Institution: University of Dundee

Unit of Assessment: UoA 4 Psychology, Psychiatry and Neuroscience

Title of case study: Early Language in Play Settings (eLIPS): The co-production of an observational language measure for practitioner use

Period when the underpinning research was undertaken: 2000-2020

Details of staff conducting the underpinning research from the submitting unit:		
Name(s):	**Role(s) (e.g. job title):**	**Period(s) employed by submitting HEI:**
Lynne G. Duncan	Lecturer/Snr Lecturer/Reader	1999-present

Period when the claimed impact occurred: 2012-ongoing

Is this case study continued from a case study submitted in 2014? N

1. Summary of the impact

Early years educators play a key role in tackling language disorders in children born into poverty. Unless detected and acted upon, low language attainment adversely affects later development and life outcomes including academic achievement, social engagement and health. Duncan's research on early language acquisition has led to the co-production of a novel language measure (eLIPS) for use in early years education settings. eLIPS has benefitted educators and children through:
   i)   improved identification of 3-to-5-year-olds most at risk of language disorders;
   ii) enhanced understanding and awareness of language development by educators;
   iii) changed reporting practices, which have informed and improved service delivery; and
   iv) formation of a new interdisciplinary network.

2. Underpinning research

The eLIPS project builds on Duncan's body of work examining the links between spoken and written language learning during early years and primary education. A key underlying theme in this research is the influence of socio-economic status on both early language and reading attainment. eLIPS involved local educators in their contexts and settings to co-develop and co-produce an assessment to enhance professional practice in response to persisting disadvantage across generations.

Duncan's core research on language development highlighted the need for an early and comprehensive examination of language, especially in children from low socio-economic backgrounds. This foundation was instrumental in guiding the team in the design and construction of eLIPS.

Speech (expressive language): **[R1]** revealed that children from low socio-economic backgrounds had a smaller spoken vocabulary than their high socio-economic status counterparts at pre-school and that this difference was maintained in the first three years of primary schooling. Further, the difference in socio-economic status was associated with a persistent attainment gap in early literacy, including sensitivity to meaning and the sounding-out of new words.

These results highlight the importance of identifying pre-school children with poor spoken vocabulary for early intervention.

Understanding (receptive language): **[R2]** investigated comprehension skills (i.e. listening comprehension, receptive vocabulary, morphological (meaning) knowledge) in low socio-economic status contexts. In this large-scale study (n=703), Duncan's research deployed a novel

graphical modelling approach to uncover how specific components contributed to early reading attainment.

The outcome provides a detailed picture of which receptive language skills need to be monitored among children from disadvantaged backgrounds.

Social communication (pragmatics/metacognition): At the forefront of an emerging literature on how early cognitive and behavioural control mechanisms influence language and reading acquisition, a third strand of the research **[R3]** demonstrated that cognitive flexibility (i.e. the ability to select adaptively among multiple perspectives or strategies): (1) contributes to being able to process sound and meaning in speech simultaneously; and (2) predicts attainment in reading comprehension (controlling for confounding variables). Children's ability to monitor their own language use also predicted later reading attainment as well as being strongly influenced by socio-economic status, home culture and education **[R1, R4]**.

This underscores the need to include meta-cognitive processes in any measure of pre-school language development.

Innovation in addressing language inequalities through co-production of a new measure
eLIPS language measure: Pre-existing links with Fife Council led to a partnership to design an innovative new method for assessing language inequality in early years settings in Fife. An action research approach was used, involving a cyclical procedure (planning, acting, observing, reflecting). This brought University researchers and Masters students in Psychology together with early years educators, Educational Psychologists and Early Education Coordinators in Fife. This process **[R5]**, successfully integrated developmental psychology research with educational practice in the co-production of eLIPS, thereby assuring the suitability of the measure for practitioner use.

The eLIPS assessment measures speech, comprehension and social communication, allowing monitoring and more wide-ranging (formal) examination than is usually possible in early years practice. Insights from practice made this examination achievable in the child-centred playroom (where standardised assessments have, to date, been incompatible with practice). This was achieved by educator observations of children at play. Validation of eLIPS indicated excellent reliability and moderate-to-good validity relative to an established standardised diagnostic test **[R5]**. Thus, eLIPS is a rigorous measure that fills a significant gap in the early identification of children at risk of language disorders.

