Mobile learning in early childhood education: A school-university partnership model

Serena Davie
### Appendix A Matrix for Selecting mLearning Tools

<table>
<thead>
<tr>
<th>Tool</th>
<th>Bee Bot</th>
<th>iPad</th>
<th>Digital Microscope</th>
<th>Recording Pegs</th>
<th>Talking Butterflies</th>
<th>Chatter block</th>
<th>Metal Detectors</th>
<th>Story Sequencer</th>
</tr>
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<tbody>
<tr>
<td><strong>Ease of Use</strong></td>
<td>Score 1-5</td>
<td>Score 1-5</td>
<td>Score 1-5</td>
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<td>Score 1-5</td>
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<tr>
<td>Value for money</td>
<td>1 2 3 4 5</td>
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<tr>
<td>Appeal to ECE students (Motivation)</td>
<td>1 2 3 4 5</td>
<td>1 2 3 4 5</td>
<td>1 2 3 4 5</td>
<td>1 2 3 4 5</td>
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<tr>
<td>Developmentally appropriate</td>
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<td>1 2 3 4 5</td>
<td>1 2 3 4 5</td>
<td>1 2 3 4 5</td>
<td>1 2 3 4 5</td>
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<tr>
<td>Can be used to enhance teaching and learning (Curriculum connection)</td>
<td>1 2 3 4 5</td>
<td>1 2 3 4 5</td>
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<td>1 2 3 4 5</td>
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<tr>
<td>Differentiation (can meet needs of differing students)</td>
<td>1 2 3 4 5</td>
<td>1 2 3 4 5</td>
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<td>Students are actively engaged</td>
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<td>1 2 3 4 5</td>
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<tr>
<td>Students can work collaboratively</td>
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<td>1 2 3 4 5</td>
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<tr>
<td>Tool is used to build understanding</td>
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<tr>
<td>Tool used in a meaningful way</td>
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<td>1 2 3 4 5</td>
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<td><strong>Awards</strong></td>
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<td><strong>Reviews</strong></td>
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<tr>
<td><strong>Overall rating</strong></td>
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Appendix B Pre-Service Teacher Survey 1

1. Which Early Childhood Education (ECE) ICT tutorial are you attending?
   - Summer School
   - Wednesday
   - Thursday morning
   - Thursday afternoon

2. What type of high school did you attend?
   - Government
   - Catholic
   - Independent

3. Which age group do you fall into?
   - 17-25
   - 26-40
   - 41-50
   - 50+

4. Rate your level of technological knowledge as: Strongly Disagree, Disagree, Neither Agree or Disagree, Agree or Strongly Agree
   - I know how to solve my own technical problems
   - I can learn technology easily
   - I keep up with new technologies
   - I frequently play about with technology
   - I know a lot of different technologies
   - I have the technical skills I need to use technology

5. Rate the following statements about teaching using mLearning-rich lessons to early childhood students: Strongly Disagree, Disagree, Neither Agree or Disagree, Agree or Strongly Agree
   - I know how to organize and maintain classroom management
   - I can adapt my teaching style to different learners
   - I am nervous about being observed by the classroom teacher
   - I am worried about the technology not working properly
   - I lack pedagogical knowledge
   - I lack technological knowledge
- I lack content knowledge
- I know about mLearning technologies that I can use for understanding and teaching several learning areas
- I can use mLearning technologies that enhance the content of a lesson
- I critically think about how to use mLearning in the classroom

6. What are your beliefs regarding the use of mobile technologies in the early childhood classroom?
   Other (please specify)

7. What do you use technology for?
   - Social networking
   - Study
   - Assignments
   - Word processing
   - PowerPoint
   - Gaming
   - Research on the Internet
   - Journal access
   - Listening to music
   - I use technology as a teaching tool and integrate it into lessons that I plan

