Chapter 9
An Online Learning Community as Support for At-Risk Students' Literacy Growth: Findings, Implications, and Challenges

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This chapter reviews the decade-long process of developing an online learning environment focused on bringing together 9–12-year-old students in American elementary schools with adult mentors in order to read, respond to, and write about children's books of different genres that address a variety of topics. Over the years, the project has developed curricular units of study as well as professional development materials for the teachers and the adult pen pals. During this time, we have gathered data about the project's processes and its impact on student achievement, as well as a variety of factors involved in constructing an online environment that is designed to be both user-friendly and educationally impactful.

In what follows we address five crucial issues that have arisen in this process that we feel are instructive for future developments related to online learning environments that intend to promote skill in reading comprehension, writing, and higher-level thinking for elementary school-age children. We address these five issues after first presenting a brief description of the project—In2Books—and a summary of the three research studies conducted to date.

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A. Shamir and O. Korat (eds.), *Technology as a Support for Literacy Achievements for Children at Risk*, Literacy Studies 7, DOI 10.1007/978-94-007-5119-4_9,

In2Books: History and How It Works

ePals' In2Books is a research-based program, with the central mission of building a digital learning community among grade 3–5 students (aged 9–12 years old), their teachers, and adult pen pal volunteers. From its inception in 1998, I2B has focused especially on under-resourced neighborhoods where many students come from low-income, culturally diverse backgrounds and typically have school achievement levels significantly lower than children from economically higher circumstances. The program was developed to motivate elementary school-age children to engage in authentic literacy activities across curriculum subject areas and, in so doing, foster higher-level thinking, composing, and comprehension skills. The principal feature of I2B is a pen pal exchange that has adult volunteers and students writing to each other about a common set of children's books they have each read. The focus is on creating a context in which students are motivated to read books and to comprehend them deeply because they will write about them to an adult who engages in dialogue about what has been read. In their classrooms, teachers employ a range of instructional activities (e.g., discussion, questioning, vocabulary and fluency activities, process writing) to develop children's literacy skills and subject area knowledge, helping students not only to write good letters to their pen pals but also to effectively apply their reading and writing strategies in a variety of contexts.

From its inception, the program has been digitally supported (online resources for teachers, students, and pen pals; the adults wrote and sent their letters online), but in 2008, ePals completed the creation of an all-digital version of In2Books (except for the books) facilitated by three resource-rich websites—Teacher Place, Student Place, and Pen Pal Place, each customized to serve its audience and support the I2B experience. Teacher Place contains content resources related to the various books and genres, sample lesson plans, and social networking tools to connect with other In2Books teachers, as well as the needed range of resources for managing the daily logistics of the program (student roster, a writing assessment tool, schedule, tools for approving and ordering books and reviewing letters, etc.). The Student Place site provides students with tools for sending letters to and receiving them from pen pals, as well as with a range of resources related to the topics and books in each unit. Pen Pal Place serves as an online vehicle for helping pen pals write effective letters—it provides sample letters, an interactive tutorial for letter writing, additional information of program topics, all the tools necessary for communicating electronically with students, and means for ongoing messaging with the teacher and In2Books staff. From 2008 to 2010, the program was offered at no cost to high-poverty (Title I) classrooms and served approximately 7,000 students. In 2010–2011, groups of 3–10 teachers participated in 21 schools across the United States to involve 3,300 children.

Research Efforts

Throughout the entire time of this development, we have attempted to conduct research that would enable us to understand better (1) the effects of In2Books on students' literacy achievement and motivation, (2) the impact of I2B on teachers' instructional practices, and (3) the program elements associated with any of these effects. Following are synopses of three of the studies.

Study 1: Large-Scale Achievement Patterns

First is an examination of student achievement patterns in District of Columbia Public Schools (DCPS), an urban school district with historically low levels of student literacy achievement (see the United States National Assessment of Educational Progress Long-Term Trend Study results at http://nces.ed.gov/nationsreportcard/ltt/). We worked with the DCPS teachers over a period of 8 years, providing professional development and supporting the implementation of I2B in the classroom. Over 80% of the DCPS children taking part in the project attended schools that received supplementary government funding (the schools qualified for this supplementary funding because at least 40% of the children attending came from families living in poverty). Most of these children were struggling readers and writers, with literacy achievement 1 year or more below grade level.

