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# Play, Creativity and Digital Literacy in Young Children's Use of Tablets

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University of Sheffield

October 2015

# Outline of talk

- **Digital literacy:** *Descriptions and definitions*
- **Exploring play and creativity in young children's use of apps:** *Findings from research*
- **Young children's use of tablets in early years settings and schools:** *Sharing practice*
- **Conclusion:** *Looking forward*

# Digital Literacy





Surface  
Th21/Qual mid2  
B59°/V70°  
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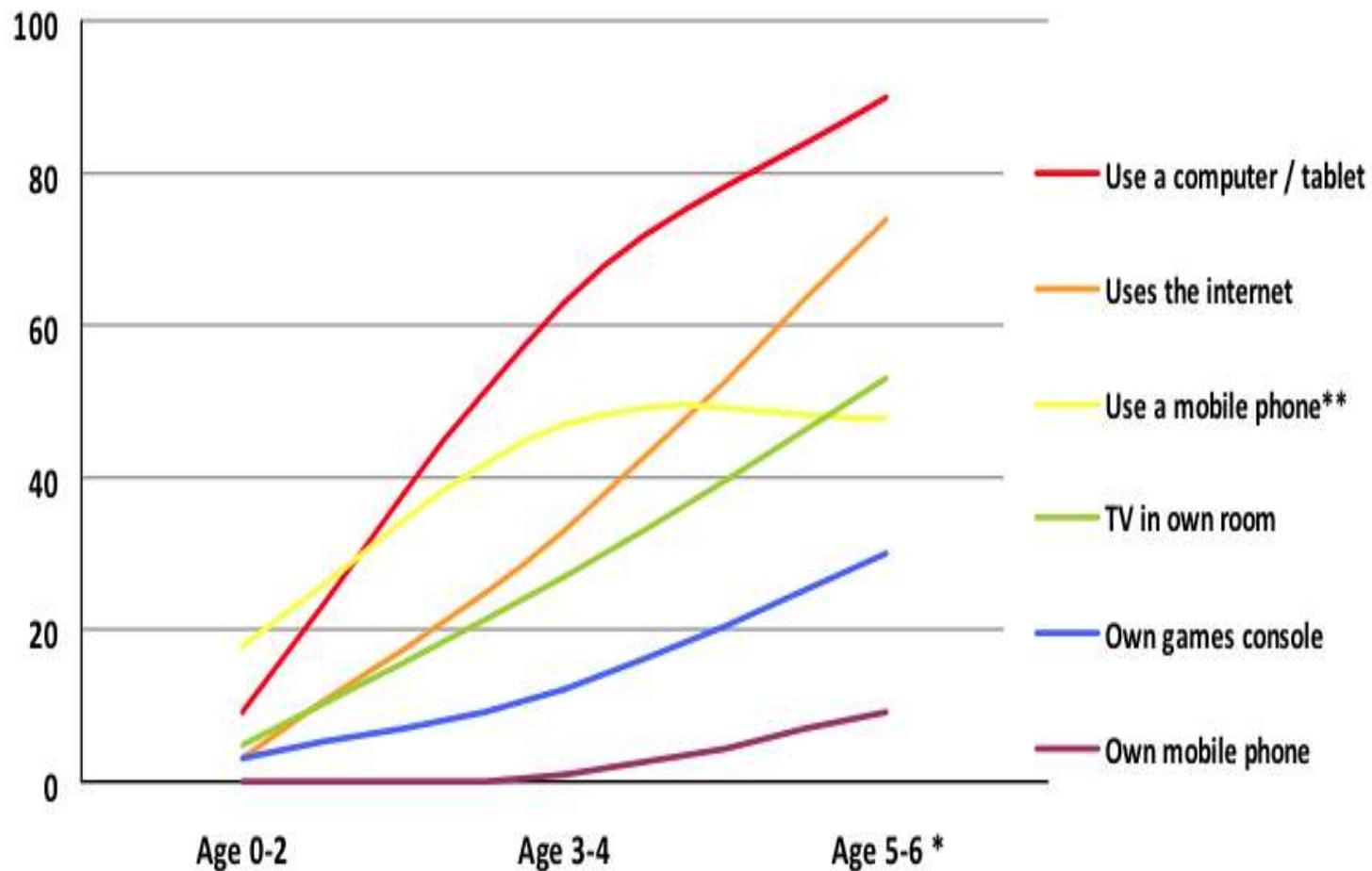
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Do you know

To see what she shares with friends, send her a friend request.

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Now  
2013  
Born



Base: All age 0-4 (200) \* Data for 5-6 year olds from CHILDWISE Monitor 2013-14

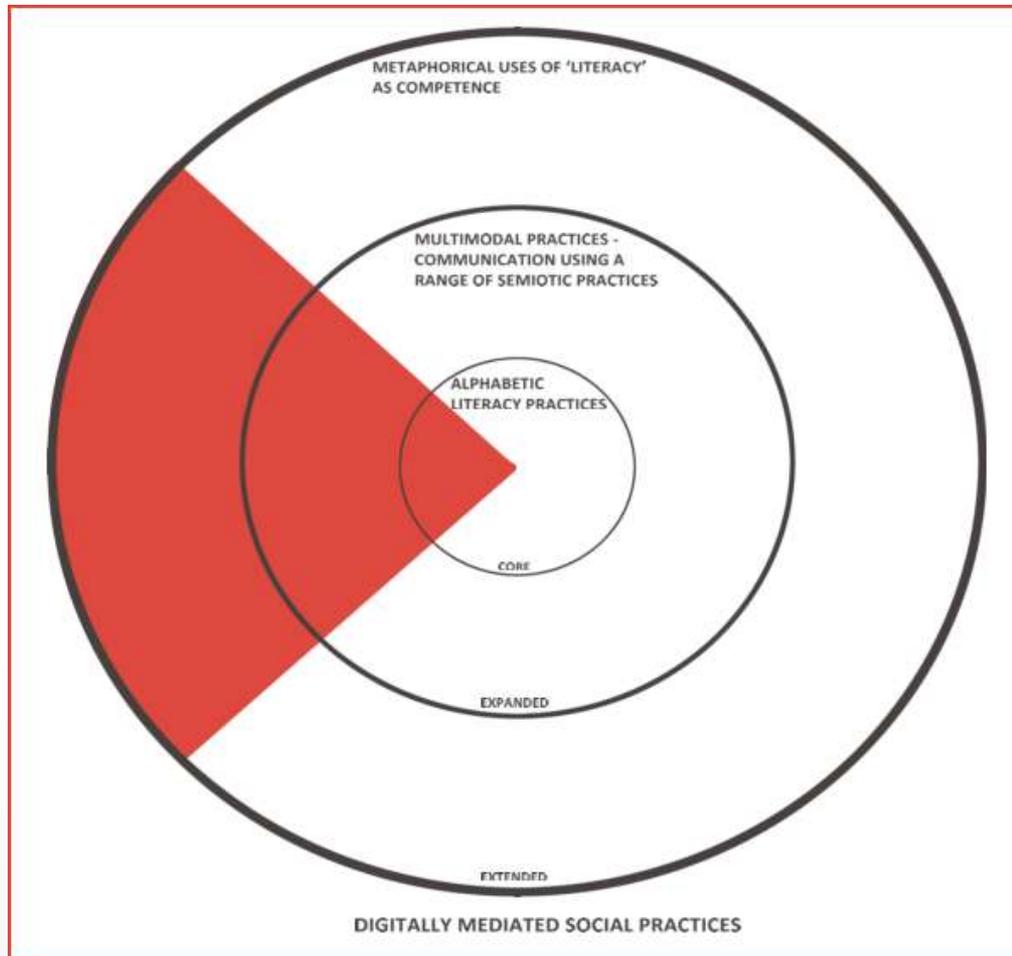
\*\* Mobile phone use, data for 5-6 year olds from CHILDWISE Monitor 2012-13