8. What are the benefits and disadvantages associated with presenting lessons for this ICT unit to children?

9. Please rate the following statements about your views and intentions regarding integrating and using mLearning in ECE using: Strongly Disagree, Disagree, Neither Agree or Disagree, Agree or Strongly Agree
   - mLearning in ECE degrades the role of the teacher
   - The use of mLearning by children does more harm than good
   - mLearning is only useful for playing games
   - The role of the teacher is not affected by integration of mLearning in ECE
   - I would not like to use mLearning with children unless it is imposed from 'above'
   - The use of mLearning motivates children
   - The use of mLearning is complementary (and not essential) to the whole educational process
   - The role of the teacher in ECE is that of the facilitator and coordinator
   - The use of mLearning promotes passive learning
• To the fullest extent possible, I intend to use mLearning with the children
• Using mLearning in ECE may lead to new pedagogical methods and approaches
• I would not like to use mLearning because learning becomes mechanical
• The use of mLearning promotes children's active participation in the learning process
• The use of mLearning by children promotes their social isolation
• I am sceptical about using mLearning in my teaching
• mLearning restricts children's imagination and creativity
• I am not interested in integrating mLearning with children; there are other priorities for ECE
• The use of mLearning is only useful for processes that cannot be accomplished otherwise
• mLearning is a useful tool to support and enhance children's learning
• I intend to use mLearning, sometimes, because it familiarizes children with technology
• mLearning integration in ECE restricts the role of the teacher
• The integration and use of mLearning in ECE is necessary
Appendix C Pre-Service Teacher Survey 2

1. Which ICT tutorial group were you in prior to the practicum?

2. What year level do you have for your current practicum?
   K
   PP
   Year 1
   Year 2
   Year 3

3. What mobile learning (mLearning) tools are available for you to use in your school?
   Please explain what is available in practicum school, what you have used on this practicum and what your mentor has used this term.
   - iPod touch
   - iPads/tablets
   - Bee Bots
   - IWB
   - Other - please explain

4. How often is mLearning used in your classroom?
   - Not at all
   - Less than once a week
   - 2-4 times a week
   - Daily

5. How do children use mLearning devices in your class?
   - They do not use them
   - Mainly In a teacher centred way
   - Mainly in a student-centred way

6. Have you experienced any of the following barriers to using mLearning on practicum? (tick all those which apply to you)
   - Lack of resources
   - Lack of technological support
   - The parents do not want technology
   - I do not see any value added by mLearning
   - The classroom philosophy prohibits the use of technology
   - Lack of technological knowledge
7. What are your beliefs regarding mLearning in early childhood education?

8. Have your beliefs regarding the use of mLearning in early childhood education changed because of the Transforming Learning Through ICT unit that you completed prior to this practicum?

9. Has the amount of time that you spend exploring mLearning tools changed since you completed the ICT unit this semester?
   - It has increased
   - It has decreased
   - It has not changed

10. What have you used mLearning for?
    - As an investigation tool
    - As a creation tool
    - To communicate and share ideas
    - To develop strategies for problem-solving

11. In which type of school are you completing your practicum?
    - Catholic
    - Independent
    - Government
Appendix D Pre-Service Teacher Survey 3

1. I give my consent to take part in this early childhood mLearning research project. I understand that I can withdraw my consent at any point. I understand that my name will not be used and my identity will be protected.

Yes, I agree to take part
No, I do not wish to take part

2. Did you complete an authentic learning experience in semester 1 this year, at either School A or School B?

Yes
No

3. What have you used mLearning for this year?

4. Rate your level of technological knowledge as: Strongly Disagree, Disagree, Neither Agree or Disagree, Agree or Strongly Agree

- I know how to solve my own technical problems
- I can learn technology easily
- I keep up with new technologies
- I frequently play about with technology
- I know a lot of different technologies
- I have the technical skills I need to use technology

5. Rate the following statements about teaching using mLearning-rich lessons to early childhood students: Strongly Disagree, Disagree, Neither Agree or Disagree, Agree or Strongly Agree

- I know how to organize and maintain classroom management
- I can adapt my teaching style to different learners
- I am nervous about being observed by the classroom teacher
- I am worried about the technology not working properly
- I lack pedagogical knowledge
- I lack technological knowledge
- I lack content knowledge
- I know about mLearning technologies that I can use for understanding and teaching several learning areas
- I can use mLearning technologies that enhance the content of a lesson
- I critically think about how to use mLearning in the classroom

6. What are your beliefs regarding the use of mobile technologies in the early childhood classroom?
7. What are the benefits and disadvantages associated with presenting lessons for this unit to children in local schools as opposed to presenting lessons to peers at University?