During the 2003–2004 school year, we worked with over 2,000 DCPS students in grades 2–4 who were in In2Books classrooms. The school district supported conducting an evaluation to help answer the following research question:

- How does participation in In2Books relate to student literacy achievement patterns?

The district supplied the end-of-year test scores for all students in the district on the SAT-9 reading test, a standardized reading achievement test that measured reading comprehension, vocabulary, and word identification via a multiple-choice format (http://www.pearsonassessments.com/haiweb/cultures/en-us/productdetail.htm?pid=e139a). The scores of students in In2Books classrooms were compared with the scores of approximately 8,500 students in comparison classrooms that had not participated in I2B. We summarize here results from grades 3 to 4 because currently the program operates only from grade 3 onward. (See Teale and Gambrell 2007, for more details on this analysis.)

The following categories and numbers of students/classrooms were examined in the analysis:

- *Veteran In2Books*: teachers who had been implementing I2B for two or more years (Gr 3: 26 classrooms, 462 students; Gr 4: 21 classrooms, 390 students).

Table 9.1 Mean SAT-9 reading test scale scores

Grade level	Veteran I2B	First-year I2B	Total I2B	Non-I2B
3	626.9*** (47.7)	612.9* (48.2)	619.2*** (48.4)	607.7 (40.9)
4	637.3*** (46.1)	637.5* (44.3)	637.4** (45.1)	626.8 (39.2)

***$p < .001$; **$p < .01$; *$p < .05$

- *First-year In2Books*: classrooms where teachers implemented the program for the first time during the 2003–2004 school year (Gr 3: 33 classrooms, 570 students; Gr 4: 24 classrooms, 428 students).
- *Total In2Books:* veteran + first-year I2B classrooms and students (Gr 3: 59 classrooms, 1,032 students; Gr 4: 45 classrooms, 818 students).
- *Non-In2Books classrooms*: classrooms in DCPS whose teachers were not participating in I2B in any way and did not implement the program in their classrooms that year (Gr 3: 3,121 students; Gr 4: 3,648 students). (The number of non-In2Books classrooms could not be determined from the DCPS database used in the analyses because data from numerous schools were labeled "No Name Given." Therefore, only numbers of students are provided.)

Table 9.1 provides the mean scale scores and standard deviations for each group at each grade level. Results were analyzed using a one-way analysis of variance within each grade, with a four-level grouping variable. In every case, there was a statistically significant main effect of group, with students in I2B teachers' classrooms performing at higher levels compared with students not in the program. Tukey's post hoc tests showed that the significant differences between means occurred in the cells marked with asterisks in Table 9.1, summarized as follows:

- At both grade levels, both veteran I2B and first-year I2B teachers' students scored significantly higher in reading achievement than non-I2B students.
- At both grade levels, students of veteran I2B teachers scored significantly higher than those of first-year I2B teachers.

The calculated effect size for the significant difference ranged from small to moderate (.26–.46).

The vast majority of students in the In2Books group (80–83%, depending on grade level) were from Title I schools. Additional analyses comparing achievement patterns in only Title I I2B schools with non-I2B students showed the same overall pattern of results. Thus, the scores indicated that "at-risk students" who experienced In2Books as part of their instructional program were significantly more likely to have higher achievement levels in reading than students not in the program. It is important to note, of course, that causal connections cannot be made between the higher scores and the I2B program because it was not possible to conduct pre- and post-testing or compare the I2B student learning with students in another reading/literacy intervention, but this initial study did provide suggestive results about the positive effects of the In2Books program.

Study 2: Literacy Engagement and Book Discussion Patterns Across Three Grade Levels[1]

This study focused on reading, writing, book discussion, and literacy motivation in grade 3–5 students (ages 9–11) (Gambrell et al. 2011). Three research questions were formed to examine the central feature of In2Books, the pen pal intervention focused on authentic literacy activities:

- Does engagement in a pen pal intervention focused on authentic reading, writing, and discussion tasks influence the literacy motivation (self-concept and value of reading) of grade 3, 4, and 5 students?
- Does engagement in the intervention provide a context for small group interactions that reflect dimensions of accountable talk (community, content, and critical thinking)?
- What do students report regarding their participation in the intervention?