# Digital Literacy

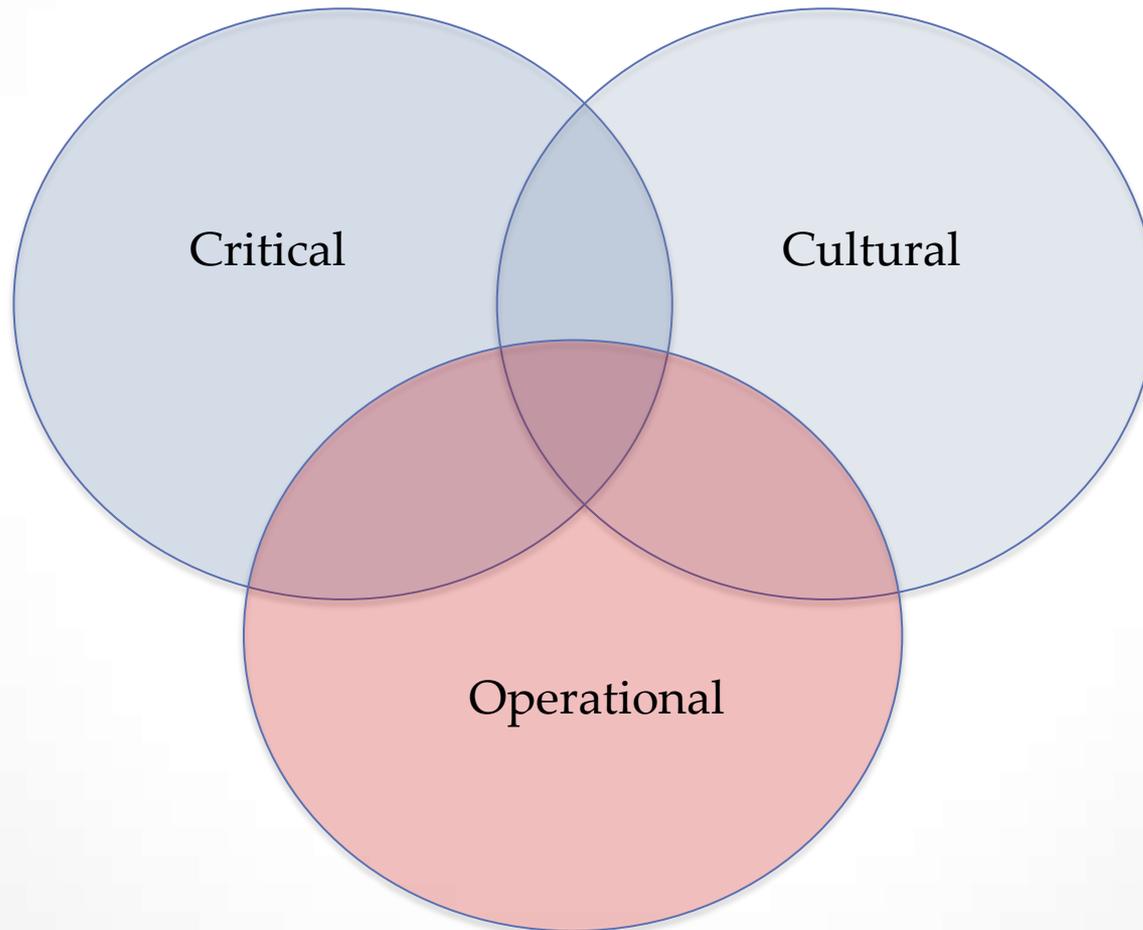
*...the ability to understand and use information in multiple formats from a wide range of sources when it is presented via computers.*

(Glister, 1997:1)

# Digital Literacy



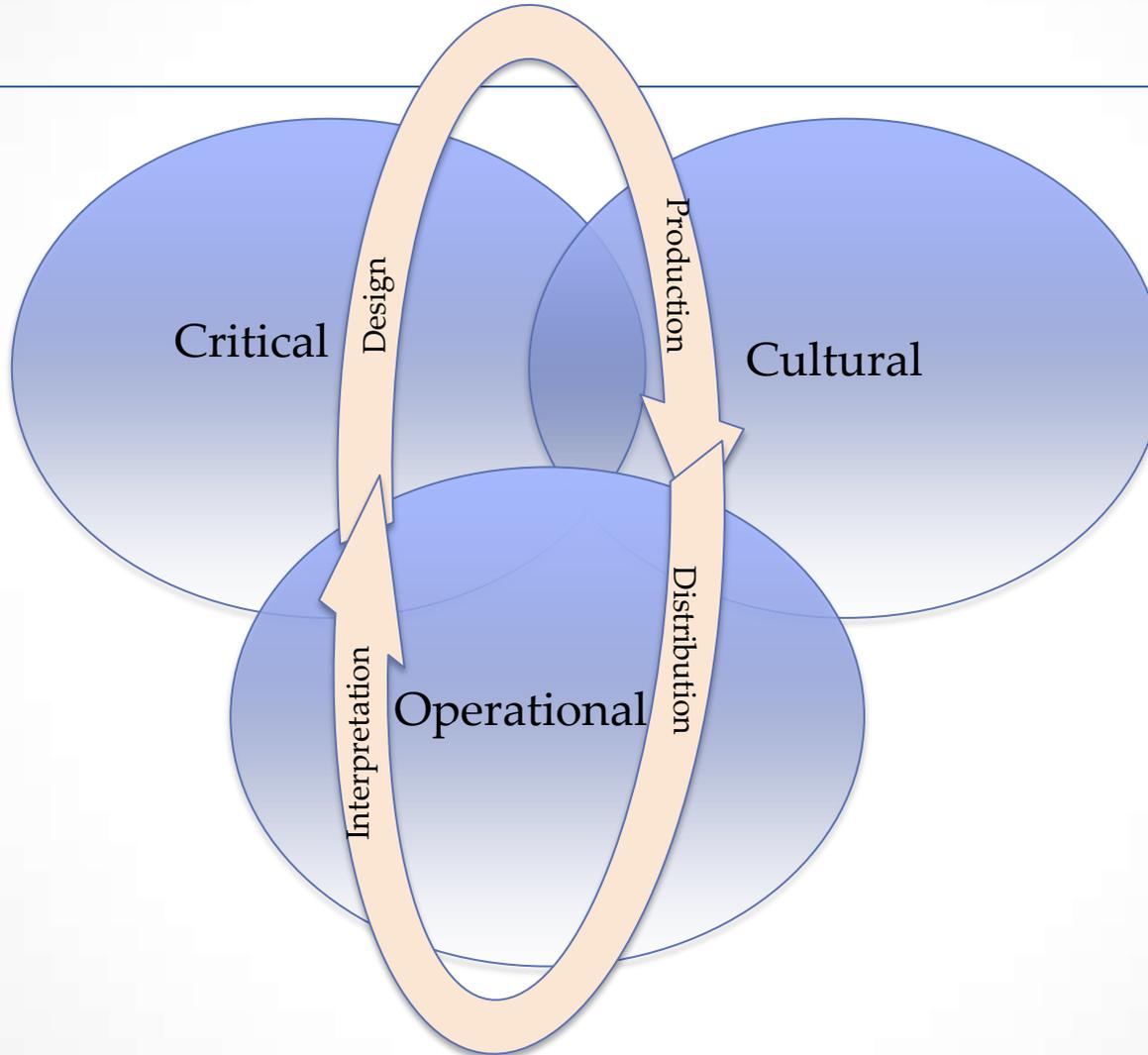
# 3D Model of Literacy (Green, 2012)