8. Please rate the following statements about your views and intentions regarding integrating and using mLearning in ECE using: Strongly Disagree, Disagree, Neither Agree or Disagree, Agree or Strongly Agree

- mLearning in ECE degrades the role of the teacher
- The use of mLearning by children does more harm than good
- mLearning is only useful for playing games
- The role of the teacher is not affected by integration of mLearning in ECE
- I would not like to use mLearning with children unless it is imposed from 'above'
- The use of mLearning motivates children
- The use of mLearning is complementary (and not essential) to the whole educational process
- The role of the teacher in ECE is that of the facilitator and coordinator
- The use of mLearning promotes passive learning
- To the fullest extent possible, I intend to use mLearning with the children
- Using mLearning in ECE may lead to new pedagogical methods and approaches
- I would not like to use mLearning because learning becomes mechanical
- The use of mLearning promotes children's active participation in the learning process
- The use of mLearning by children promotes their social isolation
- I am sceptical about using mLearning in my teaching
- mLearning restricts children's imagination and creativity
- I am not interested in integrating mLearning with children; there are other priorities for ECE
- The use of mLearning is only useful for processes that cannot be accomplished otherwise
- mLearning is a useful tool to support and enhance children's learning
- I intend to use mLearning, sometimes, because it familiarizes children with technology
- mLearning integration in ECE restricts the role of the teacher
- The integration and use of mLearning in ECE is necessary
18 Appendix E Parent and Carer Survey

1. The purpose of this survey is to gather, from parents and guardians of young children, information about their beliefs regarding the use of mobile learning in early childhood education. By completing this survey, I give my consent to take part in a mobile learning in early childhood education study.

2. Do you have the internet at home?

3. What mobile learning devices do you have at home?
   - None
   - Smartphone
   - iPod
   - iPad
   - Android tablet
   - Other

4. How frequently do your children use mobile learning devices?
   - Never
   - Every day
   - 1-3 times / week
   - 4-6 times /week
   - Less than once /week

5. What do your children use mobile learning tools for?
   - Playing games
   - Reading digital stories
   - Listening to music
   - Taking photos or videos
   - Social media
   - Talking/Skype
   - Texting
   - Drawing/creative activities
   - Research/Investigation

6. How do you supervise and regulate your children when they are using mobile learning tools?
7. Do you have any concerns about what your child might be doing when they are using mobile learning?
8. What are your beliefs regarding the use of mobile learning in early childhood education?

9. Why do you think mobile learning is not more widely used in early childhood education? Please use the following ratings: Strongly Disagree, Disagree, Neither Agree or Disagree, Agree or Strongly Agree

- Lack of resources
- Lack of technological support
- No need for it
- The classroom philosophy prohibits the use of technology
- Lack of teacher professional development
- The parents do not want it
- Other (please specify)

10. Rate your level of technological knowledge. Please use the following ratings: Strongly Disagree, Disagree, Neither Agree or Disagree, Agree or Strongly Agree

- I know how to solve my own technical problems
- I can learn technology easily
- I keep up with new technologies
- I frequently play about with technology
- I know a lot of different technologies
- I have the technical skills I need to use technology

11. Please state whether you agree or disagree with the following statements. Please use the following ratings: Strongly Disagree, Disagree, Neither Agree or Disagree, Agree or Strongly Agree

- mLearning in early childhood education develops children's basic skills and computer literacy
- mLearning in early childhood education develops children's thinking and problem-solving
- mLearning in early childhood education develops children's skills for other activities
- mLearning in early childhood education develops children's social skills for collaboration and working with others
- mLearning in early childhood education encourages children to reflect on their learning
- mLearning in early childhood education encourages children to become critical learners

12. What value do you see in this school-university partnership? Please use the following ratings: Strongly Disagree, Disagree, Neither Agree or Disagree, Agree or Strongly Agree

- It is beneficial to the student teachers
- It is beneficial to the children
- It is beneficial to the teachers
- It is beneficial to the parents
- It is beneficial to the school
Appendix F Focus group questions (pre-service teachers)