3. References to the research

[R1] Duncan, L.G., & Seymour, P.H.K. (2000). Socio-economic differences in foundation-level literacy. *British Journal of Psychology*, 91 (2), 145-166. DOI: 10.1348/000712600161736

[R2] Colé, P., Cavalli, E., **Duncan**, L.G., Theurel, A., Gentaz, E., Sprenger-Charolles, L., & El-Ahmadi, A. (2018). What is the influence of morphological knowledge in the early stages of reading acquisition among low SES children? A graphical modelling approach. *Frontiers in Psychology*, 9:547. DOI: 10.3389/fpsyg.2018.00547

[R3] Colé, P., **Duncan**, L.G., & Blaye, A., (2014). Cognitive flexibility predicts early reading skills. *Frontiers in Psychology*, 5:565. DOI: 10.3389/fpsyg.2014.00565

[R4] Duncan, L.G., Castro, S.L., Defior, S., Seymour, P.H.K, Baillie, S., Genard, N., Leybaert, J., Sarris, M., Porpodas, C.D., Lund, R., Sigurðsson, B., Þráinsdóttir, A.S., Sucena, A., & Serrano, F. (2013) Phonological development, native language and literacy: Variations on a theme in six European languages. *Cognition*, 127(3), 398-419.
DOI: 10.1016/j.cognition.2013.02.009

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[R5] Duncan, L.G., Gollek, C., & Potter, D.D. (2020). eLIPS: Development and validation of an observational tool for examining early language in play settings. *Frontiers in Psychology*, 11:1813. DOI: 10.3389/fpsyg.2020.01813

Indicators of quality
All outputs have been peer-reviewed. **R2** & **R3** are REF eligible outputs; **R3** has been downloaded 2,024 times (i.e. in top 10% of articles in Frontiers). **R1** is cited in policy documents and academic articles addressing literacy development and education in low income situations e.g. Marinelli et al (2013). Visual and Linguistic Factors in Literacy Acquisition: Instructional Implications for Beginning Readers in Low-income Countries. Global Partnership for Education (GPE) working paper series on learning; no. 2. World Bank, Washington, DC. © World Bank. https://openknowledge.worldbank.org/handle/10986/16244 (License: CC BY 3.0 IGO).

4. Details of the impact

The eLIPS measure **[R5]** is now used to guide practice in all 108 Fife nurseries and family nurture centres. Fife is Scotland's third largest local authority with higher than average levels of child poverty. 21% of children live in relative poverty and 17% of children live in absolute poverty, many of whom are not "ready to learn" when they start school. Child poverty places children at risk of language disorders, a situation likely to be exacerbated by COVID-19. There are evident consequences for later attainment, health and well-being, and social engagement. The significance of eLIPS lies in enabling Fife educators to identify children's language level and individual needs for early intervention, and in measuring the value added by early years education in tackling language inequalities **[E4-E7]**.

Impact on practice and policy
eLIPS observations are taken for all early years new-intake children in Fife with a follow-up before transition to primary school **[E6]**. Beginning in 2017, eLIPS has been rolled out across all Fife early years settings, reaching approximately 6,525 children per school year. This change in practice supplies evidence-based information about speech, comprehension and social communication in the form of a traffic-light system. The eLIPS measure provides Fife early years educators with a rigorous (previously absent) method of identifying children at risk of developmental language disorders **[E6-E7]**. Observing that new-intake children are in the eLIPS red (at-risk) zone is a novel and reliable trigger for educators to initiate a referral for Speech and Language Therapy support. Identifying children who are in the eLIPS amber zone signals to educators to place these children under monitoring for possible later referral.

eLIPS has also made it possible to adapt educational provision more specifically to an individual's language needs. Accordingly, Fife council has built eLIPS into Improvement Priority 3 (Healthy Growth & Development) of the Fife Children's Services Plan 2017-20 **[E1]**, which supports children in the early years to develop to their full potential consistent with children's rights under articles 3 and 24 of the United Nations Convention on the Rights of the Child.