# Processes involved in socio-semiotic communication (Colvert, 2015)

- Design
- Production
- Distribution
- Interpretation

# Adapted 3D Model of Literacy (Colvert, 2015)



# Exploring Play and Creativity in Pre-Schoolers' Use of Apps

# 2010

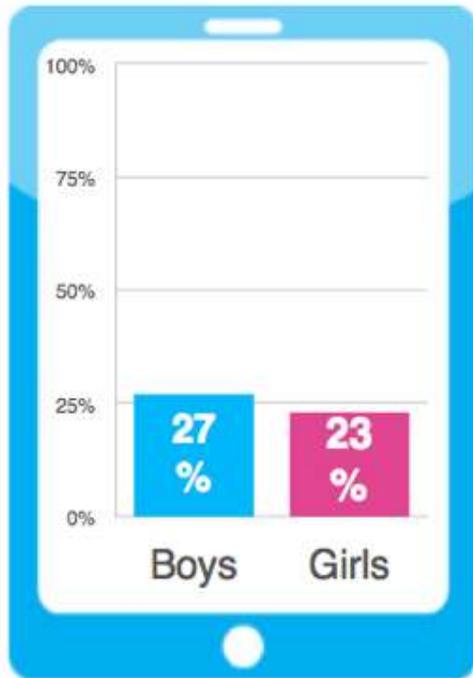


# Research Design

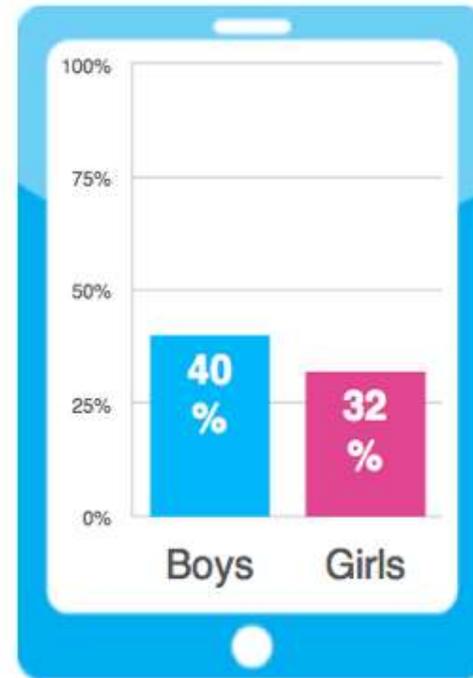
<b>Stage 1</b>	Online survey of 2000 parents of 0-5 year-olds with access to tablets
<b>Stage 2</b>	Case studies of 6 families with children aged 0-5
<b>Stage 3</b>	Observations of 12 children from Montenev Nursery/ Primary School using the top 10 favourite apps, in addition to 6 augmented reality apps
<b>Stage 4</b>	Analysis of the affordances of apps

# Stage 1: Survey

# Technology: Ownership of Device

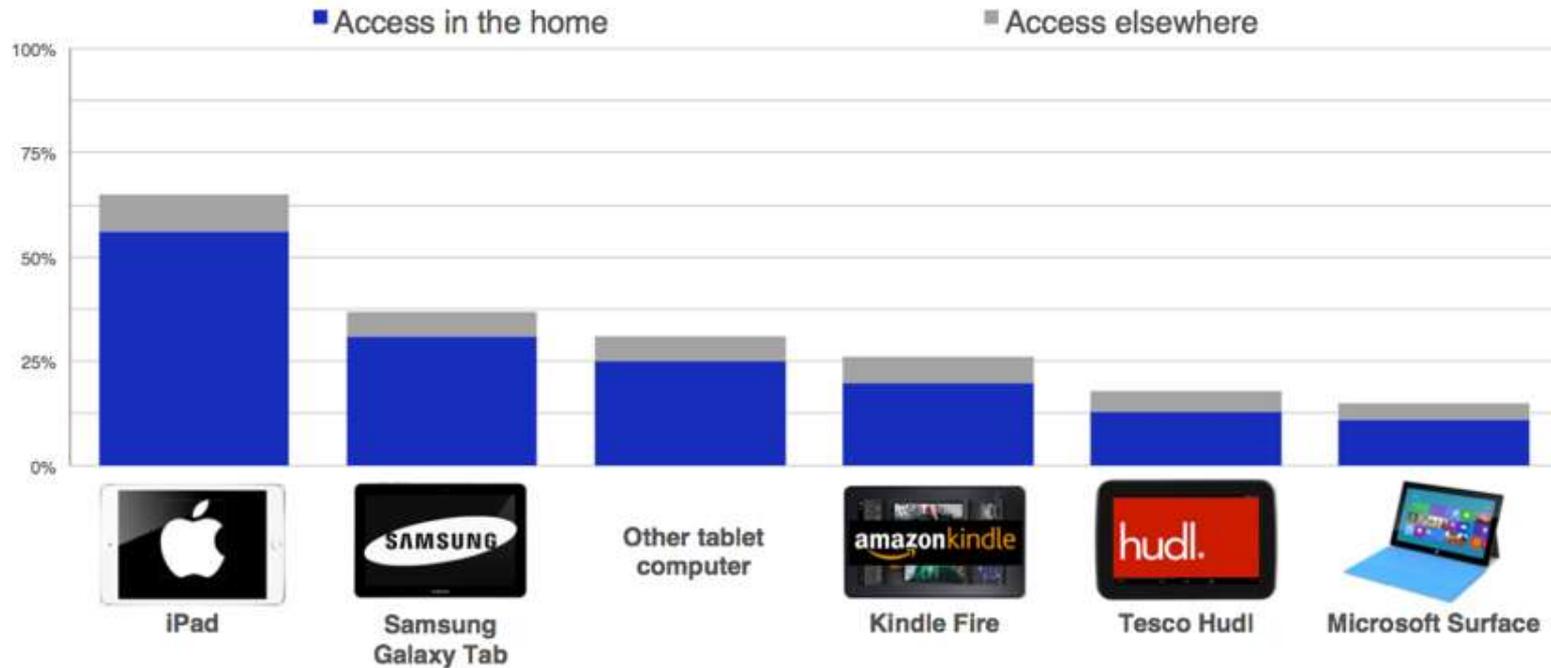
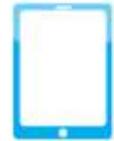


0-2s



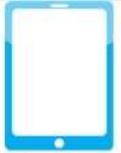
3-5s

# Tablet: Access



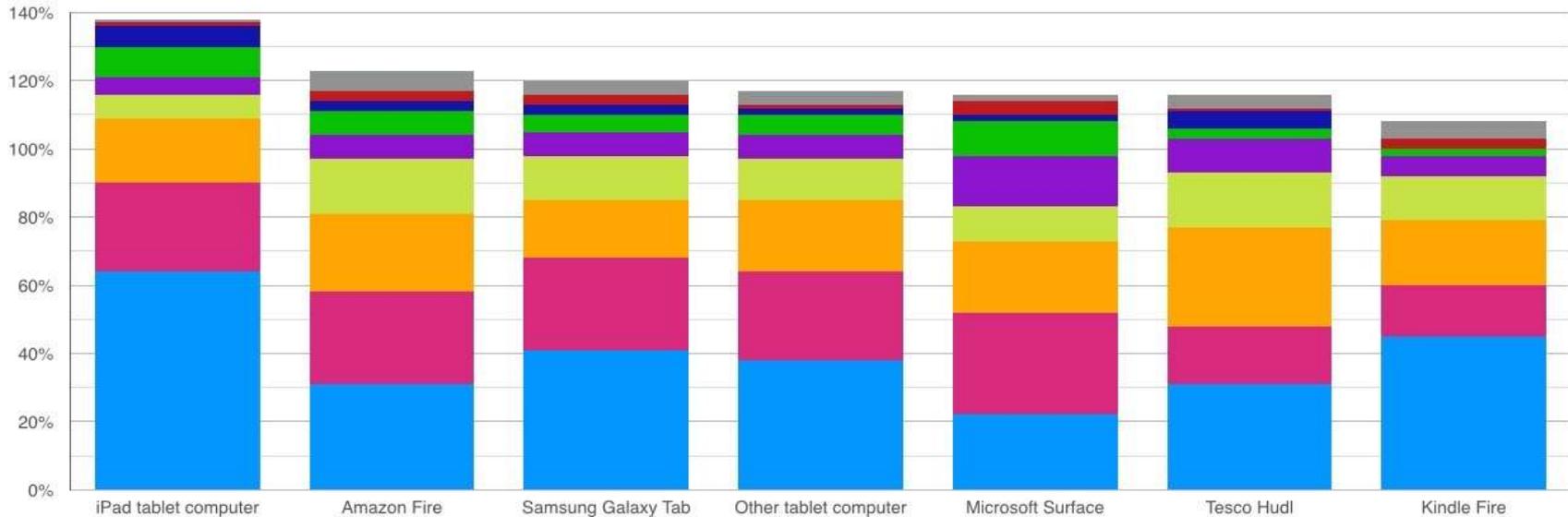
Source: Dubit/University of Sheffield - February 2015. AQ1 Which of these does your child have access to? (Base 2000)

# Tablet: Access elsewhere



Of those who access the tablet outside the home we split out the places of access by tablet model. This shows that children of this age often access tablets in more than one place

- At a grandparent's house
- In an after school / breakfast club
- None of these
- At another relative's house
- At school
- At a friend's house
- At nursery, early years, playschool
- Out of school group
- At a child minder's house



Source: Dubit/University of Sheffield - February 2015. AQ2. You have indicated that your child can access the following devices elsewhere. For each device listed please indicate where your child accesses it? (Base 2000)

## Tablet: Duration



Mean hours on a  
weekday



Mean hours on a  
weekend day

# A day in the life of: 0 to 2 year olds



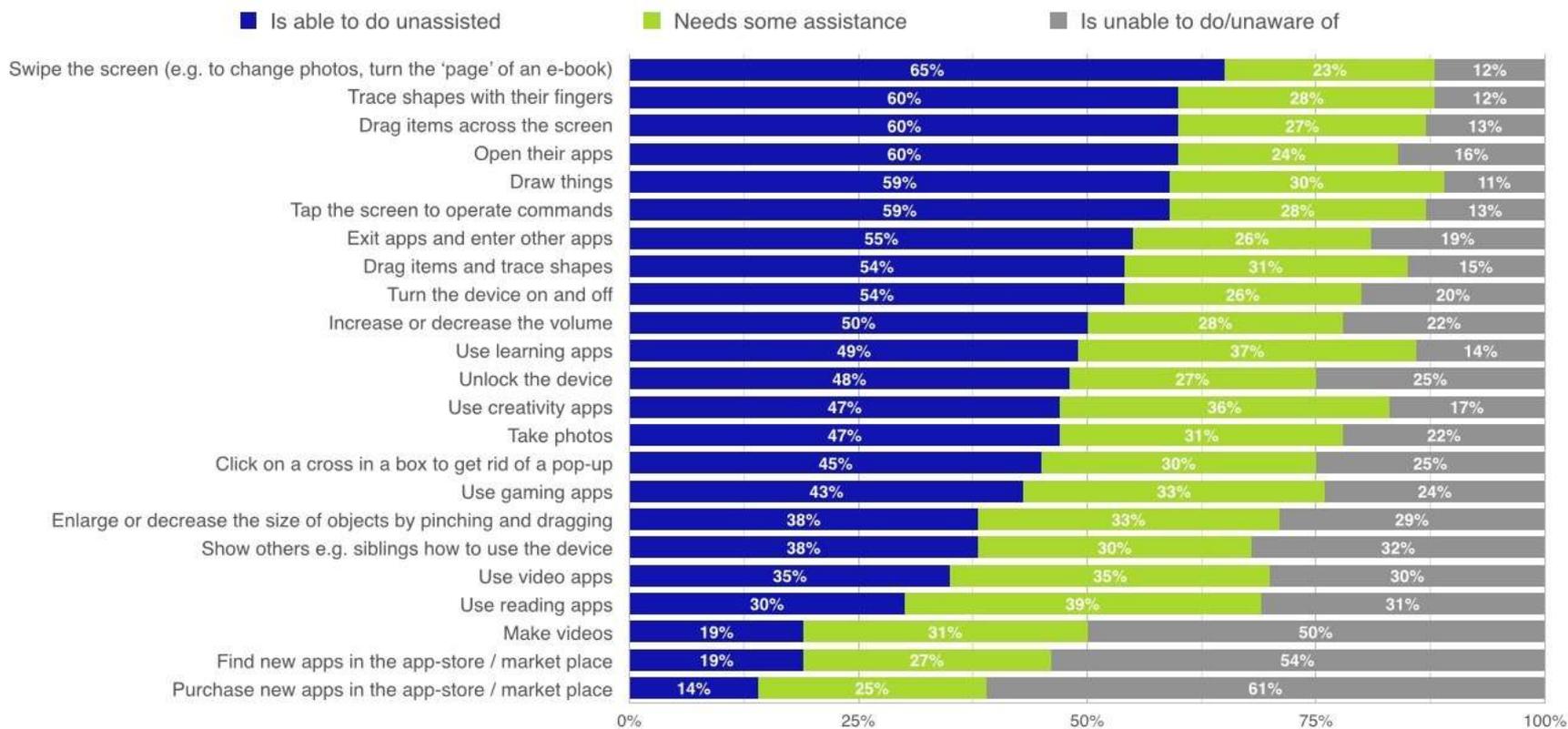
		6:00am	9:00am	12:00pm	2:00pm	4:00pm	6:00pm	8:00pm
Weekday	Activity	Collages, search engines	Collages	Magazines, search engine	To help with education/ learning	Colouring in or looking at pictures	Making videos or watching videos	Making videos
	Motivation	Distraction or quiet time		Encourage play and creativity			Distraction or quiet time	Distraction or quiet time
Weekend	Activity	Watching catch up TV	Music videos on YouTube	Browsing the internet or Watching YouTube videos	To help education/ learning, play apps for gaming, watch YouTube	Watching music videos on YouTube	Watching music videos on YouTube	Reading stories
	Motivation	Distraction or quiet time		Encourage play and creativity			Bedtime stories	Bedtime stories

