore City Municipal Corporation
