CONTINUING THE CONVERSATION

Improving Conversational Fluency and Cultural Literacy with iPads

http://www.mmlc.northwestern.edu/ipads/

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CALICO 2013

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The iPad Project

- The German class

The Study

- Literature Review
- Research Questions
- Participants
- Data Collection
- Results
- Discussion
- Limitations
- Conclusions
The iPad Project

- **Goal**
  - Investigate, gain experience in use, integration of *iPad*
  - Explore students’ reactions to new technology

- **WCAS Hewlett Fund for Curricular Innovation**
  - Funds to purchase iPads
  - Logistics and teaching support through MMLC

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# Two-Year Project

<table>
<thead>
<tr>
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<th>Class 1</th>
<th>Class 2</th>
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CALICO 2013
# Two-Year Project

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<tr>
<th>Semester</th>
<th>Language</th>
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<tr>
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<td>Spring 2011/2012</td>
<td>Italian (6)</td>
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<td>Hindi</td>
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<td>Spring 2012/2013</td>
<td>Spanish</td>
<td>For Professions: Business</td>
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<td>Summer 2013</td>
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<td>Final Evaluation of Project</td>
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Goals of the study

- Investigate the oral language development in advanced learners of German in a nine-week conversation class:
  - rather short instructional period with limited practice and speaking time
  - lack of exposure to authentic speech samples

- Question:

  Can a well-designed instructional setting that allows for additional conversational practice in and outside of class through the use of iPad technology positively impact the amount and quality of language students are able to produce at the end of a nine-week class?
Advanced-level proficiency

- It may be difficult for students to attain advanced-level language proficiency in 4 years of college (Collentine & Freed, 2004)
  - Lack of class time in four-year curriculum (Rifkin, 2003)
  - Classroom practices that do not encourage extended discourse (Mantero, 2002; Donato & Brooks, 2004)

- Colleges provide study abroad opportunities. But Byrnes (2007) argues it may not be the stay in the foreign country but the quality and breadth of learning opportunities that help attain advanced level language skills

  “... a richer palette of acquisition-attuned textual varieties and tasks, along with scaffolded learning environments” (p.3)
Interaction, input, language learning

- L2 acquisition is fostered by conversational interaction
  - Learners negotiate for meaning to make input more comprehensible (Hatch 1978; Long 1981, 1996)
  - Amount and quality of comprehensible input determines the rate of learning (Krashen, 1981)

- Mackey (2007) lists more than 40 studies investigating the role of interaction

- A meta-analysis of 28 recent empirical studies on conversational interaction concludes:
  - Learners benefit more when interactional activities target lexical items
  - No apparent differences in learning outcomes with regard to feedback during interaction (Mackey & Jaemyung, 2007)
Interaction & Instructed Language Learning

• Four key requirements for interaction (Johnson, 1995)
  • Create context to attend to language
  • Create opportunities to express personal meaning
  • Create activities that are beyond current language level
  • Expose learner to full range of context

• More control to the learner (Ellis, 2005)
  • Less rigid organization of tasks, interactional patterns

• Van Lier’s (1996) three learning principles
  • awareness (to learn something you must notice it)
  • autonomy (learner decides what to learn, how, when)
  • authenticity (learning must be intrinsically motivated)

• Promote scaffolded work within the ZPD (van Lier, 1996)
  • Work that is challenging but also attainable (p.94)
The German Class

- Advanced conversation class with a mix of proficiency levels
  - Intermediate high to advanced low (ACTFL)
  - Can converse with ease, confidence when dealing with routine tasks and social situation related to work, school, and recreation

- Goal of class is to improve speaking proficiency
  - Increase amount of language, accuracy, fluency
  - Speak about a wider range of topics that include public interests
  - Practice the use of genres beyond the narrative to include expressing, supporting and defending personal opinions
iPad Technology and Apps used

- In-class activities
  - Electronic dictionaries, Glassboard, News broadcasts
- Activities outside of class
  - Peer-conversations using Face-Time
  - Speech Recording using iPad Camera
  - News Broadcasts
- A variety of Apps geared towards creating opportunities for meaningful interactions
  - Built-in apps that came with the iPad
  - A list of apps to download
<table>
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<th>Writing and Taking Notes</th>
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<tr>
<td><img src="image1.png" alt="Notes" /></td>
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<tr>
<td><img src="image2.png" alt="Notes" /></td>
</tr>
<tr>
<td>You can take notes (handwritten or typed) and draw on your pad. (free)</td>
</tr>
<tr>
<td>This is for typed and handwritten notes, sketching, mind mapping. (free)</td>
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<tr>
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<tr>
<td><img src="image4.png" alt="N24" /></td>
</tr>
<tr>
<td><img src="image5.png" alt="Tagesschau" /></td>
</tr>
<tr>
<td>A comprehensive news summary from Germany. (free)</td>
</tr>
<tr>
<td>N24 is the leading News Channel in Germany. (free)</td>
</tr>
<tr>
<td>The German news channel Tagesschau. (free)</td>
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<th>Back-Channeling and Social Networking</th>
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<td><img src="image7.png" alt="20 minutes ONLINE" /></td>
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<tr>
<td><img src="image8.png" alt="SF" /></td>
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<tr>
<td>A collection of ZDF Programming in the ZDF Media Library. (free)</td>
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<tr>
<td>20 Minutes of short Swiss News. (free)</td>
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<tr>
<td>Swiss News and World News from Swiss Television. (free)</td>
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<tr>
<td><img src="image10.png" alt="Multilingual Dictionary and Translator" /></td>
</tr>
<tr>
<td>You can edit your videoclips and add themes, titles, music. ($4.99)</td>
</tr>
<tr>
<td>Glassboard is used to message the class quickly and easily. (free)</td>
</tr>
</tbody>
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Weekly Thematic Practices

• Example: Where Students Live
  • News Segment (outside of class)
    • Students worked with a news segment about the living situation of German students.
  • Class Discussion
    • News segment was discussed in class using interactive exercises and collaborative group assignments.
  • Face-time chat (outside of class)
    • Students described their living situations to their chat partner over face-time.
• Video recording event
  • Students filmed their room or apartment with camera on back of iPad describing what their room looked like.
Research Questions

- **Conversational activities**
  - How much time did students spend in conversation with their peer using *Face-Time*?
  - Did students feel it contributed to learning L2?

- **Recording activities**
  - How long was each recorded speech sample?
  - What were the differences of sample 1 and 8 in length, fluency, complexity, accuracy
  - Did students feel it contributed to learning L2?

- **News broadcasts**
  - Did students regularly engage in watching NB?
  - Did it increase students' speaking proficiency in a wider range of topics on current cultural and political issues?
  - Did students feel it contributed to cultural learning?
Research design and participants

- One-group pretest-posttest design using matched-pairs t-tests.
- Data drawn from oral performances of 12 students
  - 3 majors, 5 minors
  - 6 had studied abroad
  - 2 to 14 courses in German
- Data collection
  - Self-reported data on length of *Face-Time* activities
  - Length of each recording was tracked (7 recordings)
  - Assignments #1 and #8 were transcribed and analyzed
  - Self-reported data on watching News Broadcasts
  - Online survey about experience and attitude
Measuring language performance

- Length of language samples
  - Length of recorded time / number of individual words
  - Rate of speech production expressed as words per sec.

- Syntactic complexity
  - Mean number of sentences at T1 and T2
  - Mean length of each sentence (words)
  - Proportion of complex to total number of sentences

- Overall proficiency
  - Samples were evaluated holistically using ILR scale
Question:
How much time did students spent in conversation with their peer using *Face-Time*?

- Average time spend each week in conversational interactions ranged from 22 to 29 minutes.
- Length did not change significantly.

Table 1:

**Weekly Face-Time Conversation Times outside of Class (Self-reported, in Minutes)**

<table>
<thead>
<tr>
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<th>Week 2</th>
<th>Week 3</th>
<th>Week 4</th>
<th>Week 5</th>
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<td>11</td>
<td>9</td>
<td>11</td>
<td>11</td>
<td>12</td>
<td>12</td>
</tr>
<tr>
<td>Mean</td>
<td>29.45</td>
<td>25.82</td>
<td>28.33</td>
<td>22.55</td>
<td>28.18</td>
<td>27.08</td>
<td>23.83</td>
</tr>
<tr>
<td>SD</td>
<td>19.20</td>
<td>9.08</td>
<td>13.69</td>
<td>7.61</td>
<td>12.50</td>
<td>11.37</td>
<td>8.10</td>
</tr>
</tbody>
</table>
Question:
How long was each recorded speech sample?

• The length of the recordings increased each week
  • Average time for assignment # 1 was 1 min 43 secs
  • Average time for assignment # 7 was 7 mins 29 secs

Table 2:
Weekly Video Recording Times (in Seconds)

<table>
<thead>
<tr>
<th></th>
<th>Assign. 1</th>
<th>Assign. 2</th>
<th>Assign. 3</th>
<th>Assign. 4</th>
<th>Assign. 5</th>
<th>Assign. 6</th>
<th>Assign. 7</th>
<th>Assign. 8</th>
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<td>12</td>
<td>12</td>
<td>11</td>
<td>12</td>
<td>12</td>
</tr>
<tr>
<td>Mean</td>
<td>103.42</td>
<td>176.18</td>
<td>228.67</td>
<td>229.58</td>
<td>286.83</td>
<td>421.09</td>
<td>449.08</td>
<td>330.50</td>
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<tr>
<td>SD</td>
<td>22.07</td>
<td>68.81</td>
<td>77.77</td>
<td>100.54</td>
<td>87.97</td>
<td>130.87</td>
<td>242.29</td>
<td>107.98</td>
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</tbody>
</table>
Question:
What were the differences of sample 1 and 8 in length, fluency, complexity, and accuracy?

- The length and number of words increased
  - Average time of T1 was 1 min 43 secs
  - Average time of T2 was 5 mins 30 secs
  - Average words in T1 was 178
  - Average words in T2 was 477

Table 3: Language Performance at T1 and T2

<table>
<thead>
<tr>
<th></th>
<th>Time (Sec.)</th>
<th>Words</th>
<th>Change</th>
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<tbody>
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<td>T2</td>
<td></td>
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<tr>
<td>N</td>
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</tr>
<tr>
<td>Mean</td>
<td>104.83</td>
<td>334.33</td>
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<tr>
<td>SD</td>
<td>21.91</td>
<td>120.06</td>
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<tr>
<td>t-value</td>
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<tr>
<td>p-value</td>
<td>0.000</td>
<td>0.000</td>
<td></td>
</tr>
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The t-values and p-values are the result of paired one-sided t-tests.
Question:
What were the differences of sample 1 and 8 in length, fluency, complexity, and accuracy?

- Total number of words divided by total amount of time
  - Fluency rate at T1 was 1.69 (100 words per min)
  - Fluency rate at T2 was 1.42 (85 words per min)

Table 4: Fluency Rate at T1 and at T2

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<tr>
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<tr>
<td>Mean</td>
<td>1.69</td>
<td>1.42</td>
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<tr>
<td>SD</td>
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<td>0.30</td>
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<tr>
<td>t-value</td>
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<tr>
<td>p-value</td>
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</table>

The t-value and the p-value are the result of paired two-sided t-tests.
Question:
What were the differences of sample 1 and 8 in length, fluency, complexity, and accuracy?

- 12 sentences at T1 versus 26 sentences at T2
- 12 words per sentences at T1 versus 15 words at T2
- 9 simple sentences at T1 versus 18 simple sentences at T2
- 3 complex sentences at T1 versus 8 complex sentences at T2

Table 5: Syntactic Complexity of Sentences at T1 and at T2

<table>
<thead>
<tr>
<th>Sentences at T1</th>
<th>Sentences at T2</th>
<th>Change</th>
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<td>N</td>
<td>12</td>
<td>12</td>
</tr>
<tr>
<td>Mean</td>
<td>9.54</td>
<td>12.62</td>
</tr>
<tr>
<td>SD</td>
<td>4.05</td>
<td>3.23</td>
</tr>
<tr>
<td>N</td>
<td>12</td>
<td>12</td>
</tr>
<tr>
<td>Mean</td>
<td>8.38</td>
<td>13.62</td>
</tr>
<tr>
<td>SD</td>
<td>4.05</td>
<td>3.23</td>
</tr>
</tbody>
</table>

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Question:
What were the differences of sample 1 and 8 in length, fluency, complexity, and accuracy?

- Overall proficiency and accuracy was evaluated by four experienced instructors in a blind assessment.

Figure 3: Assessment Results of Oral Speech Samples

$(n=12)$; Assessment criteria based on a modified ILR scale from 0 (no proficiency) to 5 (native proficiency).
Discussion

- The results suggest that getting involved in real-time conversational activities is likely to be beneficial in improving and speeding up oral proficiency.
  - Students felt more and more comfortable speaking as time progressed and they had more to say (as seen in increased recording time).
  - Syntactic complexity increased as learners gained experience in L2 (Magnum, 1988).

- Fluency decreased and error rate increased
  - Simple sentences in T1 - more complex sentences in T2
  - Processing constraints in working memory
  - U-shaped learning curve (Karmiloff-Smith, 1992; Siebert-Ott, 2000)
Samples

- **Sample T1** (translated)
  
  *This is Stacy. I am uncertain how to describe myself best. Maybe I should start with my age. I am 21 years old. I was born in Kiev. My most favored color is green. I like techno music and folk art.*

- **Sample T2** (translated)

  *My name is Anastasia but most people call me Stacy because it is easier to pronounce. I was born in the Ukraine but have been living in the United States since 2001. I am an American citizen now and I am really happy about it because it was a very long process ... When I have time I read science fiction books. I find the worlds they describe really fascinating. This is the reason why I read these stories.*
Survey

- Overall, students felt that using an iPad was beneficial because they felt more confident speaking.

Figure 2: Self-Assessment of Skills before and after Class using the CERF Scale.
Limitations

- Small sample size
- Absence of a control group
  - Contribution of additional practice versus classroom
- Using first assignments as T1 introduced limitations
  - We needed to work out some technical glitches
  - Students needed to get used to recording their voice
- Limitations in assessing fluency, accuracy, complexity
  - Fragmented, elliptical constructions, run-on sentences
  - Global proficiency vs in-depth measures (Iwashita, 2010)
  - Coding errors is difficult (small vs big errors)
  - Researchers do not agree on the definition of fluency
  - Interdependence of fluency, accuracy, and complexity
Conclusion

- The added practice afforded by the iPad increased amount and quality of oral language.

- However, it may not have been the result of adding time on task.
  - Spanish speaking students spending a semester abroad did not increase their proficiency (Segalowitz & Freed, 2004)
  - Students blamed the repetitive and predictable nature of the exchanges with their host family.

- Integrated scaffolded nature of the tasks using the iPads may have been really beneficial:

  “The aim is to pull (without forcing) the students into an ever expanding ZPD so that they gradually become more confident and independent language users in accordance with their growing proficiency” (van Lier, 1996, 198)
The presentation is based on the following paper:


The paper contains the full bibliography.