# A day in the life of: 3 to 5 year olds



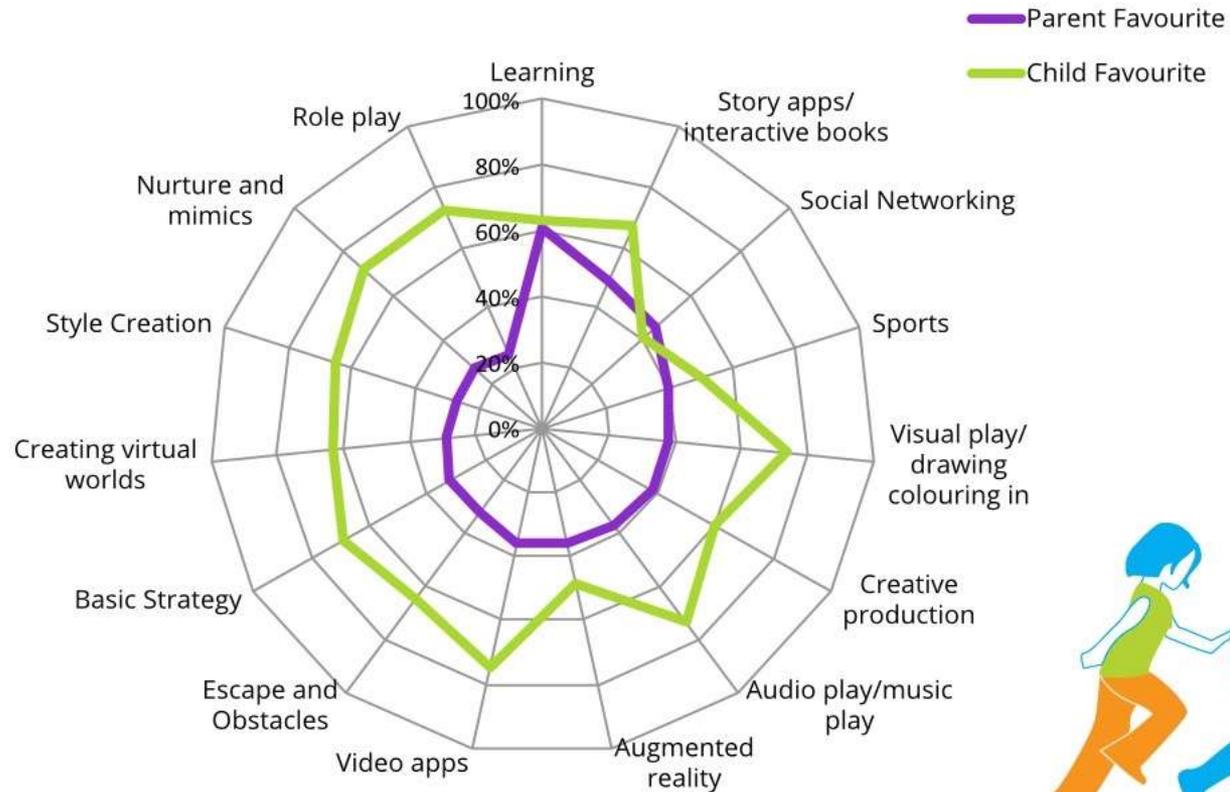
		6:00am	9:00am	12:00pm	2:00pm	4:00pm	6:00pm	8:00pm
Weekday	Activity	Magazines or collages	Magazines	Search engine or browsing internet	Browsing internet, watching video or drawing	Play with/use apps for gaming	Watching video, listening to stories or browsing internet	Browsing internet
	Motivation	Distraction or quiet time		Encourage play and creativity		/ Educational Purposes		Sit back experience, Encourage creativity and play
Weekend	Activity	Watch YouTube videos			Watch YouTube videos, play apps for gaming	Play apps for gaming	Watch YouTube videos, watching video, stories/ audiobooks	Browsing internet
	Motivation	Distraction or quiet time	Encourage play and creativity		/ Educational Purposes		Sit back experience, Encourage creativity and play	Bedtime stories, Sit back experience

# Tablet Use: Competence



Source: Dabit/University of Sheffield - February 2015. DQ1 We want to understand how comfortable your child is using a tablet. (Base 2000)