1. What mLearning resources did you like?
2. What mLearning resources did you not like?
3. What would you change next time?
4. What did you like about participating in this project this year?
5. What impact do you think working with early childhood teachers and their students has had on your learning?
6. To what extent do you feel more equipped to integrate mLearning into your future lessons?
7. Did your relationship with the classroom teacher change throughout this process?
8. What did you learn from the experience?
9. How did you think this experience will assist you for mLearning integration in the future?
10. How did you feel about the practising teacher visiting your tutorials at University?
11. What are the benefits and disadvantages associated with presenting lessons for this ICT unit to early childhood students as opposed to presenting the lessons to peers at University?
12. What are your beliefs regarding the use of mLearning in early childhood education?
13. How do you intend to integrate mLearning into your teaching?
14. How would you describe your level of technological knowledge on a scale of 1-5?
15. What did you find difficult about planning and delivering the mLearning rich lessons for this ICT unit? Was it more or less stressful? Was it easier or more difficult?
16. What type of pedagogical input did the practicing teacher contribute to your learning?
17. Were you able to offer any technological knowledge to your practicing teacher?
18. Do you think the class dynamics changed when the technology was introduced?
19. Has there been any change in the amount of time you spend using mLearning tools this year?
Appendix G: Field Observations

Adapted from Judson’s (2002) instrument

Name of pre-service teacher: _______________________ School ____________________________

Date ____________________ Number of Students ______

Year level: _______________________________ Location: __________________

Number and type of mLearning tools _____________

**Description** of the technology incorporated into the lesson including hardware and software specifications, student to media ratio, locus of control in terms of technology

Learning Area------------------------------- Lesson Objectives---------------------------------------------------------------

Amount of use (i.e. proportion of the lesson) _______________________

Kinds of use (e.g. instructional game, drill and practice, presentation, exploration, creative work, productivity tool etc)

Context for use (e.g. independently for students, in the context of the learning situation, as a reward etc)

Sketch of physical layout of classroom (i.e. placement of technology, teacher and students; indicate mobility)

*To what extent was the following present? Please score the items on the following page from 0 to 3. 3= to a great extent, 0 = no evidence.

## Design of mLearning integration

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<tbody>
<tr>
<td>1</td>
<td>The design of the mLearning integration allowed children to learn in ways not otherwise possible.</td>
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mLearning was a means for supporting curricular objectives, as opposed to being a separate curricular focus.  

This lesson embedded basic student operation of mLearning.

### Classroom dynamics

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<tr>
<td>4</td>
<td>The children were engaged.</td>
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<tr>
<td>5</td>
<td>Interaction with mLearning provided children with a sense of independent control and mastery over an environment (student centred).</td>
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<tr>
<td>6</td>
<td>The pre-service teacher provided appropriate assistance to guide child activity.</td>
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### Meaning and purpose

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<tr>
<td>7</td>
<td>Students took pride in new learning and/or work produced with the aid of mLearning.</td>
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<tr>
<td>8</td>
<td>mLearning was used to investigate real phenomena and real world situations.</td>
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<tr>
<td>9</td>
<td>Integration of mLearning enhanced meaning and purpose of the lesson</td>
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### Content and knowledge

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<tbody>
<tr>
<td>10</td>
<td>The integration of mLearning into the lesson promoted strong, coherent conceptual understanding.</td>
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<tr>
<td>11</td>
<td>The pre-service teacher had a solid grasp of the subject matter content and the use of mLearning.</td>
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<tr>
<td>12</td>
<td>Children used mLearning to aid the construction of meaningful knowledge.</td>
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### Use of mLearning tools

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<tbody>
<tr>
<td>13</td>
<td>As an investigation tool.</td>
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<tr>
<td>14</td>
<td>As a creation tool.</td>
</tr>
<tr>
<td>15</td>
<td>To communicate and share ideas.</td>
</tr>
<tr>
<td>16</td>
<td>To develop strategies for problem solving.</td>
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Mobile Learning in Early Childhood

CHIEF INVESTIGATORS: Jean MacNish & Frank Bate

Dear Participant,

You are invited to participate in the research project described below.