The adoption of eLIPS has changed reporting practices by providing evidence to support alterations to service design and provision as a result of more nuanced and detailed cohort tracking. "*Measures of value-added by Fife nurseries, based on ELIPS scores for Entry and Exit assessments*" now represent key evidence on the impact and effectiveness of partnership working, which will be used to evaluate progress in improving outcomes for children [**E1**, p19].

The eLIPS measure is also extending its reach to the transitions in and out of early years settings. A target action to "*improve family engagement and support the need for early communication and language development through the roll-out of ELIPS assessment programme*" has been embedded in the Fife Local Outcome Improvement Plan 2017-2027 [**E2**, p15] to ensure that by 2027 "*more children are ready to learn when they start school, particularly children living in poverty*".

Ways of incorporating the data provided by eLIPS are being explored by the Fife education directorate, in order to improve management of the transition to primary school **[E6]**. A new Primary 1 Teacher Collaborative programme is being developed **[E3]**, which will facilitate information sharing about eLIPS to benefit (often disadvantaged) children with language disorders by ensuring continuity of support. Educational Psychology has recognised eLIPS fits with the play-based pedagogy in Fife Primary schools and is reviewing further applications of use **[E6, E7]**.

Capacity-building impacts
In 2016, Duncan delivered eLIPS training to 107 staff (Early Years Officers, teachers, Educational Psychologists, NHS Speech and Language Therapists), who then became trainers in their settings. In total, over 1000 Fife staff are trained in using eLIPS and all new Fife Nursery Teachers and Early Years Officers are routinely trained via induction or CPD courses **[E6]**.

In 2020, Fife recruited new Early Years Officers and Apprentices to support the expansion of early learning and childcare from 600-1,140 funded hours. To ensure continuity at a time of increased need, Duncan developed an online training course to minimise COVID-19 related disruption; 166 early learning and childcare staff have been trained so far using this method **[E6]**.

Impact on awareness and understanding of language development
The Steering Group formed for overseeing the project has succeeded in embedding eLIPS within a collaborative, multi-disciplinary health and education framework, creating a common focus and shared understanding around language development **[E4, E5, E7]**. For example, a cross-mapping is now possible between the language skills examined in eLIPS and those highlighted in Speech and Language Therapy (SALT)'s "Communication in Early Years Settings" guidance. Indeed, the delivery of SALT and eLIPS training is now combined for Fife early years educators.

The use of eLIPS is raising practitioners' awareness of language development in the playroom and promoting discussion around practice **[E4, E5]**. In Fife, this contributes to the Scottish Government's skills and investment plan for training a skilled and well-qualified workforce and is a key aspect of reflective practice, self-evaluation of school policy and service improvement. As noted by an Area Principal Teacher: "*ELIPS is directly benefitting our children and families across Fife through the promotion of best practice which is simultaneously up skilling our EY workforce*" **[E6]**.

Feedback gathered from the 166 Fife early learning and childcare staff who completed the eLIPS online training in November and December 2020 is summarised in Figure 1 **[E8]**, and further evidenced in qualitative responses **[E4-E7]**.

How might using eLIPS change or influence your practice?