Participants were 7 US elementary school teachers and their 219 elementary school students in grades 3–5. Across the four schools involved, the percentage of students qualifying for free/reduced price lunch (and therefore described as at risk because they come from low-income homes) ranged from 47 to 75%. The study used a mixed method design and a triangulation convergence model (Creswell and Plano Clark 2006; Ross et al. 2004). Data collection involved gathering quantitative information (e.g., Literacy Motivation Survey, Gambrell et al. 2011) as well as qualitative information (e.g., audio recordings and transcriptions of small group discussions and key informant interviews) so that the data could be integrated to reveal a rich description of what occurred during the intervention.

Especially emphasized in this intervention were discussion groups in which 6–8 students talked about the books they read and the letters they received from the adult pen pals. All students in each classroom participated in the small group peer-led discussions using strategies introduced by the teacher during reading instruction. They talked about the ideas in the book they had read as well as questions that they could ask their adult pen pals. Students participated in at least two small group discussions about each book before writing to their adult pen pal.

Key findings from the study were as follows:

- Both boys' and girls' reading motivation increased significantly from fall to spring, as measured by the Literacy Motivation Survey (Gambrell et al. 2011). This result is particularly interesting in light of the robust findings from prior research showing that US elementary students' reading motivation typically

[1] This research was supported in part by a Creative Inquiry grant from Clemson University and a CARL grant from the In2Books Foundation to Dr. Linda Gambrell. At the time of the study, the In2Books Foundation was a not-for-profit organization. CARL was created by the In2Books Foundation to support research on broader issues of literacy development and did not sponsor research specifically on the In2Books program. Dr. Gambrell currently serves on the Academic Advisory Board of ePals/In2Books.

declines across the school year and as students progress through the grades (e.g., McKenna et al. 1995). Since this study was descriptive in nature, causal factors in this increase cannot be directly determined; however, interviews with 28 key informants across grade levels revealed that factors related to the authenticity of the In2Books literacy activities (e.g., exchanging ideas with an adult who is personally interested) had created situational interest in the school-related tasks of reading, writing, and discussing a commonly read book.

- Transcripts of 15 small group discussions were analyzed using an adaptation of an instrument developed by Resnick and colleagues based on the concept of accountable talk (Michaels et al. 2007; Resnick 1999; Wolf et al. 2005). Accountable talk provides a framework for evaluating academically productive group discussions (Michaels et al. 2007). Of particular interest in this study was whether authentically situated small group interactions about a shared text would provide a context for accountability to *community (learning community), content* of the text (knowledge), and *critical thinking (rigorous thinking).* Across the 15 discussions, students demonstrated consistent reference to the text and discussion topic. There were only two brief instances of off-topic discussion, and both occurred in fourth grade classrooms. More specifically, the analysis of the transcripts provided evidence of purposeful student cognition and suggested that the authentic literacy tasks of reading books, exchanging letters, and engaging in small group discussions are viable tools for creating a learning context that reflects student accountability to community, content, and critical thinking.
- When asked what they liked best about the program, key informants most often mentioned that they valued having an adult pen with whom they could exchange letters (57%). Writing to an adult who does not assess you, but to whom you are responsible for communicating effectively in order to continue the valued connection, seems to represent a task that relates to students engaging more fully in the important academic elements of reading, writing, and discussing books.
- Students also frequently mentioned that the classroom activity that helped them most to understand the books was the small group discussions (48%). Such responses provided support for view that students appropriate the tools for understanding through the socially embedded connections provided by discussions (and letter exchanges) (Malloy and Gambrell 2010; Vygotsky 1978). In this study, students reported that their personal workspace, or individual understanding of the text, was enhanced through interactions with peers in discussion groups.

Study 3: One Teacher's Study of Her Own Fifth-Grade Classroom[2]

This study yielded yet another perspective on the In2Books program. It was "action research" (Mills 2003) and thus provided a look at the issues a teacher wrestles with in using the learning community afforded by technology for working in school

[2] This research was supported by a Teachers Network Leadership Institute MetLife Fellowship from the Chicago Foundation for Education.

settings where many students struggle with reading and writing. This research was conducted by a fifth-grade teacher who was implementing In2Books in her Chicago Public Schools (CPS) classroom over the course of one school year (Lyons 2010). She conducted the work as a member of a group of CPS teachers supported by a fellowship experience designed to enable them to "share their research and recommendations for improving student achievement with colleagues while working with educational leaders to inform and influence policy decisions impacting classrooms" (http://www.chicagofoundationforeducation.org/pages/all_about_cfe/18.php).