The use of mobile learning has been shown to have a positive impact on student learning particularly in the early years of education. However, research also suggests a slow uptake of these technologies in the classroom. This longitudinal study is designed to examine the appropriateness and effectiveness of mobile learning in early childhood settings. The study will involve working with pre-service and practicing teachers in a collaborative way with the overall aim of developing collective knowledge on mobile learning in this important educational context. The study will run over a three-year period.

This project is being conducted by Dr Frank Bate, Dr Jean MacNish and Serena Davie and will form the basis for the degree of Doctor of Philosophy at The University of Notre Dame Australia, under the supervision of Dr Jean MacNish.

To help generate knowledge, interviews, surveys, focus groups and classroom observation will be the primary methods of data collection. It is estimated interviews and focus
groups will typically take 30 minutes. Observations will be conducted in the classroom and will be non participatory. Interviews will be audio recorded. The data will be collected in the partnership schools and at the University of Notre Dame.

At all times the identity of participants will be confidential and protected through the use of a unique code. All data will be stored in a secure environment in the School of Education at The University of Notre Dame and kept for a period of five years. This confidence will only be broken in instances of legal requirements such as court subpoenas, freedom of information requests, or mandated reporting by some professionals.

The project has received clearance through the University of Notre Dame Human Research Ethics Committee (HREC). The protocol adopted by the University of Notre Dame HREC for the protection of privacy will be adhered to and relevant sections of the Privacy Act are available at http://www.nhmrc.gov.au

This is a low level intervention and risks to participants are minimal. Two possible risks are (a) teachers' lack of inclination to participate in the research and (b) damage to mobile learning technologies by young children. Every effort will be made to encourage participation by schools. This includes visiting the schools to make contact with senior staff, mentoring teachers and attending staff/professional development sessions on request. Hard wearing ICT will be purchased that is purpose-built for an early childhood audience.

The benefits of this research are for example, practicing teachers will have the opportunity to develop their knowledge and skills in harnessing mobile technologies in a long-term, supportive environment; academics and pre-service teachers at the University of Notre Dame will have access to authentic classrooms that will help to underpin their knowledge of mobile learning in real world educational environments; parents will be afforded opportunities to
access expertise on contemporary mobile learning tools and applications; and children will benefit by engaging in technology-rich learning.

Participation in this study is completely voluntary. You are not under any obligation to participate. If you agree to participate, you can withdraw from the study at any time and withdraw unprocessed data previously supplied.

An Executive Summary will be provided to stakeholders, i.e. the Schools involved in the project, the Department of Education and the School of Education Notre Dame.

If you would like to discuss any aspect of this study with a member of the research team, please contact Dr Jean MacNish. Jean.macnish@nd.edu.au

The study has been approved by the Human Research Ethics Committee at The University of Notre Dame Australia. If participants have any complaint regarding the manner in which a research project is conducted, it should be directed to the Executive Officer of the Human Research Ethics Committee, Research Office, The University of Notre Dame Australia, PO Box 1225 Fremantle WA 6959, phone (08) 9433 0943, research@nd.edu.au

Any complaint or concern will be treated in confidence and fully investigated. You will be informed of the outcome.

Please sign the attached consent form if you would like to participate in this study.

Yours sincerely,
Serena Davie
School of Education
University of Notre Dame
Ph: 94330156
serena.davie@nd.edu.au
Appendix I Interview 1: ICT Lecturer

1: Can you tell me about your teaching experience?

2: Do you think it is important to use ICT in teaching and learning and if so what is the overall purpose?

3: Do you think early childhood is the right context for mobile learning?

4: How have you modified the course for the groups presenting in local primary schools as opposed to those presenting to peers?

5: Do you think those presenting in the authentic environment will have missed out on any important content in your ICT course because of the preparation for the authentic task?

6: Do you think there will be any difference in the standard of presentations between the two groups?

7: Do you think any groups will be more or less prepared for the task of mLearning integration in their future teaching?

8: What do you see as the advantages and disadvantages of this research project?

9: What do you see as the benefits and disadvantages of having school teachers and principals in your tutorials at the University?
Appendix J Interview 2: ICT Lecturer

1: What worked?

2: How much initial scaffolding did they need?

3: Do you think those presenting the authentic environment missed anything?

4: Was there a difference in the standard of the presentations between the control and authentic groups?