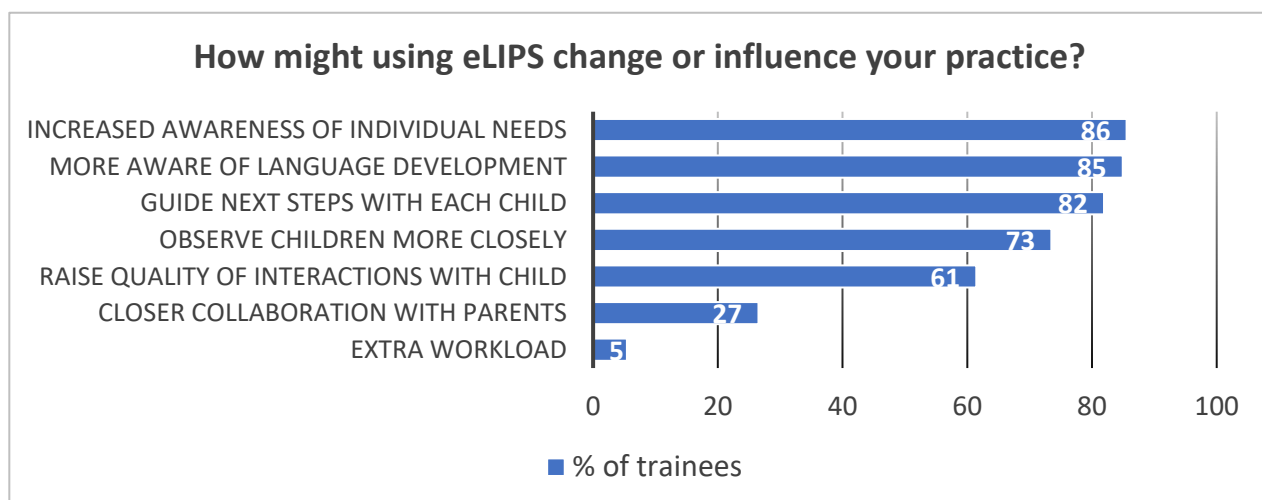|	%
INCREASED AWARENESS OF INDIVIDUAL NEEDS	86
MORE AWARE OF LANGUAGE DEVELOPMENT	85
GUIDE NEXT STEPS WITH EACH CHILD	82
OBSERVE CHILDREN MORE CLOSELY	73
RAISE QUALITY OF INTERACTIONS WITH CHILD	61
CLOSER COLLABORATION WITH PARENTS	27
EXTRA WORKLOAD	5

■ % of trainees

Figure 1: *Bar chart illustrating feedback from 166 Fife early years staff after eLIPS online training*

Sustaining and building relationships for continued impact

eLIPS has acted as a catalyst for an evaluation of the best quality early language intervention methods **[E4, E5]**. Duncan is part of a new Fife Education/NHS Speech and Language Therapy 'Next Steps' working group established in 2020 to address the individual needs of children identified via eLIPS **[E3, E6]**. The eLIPS action research ethos **[R5]** has been extended to encourage greater exchange between knowledge hubs in Scotland with funding from Scottish Universities Insight Institute **[E9]** and led to Duncan co-founding the interdisciplinary network 'LALco' (Language and Literacy: communication, collaboration and co-production) in 2019, which now has 165 cross-sector members and an advisory group involving Fife Education, Scottish Book Trust and Education Scotland, thus ensuring ongoing and sustainable impact.

5. Sources to corroborate the impact

[E1] Fife's Community Planning Partnership. *Fife Children's Services Plan 2017-20*. Available at: http://publications.fifedirect.org.uk/c64_D.1.AreaLeadershipMeeting-ChildrensServicesPlan2017.pdf [Accessed 2 March 2021]

[E2] Fife Council (2018). *Plan 4 Fife: Fife Local Outcome Improvement Plan 2017-2027*. Available at: http://publications.fifedirect.org.uk/c64_LocalOutcomeImprovementPlan-PlanforFife2017-2027.pdf [Accessed 2 March 2021]

[E3] Fife Council (2020). *Opportunities for all. Thematic Report: discussion document*. Available at: https://www.fife.gov.uk/__data/assets/word_doc/0015/122730/Opportunities-For-All-Theme-Report.docx [Accessed 2 March 2021]

[E4] Fife Headteacher testimonial

[E5] Fife Principal Teacher testimonial

[E6] Fife Area Principal Teacher testimonial

[E7] Fife Educational Psychology Service testimonial

[E8] eLIPS Online Training 2020 – unpublished feedback report

[E9] Duncan, L.G., & McGeown, S.P. (2019). *Conversations about language and literacy: Promoting equity and attainment through engagement*. Final Report. Scottish Universities Insight Institute: Glasgow, UK. Available at: https://www.scottishinsight.ac.uk/Portals/80/ReportsandEvaluation/Programme%20reports/Language%20and%20literacy_Final%20report%20web.pdf [Accessed 11 March 2021]