This was Lyons' third full year of implementing I2B (she had one prior year of experience with the program in CPS and one in DCPS). The vast majority of students in the classroom were considered "at risk"—97% received free or reduced price lunch and most resided in public housing facilities (government-supported housing for low-income families). Eighteen of the 28 students in the classroom started the school year at an academic warning (also termed below grade level) status based on scores from the Illinois Standards Achievement Test (ISAT) (http://www.isbe.state.il.us/assessment/isat.htm). Eight had been previously identified with learning disabilities and received special education instruction.

Two questions were examined in the study:

- How does the use of authentic writing experiences through In2Books impact the students' reading and writing skills and their engagement in literacy?
- What kinds of questions, responses, and interpersonal connections developed between the students and their pen pals, as evidenced in the letters about books that they wrote to each other?

The following data were collected:

- Engagement in literacy: beginning- and end-of-year scores on the motivation to read profile (MRP) (Gambrell et al. 1996)
- Reading achievement: three data sources served as indicators of student literacy achievement across the course of the year:
  - Beginning- and end-of-year scores on the Northwest Evaluation Association *Measures of Academic Progress* (MAP) standardized reading tests (http://www.nwea.org/products-services/computer-based-adaptive-assessments/map)
  - End-of-year scores on the ISAT reading test
  - In2Books Rubric (Glasswell and Teale 2007) scores, completed for all student letters written for the Realistic Fiction, Social Studies, and Biography cycles
- Content analysis of student letters from three I2B cycles/units—Realistic Fiction (topic: Bullying), Social Studies Informational Text (topic: Westward Expansion); Biography (topic: Inventors)

At the beginning of the school year, Lyons used the MRP scores for reading self-concept as reader and value of reading, together with student achievement levels, to help plan her instructional approach in literacy. The overall patterns of scores led her to conclude that it would be especially important during the school year for this

group of students to be engaged in literacy activities they would consider as meaningful and valuable to both their academic and social lives. Follow-up informal conversations with each of the students about personal literacy and leisure activities indicated that they valued social networking and preferred literacy tasks that were online, so she incorporated In2Books into the curriculum. In addition, she planned that while teaching the I2B content, she would frame activities in such a way as to make explicit for the students how the academic literacy tasks in the program were also an investment in their social and personal lives. For example, in shared readings, she mainly used nonfiction texts that highlighted historical events or (auto) biographical accounts typically neglected in traditional history textbooks (e.g., *Black Soldiers in the Revolutionary War*, *The Trail of Tears*, *Crispus Attucks*); Lyons was able to facilitate discussions in which students could realize how these events and people helped to shape today's world. Such activities also helped many students realize the connection between their personal feelings of marginalization (owing to low proficiency in reading and writing) and the similar experiences with these events and historical figures. Additionally, Lyons incorporated numerous activities that required her students to conduct research about these events/individuals online and then share their findings, thus creating another connection between academic and social literacy tasks.

Lyons also noted from these beginning-of-year scores something she found surprising: the warning/below students scored as highly on self-concept as reader on the MRP as the more accomplished readers in the class. This led her to conclude that "I needed to teach this group strategies for self-monitoring while reading so that they could become more appropriately aware of their comprehension levels" and that "I needed to be explicit and honest with them about their reading levels."

Such examples illustrate a teacher's use of systematically collected data for planning, having opportunities for collaborative discussions about it, and, as a result, differentiating instruction, a process associated with enhanced teacher effectiveness and student achievement (Lai and McNaughton 2009; Timperley et al. 2009).

In addition to these insights into literacy/technology/struggling students, this study led to the following findings:

- Scoring of student letters using the In2Books Rubric yields a score on each of two dimensions of students' writing: (1) communication of ideas about the book and (2) use of language and organizational features. ANOVAs for each of these scores across the three genres/topics followed up by paired t-tests found identical patterns: the quality of ideas and the language/organization in the social studies (SS) and biography (bio) letters did not differ significantly, but both were significantly higher than scores for the realistic fiction (RF) letters. Interestingly, students indicated that they enjoyed reading the RF best of all three genres. As the RF books/letters were the first completed in the program, it could be that increased experience with writing or repeated interactions with the pen pal letters contributed to higher writing performance on the SS and Bio letters. In addition, Lyons noted that for the SS unit of study, she integrated many more Social Studies content lessons about the topic Westward Expansion into the In2Books reading/writing

activities. As a result, she concluded, "Students were not only learning about westward expansion from their pen pal and from their In2Books book, but they were also learning additional content from our shared readings and content lessons. I believe that this integration contributed to my students' high scores in the area of Comprehension (on their letters)…. I plan to integrate more literacy and social studies and science content lessons next year."