5: What do you predict the experience might affect the students on future practicum?

6: Do you think your teaching in other units has changed as a result of this project?

7: What were your impressions of the authentic visits? Did they go as you expected?

8: What did not work?

9: Is there anything else you think we should change regarding the school visits in the future?

10: Do you think your level of technological knowledge has changed as a result of this project?

11: What do you see as the advantages and disadvantages to; pre-service teachers, practicing teachers, children and yourself of this project?

12: What impact, if any did the experience have on your future planning and teaching
Appendix K Interview 1: Early Childhood Teachers

1. What types of technology do you personally use at home and at school?
2. How many years have you been teaching?
3. How long have you been teaching early childhood?
4. Do you work full time?
5. Do you have an assistant in your class?
6. When did you receive your teaching qualification?
7. What year are you currently teaching and how many children do you have in your class?
8. How many computers, mobile learning devices do you have in your classroom or access to in your school? Which do you use and how frequently? How up to date are these devices?
9. Do you have internet access in your classroom? (wireless or broadband)
10. What do you mostly use mLearning for in your classroom
11. How often do you use mLearning as a teaching tool in your classroom?
12. Have the children in your class used mLearning in the last two weeks and if so what have they used it for?
13. How do the children in your class respond to the use of mLearning? Do they have a favourite activity?
14. Would you like to use more mLearning in your teaching?
15. What stops you using more mLearning? (cost, time, technology, knowledge, support, teaching philosophy, lack of interest)
16. How would you rate your mLearning skills 1-5?
17. How would you rate your confidence using mLearning 1-5?
18. Do you learn new technologies easily?
19. Can you solve your own technological problems?
20. Do you have the technical skills required to use mLearning?
21. Do you keep up with new mLearning? (new apps and educational software)
22. How well can you integrate mLearning into the curriculum?
23. Do you actively incorporate mLearning into your teaching?
24. Do you ever help colleagues with mLearning?
25. What are your beliefs regarding mLearning in ECE education?
26. Choose from the following statements the one that describes you best:
27. I see opportunities for integrating mLearning into my teaching
28. I have favourable attitudes towards using mLearning in my teaching
29. I make conscious decisions to adopt mLearning in my teaching
30. I actively incorporate mLearning into my teaching
31. I continuously evaluate the results of integrating mLearning into my teaching and make appropriate improvements
32. What do you see as the benefits and disadvantages of pre-service teachers visiting your class to present mLearning rich lessons?
33. Current research states that mLearning is not widely used in early childhood education. Do you agree with this statement and if so what do you think the reasons might be?
34. Do you see yourself using more or less mLearning technologies in your classroom in the future?
35. How much professional development have you had in the last three years on mLearning?
36. How effective was this professional development in helping you to integrate mLearning into the curriculum?
Appendix L Interview 2: Early Childhood Teachers

1. What are your beliefs about mLearning in the early childhood classroom? Have these beliefs changed since you became involved in this project?
2. What do you mostly use mLearning for?
3. How often do you use mLearning as a teaching tool in your classroom?
4. How do the children in your class respond to the use of mLearning? Do the dynamics change?
5. Would you like to use more mLearning in your teaching?
6. What stops you using more mLearning?
7. How would you rate your mLearning skills (on a scale of 1 – 5)?
8. To what extent have your skills in using mLearning changed since you became involved in this research?
9. Has your confidence in using mLearning grown, diminished or stayed the same? What factors affect your confidence?
10. Have you discerned any changes in the dispositions of others at your school towards integrating mLearning into the curriculum? If so what sort of changes have you seen?
11. Do you think using mLearning has led to any improvements in the classroom? (e.g. motivation, classroom management, learning)
12. How have your class responded to the use of the mLearning in your classroom?
13. Did some children engage better than others?
14. Which children benefited the most from this project?
15. What you see as the benefits and disadvantages of pre-service teachers visiting your class to teach mLearning rich lessons? How could these visits be improved?
16. Do you see yourself using more or less mLearning in your classroom in the future?
17. What worked?
18. What did not work?
19. What would you change next time?
20. What did you like about participating in this project this year?
Appendix M Interview Questions School Leaders