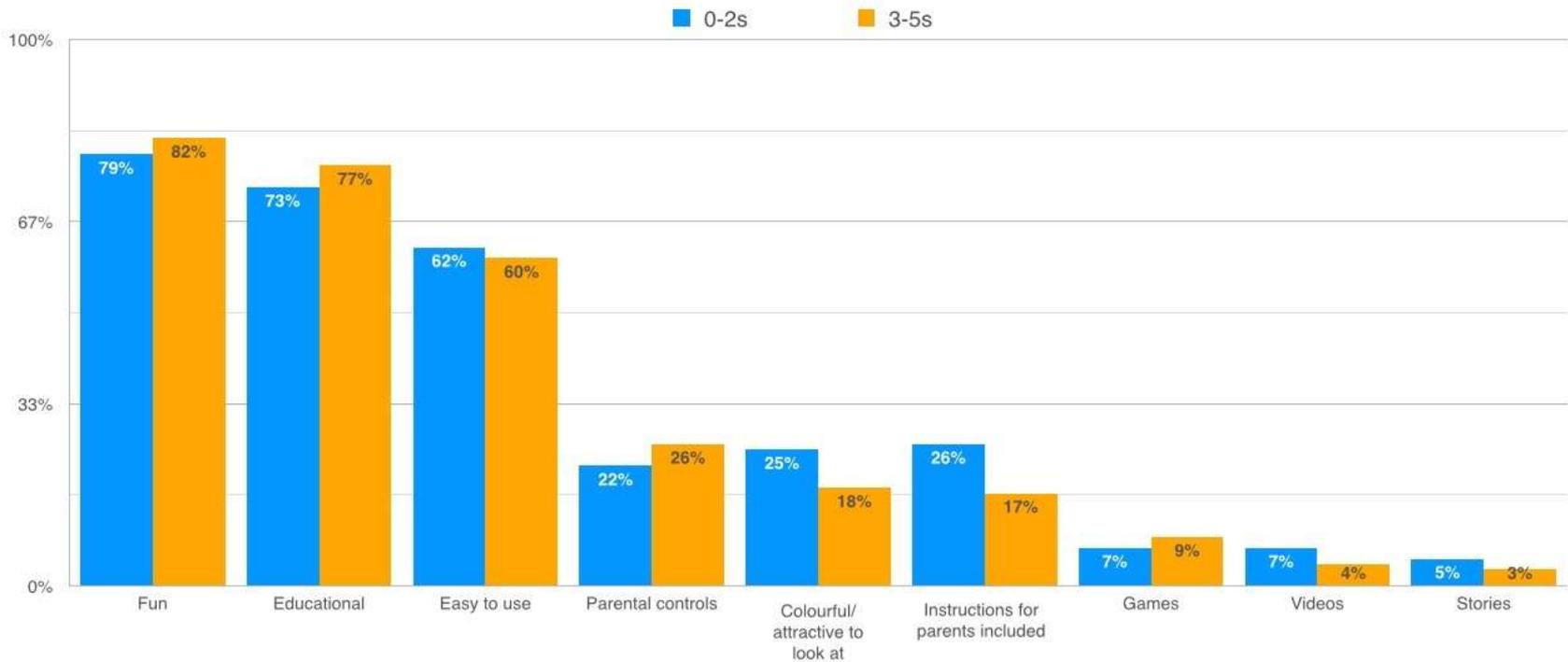
# Apps: Parent vs Child Favourites



# App Features: Important



When searching for new apps for their children parents' top priority is that the app is fun for their child to use, then followed closely by educational features. Instructions for parents is only important for around a fifth of parents, and is more important for parents of younger children



Source: Dubit/University of Sheffield - February 2015. CQ9 Please rank (in order of importance) the following features of apps that you look for when choosing for your child (Top 3 rank) (Base 2000)

# Apps: Influences on downloads



Searching the  
App Store/Play  
Store



Parents



Siblings



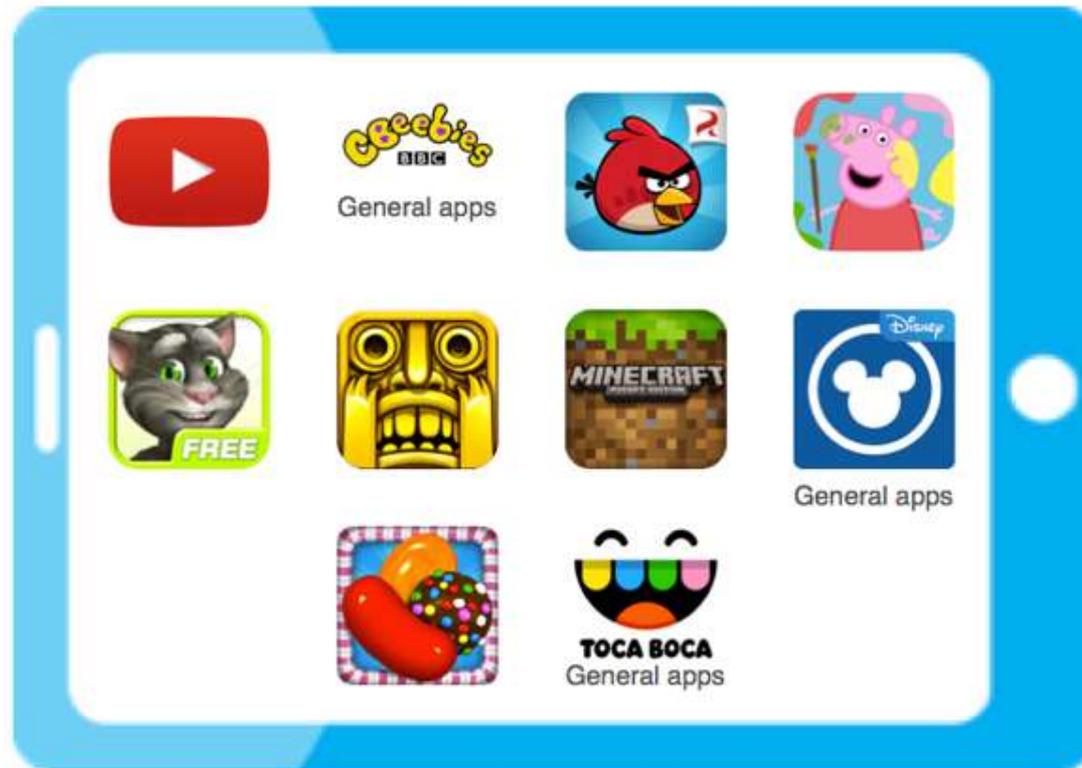
Friends



In-app  
advertising



# Tablet apps: Top 10



Source: Dublin/University of Sheffield - February 2015. C-Q7. Please write your child's favourite five apps at this moment in time? (Base 2000)

Name	Age	Gender	Ethnic group	Social grade	Parent age	Sibling
Tommy	6 mos	M	White	E	28	Brother 6 yrs
Angela	2 yrs 3 mos	F	White	C2	30	Brother 6 yrs
Kiyaan	2 yrs 9 mos	M	Other Asian	A	35	—
Amy	2 yrs 11 mos	F	White	C1	27	—
Arjun	3 yrs	M	Indian	B2	32	Sister 10 yrs
Jade	4 yrs 11 mos	F	White	D	28	—

# Case Studies





# Methods



Interview  
Film (researcher, parent)  
Photos  
'Play tour'  
Chestcam



# Key Findings

- Similar to survey in terms of range and genres of apps used and patterns of use across the day
- Tablets embedded into everyday play activities e.g. building dens
- Parents reported their children had developed a range of digital literacy skills and knowledge as a result of using tablets
- Online and offline merging in relation to play, creativity and literacy





# Digital Literacy

- Children were reading and writing a wide range of texts on tablets in the home e.g. phonics games, drawing apps, e-books
- They were able to: operate tablet; open and close apps; navigate apps; use camera features
- YouTube was central to many meaning-making practices
-