- Lyons also presented portraits of six focal students purposefully sampled from the class to represent a range of achievement levels and motivational profiles, as well as a range of responses to the I2B instructional activities and pen pal letters. Summary information on the students is presented in Table 9.2. From the scores, work samples, and student interviews, she created portraits of different student responses and learning trajectories.
  - From the students' responses to the pen pal experience, for example, she identified two categories of students: Go Getters and Slow to Trust. "The students I labeled as Go Getters were immediately attracted to the idea of having a pen pal…. Go Getters wrote detailed introductory letters and could not wait to share their pen pal's response letters with me, their peers, and their families. Slow to Trust students did not initially demonstrate this excitement and were reluctant to exchange letters, especially letters with any elaborate written information about themselves or about their interest in reading and writing." She also found that "each of my Slow to Trust students developed into Go Getter students as they began to trust their pen pal and enjoy the process of engaging in online discussions about their books."
  - With respect to achievement patterns, she examined the progress that the students made in both standardized test scores and the Comprehension section of the rubric to see if the "level" of questions asked by adult pen pals was in any way related to the complexity of response exhibited in the student letters or students' overall achievement gains. She found, however, that "the pen pals' level of questioning did not necessarily affect whether the student produced a high level or low level response in the written letter."
  - Finally, Lyons concluded that another "area that emerged throughout the year from within the letters that encouraged several of the focal students to deeply engage in the I2Bs process and improve their literacy skills…was the interpersonal connections that developed between the student and the adult pen pal." She described the case of her student Tara, who in her fourth letter to her adult pen pal Kayla stated, "I just want to say you are a life saver to me." As a result of the interpersonal interaction with her pen pal, Lyons notes that Tara "finally felt comfortable sharing both with her pen pal and with me a situation of severe bullying that had been going on for three years….I believe that it was the relationship that developed between Tara and Kayla that helped Tara gather the courage to confront this situation and ask for my help."

In summary, what this study provided was a teacher perspective on the implementation and impact of the In2Books intervention in an urban, high-poverty setting. Lyons concludes that the interpersonal relations and the give-and-take about

Table 9.2 Descriptive information on focal students (Lyons 2010)

Focal student	Beginning-of-year student demeanor regarding pen pal activity	Teacher description of students' beginning-of-year literacy characteristics	Beginning-of-year ↓ End-of-year changes on ISAT/MAP reading achievement tests (exceeds, meets, below, warning)
Kara	Go Getter	Book lover, hard worker, enjoys writing but struggles with including elaboration	Meets (late 5th grade equivalent)* ↓ Meets (early 6th grade equivalent) (*This is a midyear score; Kara transferred to this class after school year began)
Mike	Slow to Trust	Interested in specific books, completes class work independently, dislikes school writing	Meets (early 5th grade equivalent) ↓ Meets (early 6th grade equivalent)
DiDi	Go Getter	Book lover, hard worker, struggles with inferential thinking, enjoys writing but writing lacks organization	Below (3rd grade equivalent) ↓ Exceeds (early 8th grade equivalent)
Adam	Go Getter	Interested in specific books, distracted reader, stream of consciousness writer	Below (early 3rd grade equivalent) ↓ Meets (late 5th grade equivalent)
Terrieon	Slow to Trust	Reluctant reader and writer, writing lacks elaboration and structure	Below (middle 3rd grade equivalent) ↓ Below (middle 3rd grade equivalent)
Avon	Slow to Trust	Reluctant reader and writer, writing lacks coherent focus, elaboration, and structure	Below (2nd grade equivalent) ↓ Below (middle 3rd grade equivalent)

content forged through this technology-enhanced pen pal experience promoted both positive attitudes toward literacy and opportunity for growth in literacy achievement for her students.

Lessons Learned

We have used data and findings from these studies to reflect on the larger topic of the role that technology can play in addressing literacy achievement among children considered to be at risk. The following "lessons learned" relate to both theoretical and practical issues in the literacy education of such children.