1. What types of technology do you personally use at home and at school?
2. What do you mostly use mLearning for?
3. How would you rate your mLearning skills?
4. Do you learn new technologies easily?
5. Can you solve your own technological problems?
6. Do you have the technical skills required to use mLearning?
7. Do you have the technical skills necessary to assist your staff?
8. What mLearning tools do you have in the early childhood classrooms in your school? How old are they? (1–2, 3-5, 6-10 years old) Where did they come from? (donated, school budget, P & C)
9. How are mLearning technologies currently used in the early childhood classrooms in your school? What do the teachers and children use them for and how frequently?
10. How do the early childhood children in your school respond to the use of mobile technologies? What do they particularly like or dislike?
11. How would you rate the level of mLearning currently used in the early childhood classes in your school? Choose from the following statements:
   - Not a high priority
   - Teachers are willing but struggle to adopt
   - Steady progress and increasing use
   - Routine use on a daily basis
12. Would you like to see more mLearning in your early childhood classrooms?
13. Current research states that mLearning is not widely used in early childhood education. Do you agree with this statement and if so what do you think the reasons might be?
14. How proficient is your ECE staff with the use of mLearning?
15. What stops your teachers using more mLearning technologies?
16. What could improve the use of ICT/ mLearning devices in early childhood classrooms in your school?
17. What mLearning strategies/policies do you have in the school?
18. Do you have wireless/broadband connectivity in ECE classrooms?
19. What type of mLearning support does your school have?
20. What mLearning changes/goals you foresee in the next five years in your school?
21. How important do you see mLearning for teaching and learning in early childhood education?
22. Do you have an ICT coordinator in the school?
23. Do you see mLearning in ECE as a priority and if so what strategies have you adopted to maximise its effectiveness in the classroom?
24. What benefits do you see for your school in having a partnership with a University?
25. Choose from the following statements the one that describes you best:
   - I see opportunities for integrating mLearning into ECE classrooms in my school
   - I have favourable attitudes towards using mLearning in ECE classrooms in my school

Appendix L
32. I make conscious decisions to adopt mLearning in ECE classrooms in my school
33. I actively integrate mLearning into ECE classrooms in my school
34. I continuously evaluate the results of integrating mLearning into ECE classrooms in my school and make appropriate improvements
35. How much professional development have your ECE teachers had in mLearning in the last 3 years?
36. What do you perceive your role to be in the integration of mLearning in ECE?
37. What mLearning/ICT resources does the school now have?
38. How are these resources managed? Technical support?
39. Funding of resources??
40. What are the ICT plans/goals for the future?
41. How proficient is your ECE staff with the use of mLearning? Developmentally appropriate use/for the 4Cs?? To create rather than consume. SMAR? Substitution, modification, augmentation, redefinition
42. What PD have staff/you undertaken this year? How do you plan to build staff capacity?
43. Which teachers if any are the drivers of ICT integration? How do you capitalize on this? Shared leadership?
44. How is network going/Wi-fi?
45. Would you like to see more mLearning in your early childhood classrooms?
46. What stops your teachers using more mLearning technologies?
47. What could improve the use of ICT/ mLearning devices in early childhood classrooms in your school?
48. What mLearning strategies/policies do you have in the school?
49. How important do you see mLearning for teaching and learning in early childhood education?
50. Do you see mLearning in ECE as a priority and if so what strategies have you adopted to maximise its effectiveness in the classroom?
51. What do you think of the partnership with the University?
52. What would you change about mLearning partnership?
53. What benefits do you see for your school in having a partnership with a University?
54. What do you perceive your role to be in the integration of mLearning in ECE?
55. What role do you think parents lay in mLearning integration?
56. How do you think parents at this school view technology? ECE parents??
57. Parent workshop did not happen this year. Do you think this is not a good idea, timing wrong? How are parents informed/upskilled…newsletter???
Appendix N Dean Interview

1. How many school-university partnerships is the SOE currently involved in?
2. What do you see as the purpose of school-university partnerships?
3. What are your beliefs regarding the use of mLearning in early childhood education?
4. What are the difficulties associated with school-university partnerships?
5. Who benefits from the partnerships?
6. What is your role in these partnerships?
7. Do you think shared leadership plays a role in effective partnerships?
8. What are the costs and benefits to both pre-service teachers and staff of the mLearning ECE partnership?
9. What are your beliefs regarding mLearning in teacher education?
10. What do you think you can do (if anything) to optimise the effectiveness of the partnerships?
Appendix O Informed Consent Form

Mobile Learning in Early Childhood Education to promote School-University Partnerships

I, (participant’s name) _________________________________ hereby agree to being a participant in the above research project.

I have read and understood the Information Sheet about this project and any questions have been answered to my satisfaction.

I understand that I may withdraw from participating in the project at any time without prejudice.

I understand that all information gathered by the researcher will be treated as strictly confidential, except in instances of legal requirements such as court subpoenas, freedom of information requests, or mandated reporting by some professionals.

Whilst the research involves small sample sizes I understand that a code will be ascribed to all participants to ensure that the risk of identification is minimised.
I understand that the protocol adopted by the University of Notre Dame Australia Human Research Ethics Committee for the protection of privacy will be adhered to and relevant sections of the *Privacy Act* are available at [http://www.nhmrc.gov.au/](http://www.nhmrc.gov.au/)

I agree that any research data gathered for the study may be published provided my name or other identifying information is not disclosed.

I understand that I will be audio taped.

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<td>Serena Davie</td>
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If participants have any complaint regarding the manner in which a research project is conducted, it should be directed to the Executive Officer of the Human Research Ethics Committee, Research Office, The University of Notre Dame Australia, PO Box 1225 Fremantle WA 6959, phone (08) 9433 0943, email research@nd.edu.au
11 August 2011

Dr Frank Bate
School of Education
The University of Notre Dame Australia
Fremantle Campus

Ref: #011063F

Dear Frank,

I am writing to you in regards to your Low Risk Application for Ethics Clearance for your proposed research project to be undertaken as a staff member at the University of Notre Dame Australia. The title of the project is “Using mobile learning technologies to promote school-university partnerships in early childhood education.”

Your proposal has been reviewed by the University’s Human Research Ethics Committee, and based on the information provided the project has been assessed as meeting all the requirements as mentioned in the National Statement on Ethical Conduct in Human Research (2007). I am therefore pleased to advise that ethical clearance has been granted for this proposed study.

Please note the following conditions of approval which apply to your research project:

- Ethics approval for this project is valid for 3 years. Under the National Statement you are required to report on the project’s progress on an annual basis and the first annual report is therefore due in August 2012. Once your project is completed you are required to complete the Annual Report as a Final Report on your project. You are also required to notify the HREC Executive Officer in writing if this project is abandoned. The Annual Report form can be found at: http://www.nd.edu.au/research/hrec/apply.shtml.

- As a researcher you are required to immediately report to the HREC Executive Officer anything which might warrant review of ethical approval of the project, including unforeseen events that might affect continued ethical acceptability and any complaints made by participants regarding the conduct of the project.

- If the design of the study, the choice of instrument, or its manner of administration is altered in any significant way as the study progresses, you are required to submit an amendment in regards to the changes for ethical consideration to the HREC. The Amendment Form can be found at: http://www.nd.edu.au/research/hrec/apply.shtml.

On behalf of the Human Research Ethics Committee, I wish you well with what promises to be a most interesting and valuable study.

Yours sincerely,

Dr Natalie Giles
Executive Officer, Human research Ethics Committee
Research Office

cc. Dr Jean MacKeh, School of Education;
Professor Michael O’Neill, Dean, School of Education;
Professor Richard Berlach, Chair, SRC.
Appendix Q Focus group questions (parents and carers)

1. What mLearning resources did you like?
2. What mLearning resources did you not like?
3. What support (if any) do you give to your children to help them use mLearning?
4. What did you like about participating in this project this year?
5. What impact do you think mLearning partnership has had on your child’s learning?
6. What value do you see in school-university partnerships?
7. What did you learn from the mLearning workshop?
8. What are your beliefs regarding the use of mLearning in early childhood education?
9. How would you describe your level of technological knowledge on a scale of 1-5?
10. Do you think mLearning has a place in the early childhood classroom?
11. How much time you spend using mLearning tools?
12. Do you feel better informed about the place of mLearning in the classroom as a result of this mLearning partnership?