YouTube

LittleBabyBum

Home Videos Playlists Channels Discussion About

Wheels On The Bus | Part 7 | Nursery Rhymes | HD Version by LittleBabyBum  
81,305,314 views · 7 months ago  
Download our videos: <http://www.littlebabybum.co.uk>  
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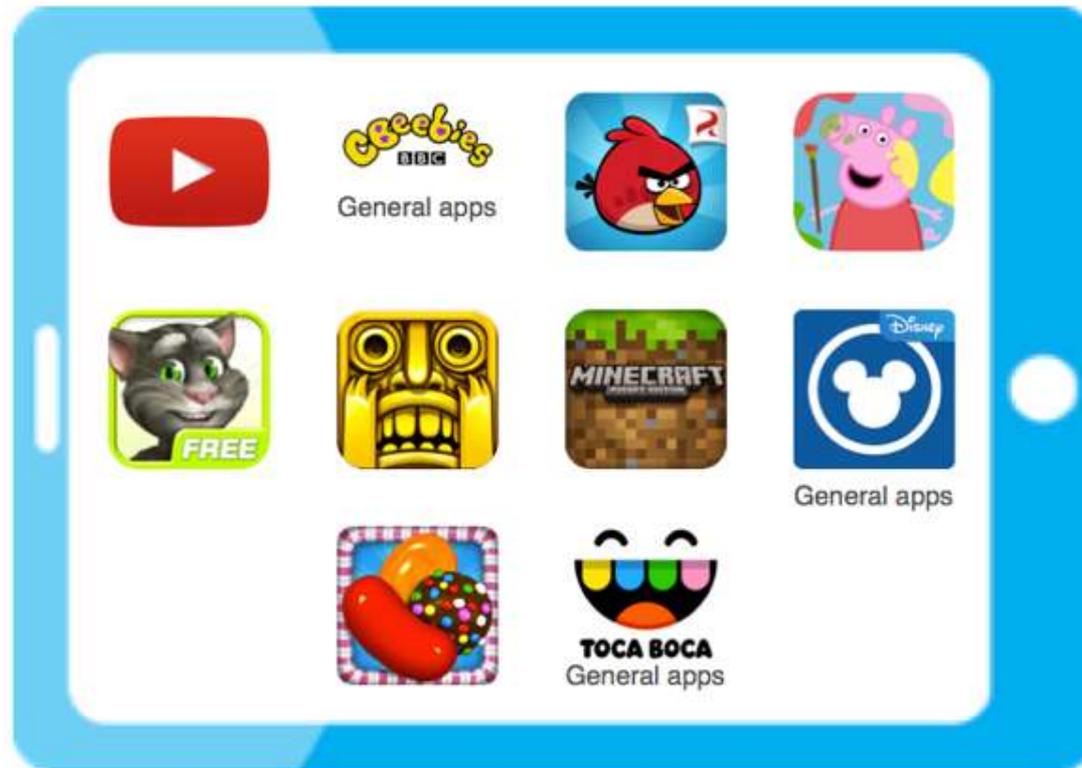
FEATURED VIDEOS

Best of EvanTubeHD, EvanTubeRAW & EvanTubeGaming! Make sure to SUBSCRIBE to all 3 CHANNELS!

# Stage 3: Observations



# Tablet apps: Top 10



Source: Dublin/University of Sheffield - February 2015. C-Q7. Please write your child's favourite five apps at this moment in time? (Base 2000)

# Augmented Reality



# Data analysis

## Hughes' (2002) Play Types

Symbolic play  
Rough and tumble play  
Socio-dramatic play  
Social play  
Creative play  
Communication play  
Dramatic play  
Locomotor play  
Deep play  
Exploratory play  
Fantasy play  
Imaginative play  
Mastery play  
Object play  
Role play  
Recapitulative play

## Robson's (2014) Creative Thinking Indicators

### EXPLORATION

E1 – Exploring  
E2 – Engaging in new activity  
E3 – Knowing what you want to do

### INVOLVEMENT AND ENJOYMENT

I1 – Trying out new ideas  
I2 – Analysing ideas  
I3 – Speculating  
I4 – Involving others

### PERSISTENCE

P1 – Persisting  
P2 – Risk-taking  
P3 – Completing challenges

# Example of Analysis

App	Types of Play	Types of Creative Thinking
<b><i>CBeebies Playtime</i></b>	4. Social play 5. Creative play 6. Communication play 8. (Virtual) Locomotor play 10. Exploratory play 12. Imaginative play 14. Object play	Creativity: Drawing Making sounds Creative Thinking: E1: Exploring E2: Engaging in new activity E3: Knowing what you want to do I1: Trying out ideas I2: Analysing ideas I3: Speculating I4: Involving others P1: Persisting P3: Completing challenges
<b><i>Candy Crush Saga</i></b>	14. Object play	Creative Thinking: E2: Engaging in new activity E3: Knowing what you want to do I3: Speculating

# Features of apps that limit play and creativity

<b>Purpose of app</b>	Purpose not clear
<b>Design features</b>	Tappable areas leave little margin for error
<b>Commercial properties</b>	In-app adverts in the form of pop-ups
<b>Scaffolding of use</b>	Limited use of text-to-speech function
<b>Promotion of play and creativity</b>	Few opportunities to explore and experiment

# Features of apps that foster play and creativity

<b>Purpose of app</b>	Does not have too many aims
<b>Design features</b>	Home icon visible on each screen
<b>Commercial properties</b>	In-app purchases limited
<b>Scaffolding of use</b>	Modelling of responses used where appropriate
<b>Promotion of play and creativity</b>	Few opportunities to explore and experiment

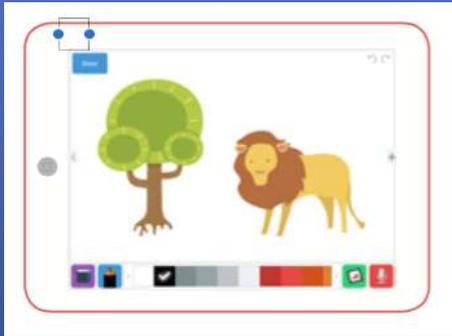
# Using Tablets in Early Years Settings and Schools

# Choosing apps for pre-schoolers

- Is the app designed for a pre-school audience?
- Is the app produced by a company that has an established catalogue for this age group?
- Are the aims of the app clear?
- Does the app allow practitioners to set levels of challenge?
- Is the app easy to navigate? For example, is the home page clearly visible? Is the use of written text limited?
- Does the app offer guides for children in how to use it e.g. arrows that point to what to tap, or a voiceover that tells children what to do if there is a long pause?
- If the app is an e-book, does it highlight words as they are read by a narrator?
- Are pop-up adverts and in-app purchases absent or limited in number?
- Can children add their own features by taking photographs that appear in the app, inserting drawings etc,?
- Are children rewarded for effort e.g. by characters cheering, badges and so on?
- Does the app promote play and experimentation, rather than focus on a narrow set of skills?
- Does the app challenge children to solve problems and speculate about possible alternatives?
- Does the app prompt children to ask questions and reflect on their actions?

# Creating stories and films

My Story



Sock Puppets



Imagination  
and creativity

Storytelling

Oral skills

iStopMotion



Puppet Pals



# Drawing and early mark-making

My Story



Using line, shape, form, exploring shapes and patterns

Sock Puppets



Letter formation

Oral skills

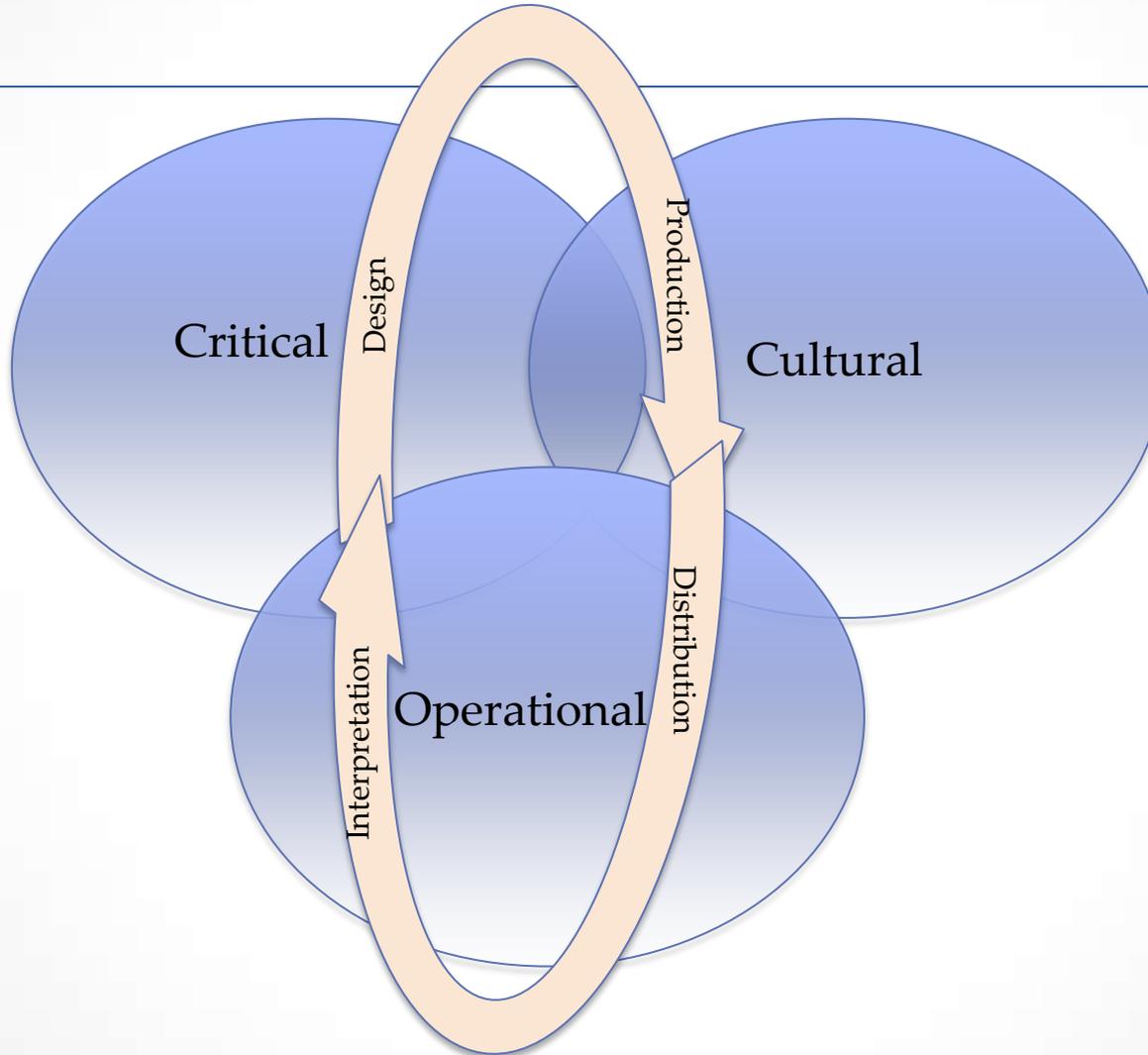
Draw and Tell



Sago Mini-Doodlecast



# Adapted 3D Model of Literacy (Colvert, 2015)



# Augmented Reality Apps



Quiver App



# Squigglefish



# Aurasma

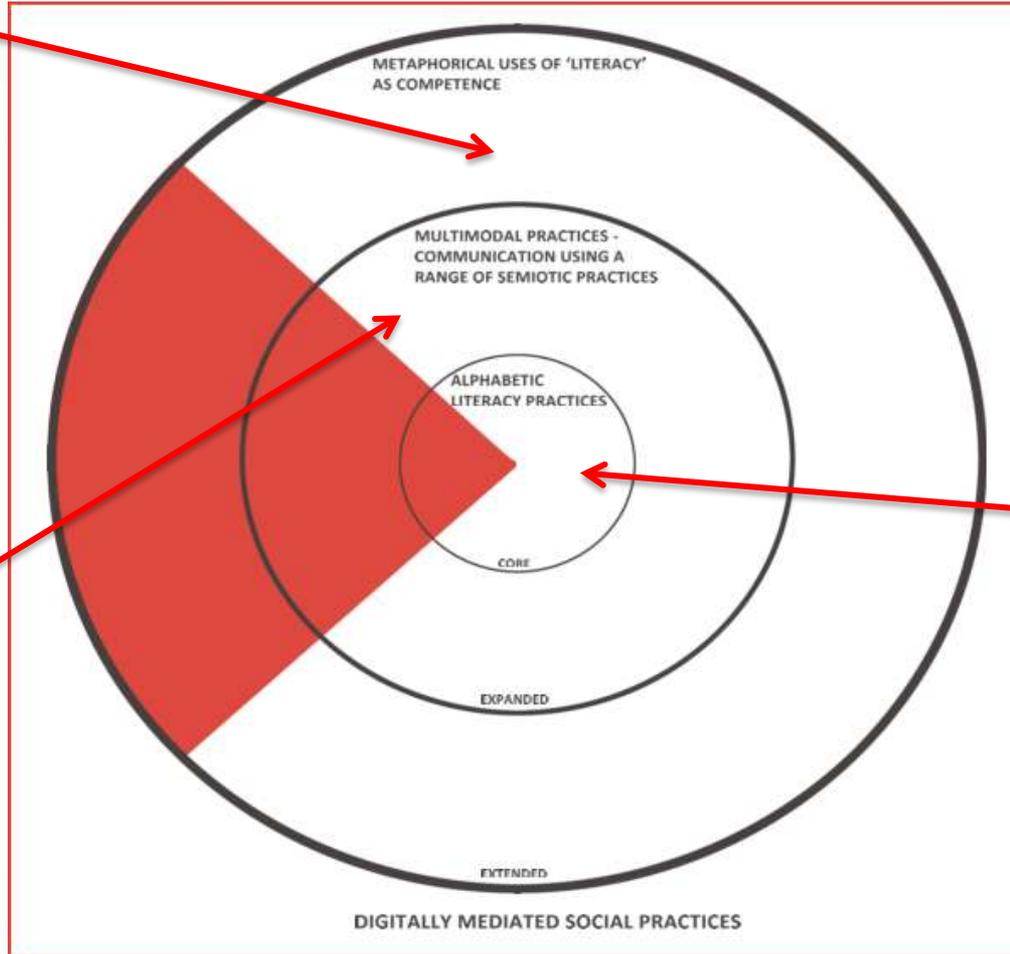


# QR Codes



## Information/ digital literacy

- Choosing and applying information
- Technical skills related to operating technologies



## Multimodal design

- Learning about the affordances of modes
- Choosing modes to suit the purpose
- Understanding audience

## Alphabetic literacy practices

- Phoneme-grapheme correspondence
- Writing simple sentences
- Understanding narrative structure
- Comprehending and responding to stories

# Conclusion

- Many children are using tablets/ touchscreens from birth – this has major implications for learning
- Literacy in the 21<sup>st</sup> century is much more than alphabetic print, but alphabetic print still key to communicative practices
- Play, creativity and digital literacy can be fostered through the use of tablets, but apps need to be carefully chosen
- It is important for schools and kindergartens to introduce tablets into the curriculum as otherwise the digital divide will be even greater
- We have to prepare children for their future lives, so looking forward...



# The future is now!



# www.techandplay.org



**TAP**  
Technology and Play

Exploring play and creativity in pre-schoolers' use of apps

Find out more about our study that examined pre-school children's use of apps on tablets, to identify how far apps for pre-school children (aged 0-5) promote play and creativity.

#techandplay

Project Partners

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