The Technology-Enabled Learning Community Created Instructional and Learning Opportunities That Contributed to Literacy Success for Many Children Who Participated

The digital community organized around intergenerational discussion of literature (both narrative and informational) fostered learning exchanges among students, adult pen pals, and teachers that could not have existed without the affordances of technology. In short, the digital environment made possible a learning community that both existed within the walls of the classroom and extended beyond it, encompassing other classrooms as well as the larger world outside of the school. This community brought a number of affordances to students' literacy learning and content learning. It provided interpersonal support and motivation, lent a real-world authenticity to students' in school experiences, and scaffolded student learning of specific content and a variety of reading and writing skills.

Additionally, the digital platform helped classroom teachers in several ways. For one thing, they were readily able to maintain communication with the pen pals, providing them with feedback as to the appropriateness of their letters for the particular student in question (e.g., language level in the letter, number/difficulty of questions asked, need for more timely responses). In this way, the teacher could "fine-tune" the scaffolding that a student was receiving from the pen pal. Also, the technology platform made it easy for teachers to provide feedback to students, advising them about the appropriateness of their book selections and especially facilitating the conferencing part of writing workshop through commenting on drafts of letters so students could improve them.

We are planning to explore other aspects of learning communities not touched on in the studies to date. For example, although the Lyons study provided some indication of how ongoing teacher assessments could contribute to appropriate differentiation of literacy instruction, Cosner's recent work on grade-level data-based collaboration suggests that even stronger effects on teacher skill and student achievement can be realized with a sustained approach that involves ongoing

examinations of data with grade-level teams of teachers supported by school leadership personnel (Cosner 2011a, 2011b). This suggests additional ways that a central guiding principle of In2Books—the assessment-instruction cycle (http://in2books.epals.com/content/info.aspx?caid=Reading_Strategy&divid=Planning)—can become an even more robust part of a teacher's daily practice. When teachers collaborate to examine assessment data and plan instruction based on those data—especially in situations where the school principal is supporting such work school-wide—a powerful community of practice ethos can take root across the school. Technology can play a central role in promoting such a community.

Online Professional Development Communities

Closely associated with the idea of a learning community that directly supports students in the classroom is the teacher learning community that we observed within In2Books. The teacher professional development (PD) involved in the program was not directly studied in any of the three research projects discussed above, but observations, informal interviews, and focus group feedback sessions indicated that the professional interactions occurring among the teachers were extremely important. Both the DCPS project and the Gambrell et al. project involved face-to-face professional development sessions, and during the actual sessions and beyond, there was considerable sharing of teaching and assessment ideas. Such teacher-to-teacher interaction was central to building a teacher learning community that enhanced professionalism and, we suspect, also contributed to higher-quality classroom instruction.

The face-to-face PD enabled I2B professional development providers a degree of "control" over the establishment of a learning community among the teachers. We all met together periodically over the course of the entire school year. These meetings provided not only opportunities for the I2B staff to share planning, teaching, and assessment strategies with teachers, they also were rich opportunities for professional dialogue among teachers across different grade levels and from different schools. We found that such experiences raised the level of teacher involvement and professional development, especially among teachers at schools with a history of large numbers of students performing below grade level in literacy.

The program is now focusing on how to replicate these types of interactions in the online environment. During the past year, informal mechanisms built into Teacher Place like blogs, forums on significant or provocative issues, and contest-like activities did not result in much active teacher participation. During the 2010–2011 school year, In2Books has been examining the effects of having, at various school sites, groups of teachers headed by an experienced In2Books teacher engaging in a summer professional mentoring course and teacher mentor group exchanges. These teachers will also work to establish a stronger exchange with their volunteer pen pals and stay closely connected with central I2B staff through messaging, interactive professional development, forums, and exchanges in new online sites Teachers' Lounge and Pen Pals' Lounge.

Technology Can Create Opportunities for Authentic, Purposeful Literacy Instructional Activities That Otherwise May Not Be Possible

In working with "at-risk" students, authentic literacy activities may be especially important (Teale et al. 2007). Typically, students struggling with reading and writing have negative attitudes toward engaging in reading or writing (Kucan and Palincsar 2011). The acts of reading and rereading deeply for comprehension, as well as writing a letter about what you read, seemed for a sizable number of students in the studies to be a task they willingly approached because they knew they were writing to a real audience. Thus, the authentic and purposeful nature of the pen pal exchange with an adult may carry sufficient social value for students that they perceive a utilitarian value for engaging in the classroom reading, discussion, and writing activities. In other words, the authentic exchange with an adult may provide significant motivation and scaffolding for the school-related tasks of creating, revising, and communicating personal interpretations related to the book that was read.

Frequently, those who write about instruction for reluctant readers/writers discuss the importance of making activities fun so the students will want to engage in them. We see it differently. What we noticed in the In2Books experience was that students often worked very hard to understand, annotate, and respond to their pen pals' letters, as well as comprehend the books they were reading. In other words, it was not always fun for them. But what seemed to sustain students was the perceived importance and purpose to what they were doing—communicating with a real audience. Thus, engagement was key, and purpose was a significant factor associated with continuing engagement.

Academically Challenging Work Is Important for the Literacy Education "At-Risk" Learners

Programs for 9–12-year-old students experiencing difficulties in literacy often focus on code-related skills such as phonics, word recognition, spelling, and reading fluency. These skills are extremely important because they are typically underdeveloped among such learners and therefore should feature prominently in their literacy instruction. But, our research findings have led us to believe that an instructional focus on such skills, while necessary, is not sufficient for helping struggling students at these age levels. Students also need to experience what it is to read and write at grade level. This means that even students having difficulty with literacy need to encounter content that is commensurate with their grade level, and they need to engage in the more complex reading and writing skills and strategies that are necessary for processing that content.

"Acceleration" is key to getting intermediate grade students back on track for long-term success in reading and writing. By *acceleration*, we mean that students who are behind need to accomplish more than one year of progress in reading and writing over the course of one school year. Such success cannot be achieved with curriculum and instruction that focuses only on foundational skills at the word and letter-sound levels. Nor does it work to take the position that this particular year of schooling can focus on getting children up to speed on their foundational skills so that next year we can address higher-level skills. Such a position is shortsighted education from our perspective. Even students experiencing difficulty in literacy need a comprehensive approach to learning that stresses the interdependence of content and literacy skills for reading and writing achievement.

Hence, the focus on experiencing reading and writing in different genres and ensuring that thematically and informationally rich topics were explored were of central importance to the effects of In2Books for the students. "Higher-level" literacy activities were a consistent aim instructionally in I2B classrooms. It has been our experience that it is much more difficult to create online literacy learning activities that foster reading comprehension, writing skill, and higher-level thinking than it is to develop foundational activities in areas such as phonological awareness, decoding, and even reading fluency, which is typically treated in such activities as involving only word reading accuracy and speed. But, we hope the above examples demonstrate that it is quite feasible to create instructionally appropriate, higher-level learning experiences for struggling readers.

The Adult-Child Relationship Can Play a Pivotal Role in the Impact of a Program on Engagement and Learning for Struggling Students

The importance of the interpersonal aspect of the literacy activities in In2Books could be seen most specifically in the data from Lyons' case studies and the Gambrell et al. research. Both of these studies clearly indicated that one of the most motivating aspects of the program for the students was getting to know the adult pen pals. This bond between the student and the adult developed as personal information was requested and shared in both directions. Content analyses of letters written in the Gambrell et al. study showed that whereas the adults saw their role in the exchange to be primarily academic in nature (focusing on critical literacy, as indicated by their attention to asking questions about the books), the students valued the personal interaction with an adult who was not a teacher and who would not be grading their performance. Lyons' case studies of specific students also bore out the importance of such relationships.

In addition, as nonempirical support for this conclusion, we heard time after time from teachers during 3 years of conducting face-to-face professional development in the District of Columbia Public Schools that the student-pen pal relationship was

key to motivating many of their students to read, reread, and study their books carefully and to engage in the extended process of writing and revising their letters. These comments, and our examination of hundreds of student letters in developing and field testing the rubric for assessing letters (Glasswell and Teale 2007), led to the inclusion of "Connecting with Pen Pal" as one of the seven features of writing assessed with the rubric because it seemed to be so important a feature for many students.

Conclusions

Data gathered from the three research projects described above have helped us to reflect on what played a role in the impact that a technology-centered program had on student learning, teacher practices, and community involvement in the literacy education of at-risk students. It has always been challenging to help students who are behind in reading and writing during the intermediate grades and beyond. We do not see that challenge lessening in the immediate future. However, our work convinces us that innovative applications of technology as well as new technologies themselves afford promising ways of addressing the educational needs of students struggling with literacy. We intend to apply the lessons learned to our continuing work and look forward to incorporating insights from a myriad of other projects that are examining the affordances of technology for literacy learning and instruction.

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