

Coding Sheet

NB: Coding was done using EPPI reviewer 4, which allows for a better representation of the dimension of the coding set.

Code	Answer	Comments
ADMIN CODES		
<i>Include/Exclude:</i>	Aggregative Configurative Commentary Exclude	
<i>Nature of the study:</i>	Mobile Learning in LICs Mobile learning & Development Mobile learning & Pedagogy & Development	
<i>Family of intervention?</i>	Embedded in formal education programme Embedded in informal education programme Embedded in other programme Independent programme	
<i>Citation of the study:</i>		
<i>Region:</i>		
<i>Research question:</i>		
<i>Domain of the study:</i>	Academia Grey literature	
<i>Type of study:</i>	Journal article Research report Evaluation report Conference paper Book/chapter Thesis/Dissertation	
<i>Linked studies</i>		
INTERVENTION CODES		
<i>What intervention is applied (face value)?</i>		
<i>What ML4D approach?</i>	Learner focused teacher focused	
<i>Describe the intervention:</i>		

<i>Intervention category:</i>	Literacy Numeracy Teacher Development Extension service Feasibility mHealth Distance education Other	
<i>Family of intervention:</i>	Embedded in formal education Embedded in informal education Embedded in other programme independent programme	
<i>Identify components if possible:</i>	Provide mobile tech Provide new curriculum/content Provide software/infrastructure Training on tech use Content development Social connections Co-intervention facilitated? (record & specify)	
<i>Identify educational components if possible:</i>	'text' books lesson plans/video lessons quizzes/exercises extra/supplementary information forum reminders educational software	
<i>Describe what type of educational content is used?</i>	Local content External content	
<i>Who developed the content?</i>	Local Foreign Joint	
<i>Was the content used before?</i>	Yes No	
<i>What technology is used?</i>	Basic/Feature phone Smart phone Tablets/e-readers Radio PDAs Laptop/netbooks Gaming device MP3	
<i>What application of it?</i>	Voice (interactive) Voice Notes SMS Internet access: WIFI/WLAN Internet access: 3G e-books Social networks Camera/video GPS Games Speech recognition	
<i>What makes the intervention mobile?</i>	The technology is potentially mobile The learning/teaching experience is potentially mobile	
<i>Where is the mobile context?</i>	Literally learning anytime, anywhere Home use of the device	

	Using the device in a work setting Using the device in a semi-formal setting (eg field trips) Classroom use	
<i>How is the tech used?</i>	To teach to learn to administer to connect/communicate To access information Other	
<i>Pedagogic approach (if stated)?</i>	Learner-centered Context-based/aware learning Game-based Inquiry-based/experiential Interactivity Collaborative Social transformation Lifelong learning Activity-based Blended learning not stated other	
<i>How is learning affected (assumed)?</i>	Additional learning (eg by extending learning to informal contexts) Change in learning pattern (way to access/process information) More fun/increased motivation Connection/Collaboration Personalisation Relevance Organisation Other	
<i>How is teaching affected (assumed)?</i>	Additional teaching Change in teaching pattern More fun/increased motivation Connection/Collaboration Efficiency Subject knowledge Other	
<i>Subject (if applicable)</i>	Literacy (what language) Numeracy Math English Natural science Medical Other	
<i>Interval of learning event?</i>	Anytime Daily (4x plus / week) Weekly Monthly Other	
<i>Access (ownership):</i>	Self-owned provided for the duration of project Donation	
<i>Access (ratio)</i>	1:1 shared by household shared by teaching/learning group shared by village/community	
<i>Programme theory:</i>	See separate diagram	
<i>Identify mechanism if possible:</i>	Contextualisation Affect resource ratio Connectivity Adaptability Better retention Economic returns of tech use Peer support/role model Personalisation Organisation (Reminders) Self-direction Critical thinking Social learning	

	Inter-activity Other		
<i>Identify context/assumptions:</i>	Affordability Usability Convenience Ubiquity Ownership Teacher training Local language Perception of tech Lack of access to information Current barriers to education Not stated Other		
<i>Addresses current barriers to education:</i>	No education services provided Not enough/sufficient education materials Not enough/insufficient human resources Insufficient educational approach		
<i>How is development assumed to be affected?</i>			
Outcome codes			
<i>Which outcomes are targeted?</i>	(1) Learning outcomes (2) Teaching practice (3) EMIS (4) Empowerment		Subject:
<i>Which intermediate outcomes are targeted?</i>	(A)		
<i>What outcome indicators are used?</i>	<i>And how are they measured ?</i>	(1) test scores (A) test scores	(1) pre-defined assessments (2) pre-defined likert scale
<i>When were the outcome measured?</i>	Pre-test: Post-test:		
<i>Cost analysis?</i>			
<i>Do they describe the learning event?</i>			Note configurative
<i>Reference to development related outcomes?</i>			
Context codes			
<i>Who initiated the ML4D programme?</i>	Intrinsic (poor people) research interest government IGOs NGOs Corporate Other		
<i>Where is the intervention conducted?</i>	LICs LMIC UMICs		

	State country:	
<i>How many participants are exposed to the intervention?</i>		
<i>How many sites? Intervention sites? Experimental sites?</i>		
<i>Socio-economic?</i>	Rural Peri-urban Urban Mixed	
<i>Informal or formal context?</i>	Informal Formal Both	
<i>Age:</i>	Children (3-12) Youth (12-25) Adults (25+) Mixed	
<i>Gender:</i>	Male Female Both	
<i>Literate:</i>	Literate Semi-literate Illiterate	
<i>If applicable, type of schooling:</i>	Early childhood Primary Highschool Tertiary Special Needs Extension services Private Distance	
<i>Describe existing educational situation:</i>		
<i>Teacher/pupil ratio:</i>	< 30:1 > 30:1 > 50:1	
<i>Prevailing educational approach:</i>	Frontal/teacher-centered constructivist Other no info	
<i>Describe pattern of teacher/learner interaction?</i>		
<i>Information on teacher qualification?</i>	Low skilled Skilled Highly skilled	
<i>Information on educational materials?</i>		
<i>Describe supporting infrastructure? Consider</i>	Electricity Safety/storage Network coverage Other	
<i>Previous exposure to technology? (who/what)?</i>	Yes No	
<i>Previous perception of tech (if reported?)</i>	Positive Negative Other	
Findings		
<u>Aggregative</u>		
<i>Possible include in MA, features</i>	Means SD Size effect Confidence interval sample	

	numbers Other	
<i>What findings do they report?</i>		
<i>ML4D is effective</i>	<u>Impact on learning:</u> _____ Intermediate: Impact on attendance Impact on access Impact on motivation Other <u>Impact on teaching practice:</u> _____ Change in practice Change in behaviour Change in resources Other <u>Impact on EMIS:</u> _____ <u>Impact on Empowerment:</u> _____	These are a bit more detailed on EPPI to allow cross-tabs
<i>ML4D has no impact:</i>	<u>Failure to impact on learning :</u> <u>Failure to impact on teaching:</u> <u>Failure to impact on EMIS:</u> <u>Failure to impact on empowerment:</u>	
<i>ML4D is harmful (describe):</i>		
<i>ML4D has mixed impact:</i>	Use of same categories as above for effective/ineffective aspects	
<i>Checked for retention:</i>		
<i>Cost-benefit:</i>		
<i>Configurative</i>		
<i>Was the tech feasible? (hardware/software)</i>	Yes ('but' if applicable) No ('because')	

	Theft Breakage System crashes/content loss Interface Battery Screen size Memory capacity Need for local language Need for teacher training Need for user training Need for ownership	
<i>How has the tech been received?</i>	For Learners: Positive Negative Mixed No information For Teachers: Positive Negative Mixed No information	
<i>Is there evidence of teachers/learners appropriating the tech to their contexts?</i>		
<i>Describe the new educational situation?</i>		
<i>Has the teacher/pupil ratio been affected?</i>		
<i>Has the material/pupil ratio been affected?</i>		
<i>Has the educational approach been affected?</i>	Contextualised Game-based Inquiry / experimental Interactive learner-centered critical thinking Social transformation Collaboration Constructivist	
<i>Has the teacher/learner interaction been affected?</i>		
<i>Has the learning experience/practice been altered?</i>	Ownership/independence of learning process More motivation/fun/passion etc more efficient Deeper learning (retention/understanding of concepts) More collaborative Connected Relevance Cognitive load Ad hoc access to information Access to more information more self-paced	
<i>Has the teaching experience/practice been altered?</i>	Ownership/independence of teaching process More motivation/fun/passion etc more efficient collaboration Better instructions Better preparations Use of local content More subject knowledge Sense of professionalism Easier to handle large groups	

<i>Special interest</i>		
<i>Does tech affect groups differently?</i>	Consider age, gender, socio-economic, performance, urban, level of schooling	
<i>Reference to 'matching' enabled by mobiles?</i>		
<i>Did participants spent as much time with the devices as expected?</i>		
<i>Is the programme integrated with the national curriculum?</i>		
<i>Is there reference to multipliers/spillovers?</i>		
<i>Dependence on tech?</i>		
<i>Is there reference to how tech affects the role of teachers in the ML4D programme?</i>	Programme bypasses teachers Teachers implement programme Teachers supplement/support tech Tech supplements/supports teachers	
<i>Teachers perceive tech as unhelpful:</i>		
<i>Students encouraged to ask questions:</i>		
<i>Limitations to informal contexts:</i>		
<i>Sense of professionalism:</i>		
<i>Theme of creativity:</i>		
<i>Does excitement for tech wear off?</i>		
<i>Development</i>		
<i>Development related findings (describe)</i>		
NOTE:		

RATIONALE:		
<i>Describe the underlying case for why mobile learning was needed?</i>		

Personal reflections: