THE RUSSIA PROJECT: BUILDING DIGITAL BRIDGES AND MEETING ADOLESCENT NEEDS

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The intent of good education is to meet the needs of learners. How educators go about meeting those needs varies from one context to the next, and has lately been affected by the advent of technology-enhanced learning tools. Today, computer technology applications enable teachers to accelerate the pace of learning, increase the depth of in-school research, and tear down their classroom walls as they connect local learning environments to multiple, distanced sources of information. Technology can add an exciting new component to classroom learning. As modern educators explore ways to engage students in technology-enhanced classroom experiences, they must not lose sight of what is at the heart of good education—meeting basic learner needs. Marlene Asselin wisely asserts that using technology for technology's sake is not enough.[1] She contends that educators must establish a strong purpose for using technology in the classroom and must keep in mind that technology is simply a tool that can be used to enhance, not replace, good instructional practice. A unique challenge for classroom teachers today involves discovering meaningful ways to integrate new classroom technologies while simultaneously meeting the established learning needs of students.

In the following article, we share the findings from a year-long, technology-enhanced learning experience called the Russia Project. The Russia Project involved a group of university researchers, pre-service teachers, sixth grade teachers and their students from four countries and three continents; who, through Web connections, worked together to develop a deeper understanding of and appreciation for Russian history, geography, education, and current culture. They built what might be best described as a cultural-technological bridge that spanned both time and place. Most important of all, the educators involved in this technology-enhanced curriculum integration project kept the needs of adolescent learners as their decided focus.

The Needs of Adolescent Learners—A Framework

As a platform for discussing adolescent learners' needs, we have chosen the time-honored work of British educator Charity James. In 1974, James conducted in-depth studies in both British and American schools to forward curricular innovation that would better meet the cognitive, social/emotional, moral, and physical needs of adolescents.[2] James initiated her studies because of personal concern that student needs, particularly adolescent needs, were not being taken into consideration and addressed in school settings. Based on theory and research on child development, and her own classroom observations, she constructed a unique framework detailing the myriad needs of adolescent learners.

James wanted this framework to be used by educators who were intent on involving students in the kinds of classroom experiences that would be most engaging and most meaningful to them. The adolescent needs that James identified fell into twelve categories, which she presented in pairs and referred to as "need polarities." Each pair represented complementary aspects of certain human characteristics. James was careful to explain that the pairs of needs would not necessarily be met (or even have to be considered) in conjunction with each other; but rather, that they were to be looked at as the

balancing ends of a continuum. She also suggested that her list was not complete at the time she published her findings. She identified at least two other potential "needs categories" that she would continue to explore. James' original list of adolescent needs, however, fell into the following polarities[3]

- The need to be needed (by others)/ The need to need (others)
- The need to move inward/ The need to affect the outer world
- The need for intensity/ The need for routine
- The need for myth and legend/ The need for fact
- The need for physical activity/ The need for stillness
- The need for separateness/ The need for belonging

The need polarities incorporate many of the elements of established development theory credited to Eric Erikson, Lev Vygotsky, Carol Gilligan, James Garbarino, and Urie Bronfenbrenner.[4] We chose to evaluate the Russia Project and the strength of the cultural digital bridge that the project constructed in light of how well it met students' needs, as defined by the James' framework.

James viewed adolescence as a vitally important period of individual growth and change. Just as adolescents are evolving, so too is the society for which they are readying themselves. Teaching for understanding, while remaining cognizant of individual needs and building skills that address future needs of both society and the individual learner, is a weighty task. If educators are not mindful of the need to adapt to a changing society, James warns, we may experience "loss of shared cultural opportunities."[5] The intent of the Russia Project was to use new technologies as a means of extending cultural understandings and of embracing the change in educational opportunities that new technologies can afford. Although James presented her views on adolescent needs before computer technology had entered classrooms, she had predicted the impact computers would have on education when she stated that technology would encourage "adventurous experimentation" in schools in the decades ahead. Her prescient call to educators is to be adaptable; be aware of the changing needs of adolescents; and honor how that change might include the use of new technology.

We also chose the James' framework as a means of examining the impact of the Russia Project because we believe that her need polarities are applicable worldwide. Adolescent needs are constant; they are basic to human development. Not surprisingly, however, they are addressed differently by individual cultures. Today, we strive to teach in a computer-enhanced environment. Will the construction of a digital bridge, enabling a crossover to another culture, be enough to motivate learning and to enable cultural understanding? Or, must the blueprints for the bridge be drawn to address specifically the needs of the student, thus providing a tailored pathway that supports learning? The overriding belief of many educators is that integrating technology will enhance motivation, and concomitantly engagement with learning, thereby meeting adolescent learning needs. Is this accurate? Does the addition of technology, with its capacity for global interactions and subsequent enhancement of cultural understandings, actually address learners' needs? These are the questions we address as we present findings and analysis of the Russia Project in light of James' framework for adolescent needs.

The Russia Project Overview

We designed the Russia Project to reflect the steps taken in a journey; in this case, a virtual journey. We therefore present the steps we took while planning for the project and while interacting with our participants as well. At the close of each step, we discuss how the James' framework regarding adolescent needs was confirmed.

*Step 1— Inviting Participation: The Eager Traveler (*The Eager Traveler's Needs)
Step 2— Receiving Postcards from Russia: The Informed Traveler (The Informed Traveler's Needs)
Step 3— Generating Big Questions: The Curious Traveler (The Curious Traveler's Needs)
Step 4— Packing and Giving: The Thoughtful Traveler (The Thoughtful Traveler's Needs)
Step 5— Designing Projects: The Creative Traveler (The Creative Traveler's Needs)

Step 6— Presenting Projects: The Reflective Traveler (The Reflective Traveler's Needs)

Certainly there are many online options for teachers who are intent on enhancing their students' cultural understandings. Breaking news stories can be examined from varying perspectives. History lessons are brought to life through the use of digital photos and video clips. Interactive chat rooms allow students from different parts of the world to exchange thoughts and information—to virtually "talk" with each other. As we designed and built the Russia Project, we carefully structured and organized such current Web learning opportunities with the intent of moving students from being predominantly, and naturally, Amero-centric to becoming more informed, global citizens. Through engagement in timely, in-depth, and meaningful virtual learning experiences carefully leveled to meet individual needs and interests, we questioned whether or not the "real learning" result would encompass a more sophisticated world view. In addition to enhancing global perspectives, the Russia Project was undertaken to test a teaching and learning model that offered more than the usual "read the chapter and answer the questions" approach. We wanted to examine how early adolescents learn best and if that learning was dependent on meeting certain human needs, according to the James polarities. Would social studies content, if taught in a carefully crafted, technology-enhanced environment, support and meet the needs of all levels of student learning?

To develop global perspectives while meeting established student learning needs, we deemed it critical to employ strategies that would allow our adolescent participants to have input into what they were studying. In a seminal piece regarding middle grades curriculum development, John Arnold states that the key to building curriculum that empowers early adolescents to be responsible learners and active citizens is enabling them to ask questions and raise issues that are important to them.[6] Educator James Beane concurs. A hallmark of Beane's curriculum integration approach to teaching and learning is that students' Big Questions and Big Issues are the point at which curriculum development starts.[7] Further, Beane suggests that students: 1) research the Big Questions and Big Issues individually, partnered or in groups; 2) use a variety of approaches to study and learn; and 3) demonstrate learning by developing and sharing a project that discusses what was researched. The experienced teacher-researchers who developed and headed the Russia Project had used curriculum integration throughout their teaching careers and knew the power of the approach. It was decided that the project would be developed along the lines of curriculum integration and that the disciplines, no longer ends unto themselves, would become tools for research. The success of the project would be evaluated academically (with student learning assessed in a variety of formats) and in light of how well the project addressed James' needs polarities.

Designing virtual learning opportunities precludes knowing the individual personalities and interests of the students who will eventually participate. Accordingly, the first Big Question for our research team was, "What *are* the learners' needs and how can a curriculum be developed to reflect the highly individualized nature of learning when working virtually?" Our second Big Question was related to the first, "If we do not directly address both the group and individual needs of learners, can meaningful learning still take place?" To address the individual needs of students, our project featured: 1) multiple teaching approaches or academic delivery systems for the students' many styles of learning; 2) a variety of learning activities that enabled all levels of students to be engaged and participate; and 3) choices for students to demonstrate their learning outcomes. In developing this curriculum, we placed academic needs, and national, state, and local standards, within the framework of James' need polarities. The project was developed to enable academic success for all types of learners and, at the same time, provide social and emotional support through the quality of the experience.

Step 1—Inviting Participation: The Eager Traveler

The Russia Project is best described as an ambitious effort to offer North Carolina sixth-grade teachers and students a quality global learning experience while researching how early adolescents learn best. The project was publicized as such at state and national social studies and middle school conferences, through colleagues' list servs and on Web sites. In all, 5,000 students and 50 teachers in three countries on three continents participated.

Teachers were instructed to access the project Web site early in their academic school year at www.ncsu.edu/chass/extension/russia-nc6. Here they could register their classes to participate in the project. Each teacher filled out a short questionnaire regarding years of classroom experience, certification, teaching and learning beliefs, and experience using curriculum integration. If unfamiliar with curriculum integration, teachers were directed to Candy Beal's curriculum- integration Web site, www.ncsu.edu/chass/extension/ci. Teachers were also asked to poll their students for a class name to be used throughout the project.

North Carolina sixth-grade classes that had registered at the Web site would form the Russia Project home-based research group. North Carolina State University researchers would form the Russia Project traveling research team. Through a personal letter from Beal, teachers learned how to use the site and became familiar with the schedule of events for the project. Beal stressed the importance of each group's participation in the project and the research team's belief that support for teachers was critical in helping both teachers and students achieve success. She emphasized that the research team welcomed comments and questions and would offer help on any classroom problems or issues. What teachers were doing in their classrooms and how they were doing it was of utmost importance to the research team. Every effort was made to build the site to be user friendly and supportive of anticipated teacher needs. A Russia Project calendar was developed and put on the site to update participants on project postings and events. After registering their classes and choosing class names, teachers were told to be ready to receive the first of a series of weekly *Postcards From Russia*.

With respect to James' framework, the team developed initial contact with the goal of engaging students through an activity that would allow authentic conversations with peers and teachers, with a spirit of adventure. They would be participating in a research study, collaborative in nature, which would involve the "need to be needed." They learned that a major emphasis within the project would involve communication between American students and their Russian peers—that each side of the digital bridge about to be formed was of equal importance. Students would also be satisfying a level of their "need for intensity" through exploring a new culture in a unique way and by having significant contact with a new cohort of peers. Their "need for routine" would be satisfied in the careful structure of their participation and the assurance that certain activities would be repeated throughout the experience. The Russia Project team anticipated that, as students worked collaboratively, their "need to need" would also be addressed.

Step 2—Receiving Postcards From Russia: The Informed Traveler

The Russia Project team hoped to build support and excitement for their actual trip to Russia (to take place in late February) by sending participating classes weekly cyber postcards "from Russia" highlighting some aspect of Russian geography, life, culture, and/or history. These cards would be available on the site each Friday. The cards would be two screens in length. The first screen would contain a brilliant array of Beal's pictures from Russia featuring a theme of the week. The second screen would give a brief description and explain the importance of the pictures. At the end of the text, students would be asked to find the answer to a question. The answer would appear in the following week's card.

Twenty cards arrived between late September and mid February. One of the first cards introduced the card senders, two Russian girls who were students at Salem College in Winston Salem, North Carolina. Both were from St. Petersburg, Russia, and had participated in a musical exchange between the Transfiguration Children's Choir of St. Petersburg, Russia, and Ligon Middle School in Raleigh, North Carolina. This musical endeavor had been the brainchild of Beal's husband, and the choir's opportunity to come to America had given the girls a chance to visit and sing at Salem College. (Later, Beal's husband sponsored and arranged for two of the girls, Tanya and Lena, to attend Salem College.) Unbeknownst to the Russia Project's middle school participants, Tanya and Lena only lent their names to the postcards. The cards were written by Beal's husband, himself an experienced Russian traveler and historian. Portions of two early cards, which show a question posed and an answer given, are included in Appendix A.

Confident that the postcards would be well received because they were eye catching and written to appeal to early adolescents, the team moved on to develop other aspects of the site. As anticipated, response to the first postcard was positive. Release of the second postcard brought on the firestorm. Frantic emails and calls came from teachers whose children were amassing at classroom doors on Fridays to claim the sole computer so they would be the first to read the new postcard. Moreover, the students wanted time to research the question. Teachers asked the Russia Project team what they should do. Could extra credit be given for those who found the correct answer to the weekly question? The team gave numerous suggestions about how to capitalize on this learning opportunity, secretly thrilled that the postcards were generating such interest among participants.

A number of teacher participants shared unique methods for using the postcards. One teacher copied all of the postcards and posted them in the school hallway just outside of her room. She invited the entire school to research the questions with her students. Another teacher offered her students the opportunity to borrow a digital camera and prepare a local North Carolina postcard that could be sent over when the research team went to Russia. In general, the response was overwhelming. The team heard from parents, students, and teachers about the cards. One parent with recently adopted infants from Russia reported downloading "everything on the site" to share with her children when they were older. For now, she was becoming knowledgeable about their Russian heritage. As she was not a parent of a participating middle school team member, we wondered how she discovered our Web site. We later learned that the word had gone out to entire school communities and a middle school parent on the team had given her the project's URL.

While the postcards were being developed and sent out, the team was working on other aspects of the project. Team members were busy constructing the Russian unit that teachers would use in February; developing games that the students could download and play and preparing a second Web site (www.ncsu.edu/chass/extension/pskov2001) featuring Pskov, the Russian city the research team would visit. This new Web site would give students another research source for the Big Questions they might ask about Russia. The plan was for these Big Questions to be sent to the North Carolina State traveling research team. They, in turn, would take the Big Questions to Russia with them and then email answers provided by Russian participants in the project. While students stateside scoured the Web and checked out print research materials for information about their Big Questions and/or Big Issues, the team would send back the information they had obtained while in the field, the Russian field. And so, the team readied itself to receive the Big Questions about Russia. Optimistically they hoped for one hundred questions, expecting most to be fact-based in nature rather than reflective. How wrong this early line of thinking proved to be.

As the project made its way into North Carolina classrooms, the team took a critical look at what was serving to motivate these students. James' polarities once again helped us to articulate what we were experiencing. When given authentic choices and the opportunity to interact in a meaningful, relevant way, students *are* eager to learn. The Russia Project experience was something new and different, necessarily out of their routine in a way that provided intensity. The communications they were receiving were in real time and in their world; not coming from a static textbook that could only inform and not allow them to interact. Adolescent needs for both separateness and belonging were being addressed. They were part of a collaborative group effort to study a new culture—a culture that was simultaneously studying them. As well as working collaboratively, they also had opportunities to interact individually and independently. Everyone did not have to learn in lockstep with a peer. Further, the needs for myth/legend and fact were being addressed in the careful writing of the postcards. Students were learning stories and cultural legends as well as interesting facts about a new culture. The meeting of numerous needs enhanced their excitement for learning.

Step 3—Generating Big Questions: The Curious Traveler

At the outset of the project, the Russia Project team was concerned about asking for the participants' Big Questions (to drive the content of the Russian unit of study) at the busiest time of the school year,

December. Fortunately, rather than posing a problem, formulating the Big Questions provided a focus for both teachers and students before they left for the winter break. The first wave of questions began in early December and poured in until schools closed for the holidays. In all, five hundred questions were received. Most surprising was the level at which the questions were written. These were well-developed, thoughtful questions that went far beyond examination of discrete facts. It did not take the Russia Project team long to understand how the students had been able to write in-depth questions that sought reflective answers. By reading the postcards week after week, the students had developed a depth of knowledge regarding all things Russian. Later, teachers and students shared with the Russia Project team how they had been captured by the brilliant pictures and consequently drawn into the commentary. Students liked the fact that the cards were written in an exciting way, contained a puzzler at the end, and were only one page in length (in keeping with the text-brevity standard of Web content).

Teachers reminded the students that the questions they identified and sent to the North Carolina State research team would be the theme of their study of Russia. By giving the students a chance to ask about issues that interested them, teachers guaranteed that the students would be motivated to research for answers. One teacher participant pointed out that she would teach about Russia, in general; thus providing the context for each of the student-designed questions. The students' work would be narrower in focus, and they would develop culminating projects to share with others. Students liked the fact that they could select an area of study that interested them, work alone or with others, and use many different kinds of research methods. They took their charge very seriously to become experts in their field and to develop a project to share with parents and students. Later, most stated that they believed this to be their "achievement of excellence" in the sixth grade.

At this point, we realized the project would address many of the adolescent needs identified by James recursively, moving in and out of the need polarities depending on the tasks involved. The opportunity for independence and cooperation, for needing and being needed, for routine and intensity, for myth and fact would deepen throughout the project experience, even when the needs would be manifested in different ways. We also began to see that certain polarities weren't being addressed, which was not unforeseen. No single project can necessarily meet all needs, nor should it. For example, the needs for stillness and physical activity were not directly addressed by the project. That made sense to us as educators, and we understood that certain needs could be met in other ways. Most of all, we were encouraged that the project *did* meet most of the needs James had identified in the 1980s—long before technology had entered most classrooms.

Step 4—Packing and Giving: The Thoughtful Traveler

As the Big Questions arrived, the Russia Project team vetted for duplicates. Three hundred questions made the final research team's list. While delighted with the response, we wondered how we could possibly reply to all of the questions. There were sixteen travelers and only three partial days of computer time in Russia. Beal, a long-time social studies teacher and Russian historian, knew the answers to more than half of the questions (particularly those that were factual in nature) and began to answer these while still in North Carolina. When any answer was in doubt, she checked with her sources in Russia. Her responses were stored and made ready to be uploaded to the site while the research team was in Russia.

As the research team prepared to make its transcontinental journey, the winter season arrived. This gave the postcard developers a great opportunity to feature scenes of a Russian winter. These scenes gave the students a glimpse of what would be awaiting the team when they arrived in Pskov, Russia. When the traveling research team requested suggestions from the students regarding what to pack for Russia, the answers were clear: long underwear, hats, mittens, woolen sweaters—all the things that most North Carolinians had long since stored in the attic or sent to northern relatives.

To show the students that the traveling team would honor their words, members of the research team uploaded pictures of themselves packing the items student participants had suggested. The students were also asked to offer help regarding what the researchers might bring as gifts for their host families. The suggestions were thoughtful and focused mainly on food items and products indigenous to North

Carolina. Also included in the list of things to bring were items currently popular with adolescents: *Harry Potter* books, cosmetics, stickers, and CDs. An additional feature of the project was that the cultural understanding was to go two ways. The Russian students would learn about North Carolina's culture through books and travelers' gifts as the North Carolina home-based research team students poured over the information sent back from Russia.

It should be mentioned that specific classes asked the travelers to deliver actual items they had made for the students in Russia. One group of middle school students from Dillard Drive Middle School, under the direction of their teacher, Natalie Bates, prepared valentines. In the center of each card was an American answer to the question the student had asked of the Russian children. A dozen packets of valentines provided hours of enjoyment for Russian students of all ages. To make the person-to-person connection with a Russian student, North Carolina State student teachers (some of whom were part of the traveling research team) had their own middle school students prepare getting-to-know-you cards. These index cards contained information on, and a photograph of, an American student. The cards were taken to Russia and given to students who attended School 15 in Pskov. In response, Russian students enthusiastically prepared similar cards for their new American acquaintances.

This activity clearly spoke to the needs of belonging and for affecting the "outer world." Students were creating something to be sent out of their culture into a new culture. They knew, for a fact, that what they constructed would reach the eyes and hands of students across the world. They also knew that they would receive feedback. By affecting their outer world through contact with new friends representing another culture, students found their "inner world" being affected as well. Russian peers were no longer faces they might encounter on a news program or in a textbook photograph. They were now in direct contact and appreciating similarities, while also honoring differences, between their American culture and the culture of their Russian peers.

Step 5—Designing Projects: The Creative Traveler

Teachers taught the Russia unit (available on the project Web site) before, during, and after the actual trip. The unit was of high interest for the students because it was developed around the students' Big Questions and Issues. The questions drove the unit. In teaching the unit, most teachers reported giving just enough information on the topics of interest identified by the students to provide the context for the students' more narrowly-framed research. Curriculum integration was occurring quite naturally. A major concern about using the curriculum integration approach for teaching and learning is determining how one can base a study on students' interests and still teach material prescribed by the standard course of study (SCOS). Two points can be made regarding this concern. First, if requirements of the SCOS are the sole purpose for teaching a topic and student interest is not a consideration in the process, results are likely to be less successful. Second, a skillful teacher who is familiar with the SCOS and knowledgeable of her subject area can weave the two together. In the case of the Russia Project, the students' questions required information that directly addressed what was to be taught about Russia to satisfy the SCOS. It was a win-win situation for everyone. Students were finding answers to the questions that involved material the teachers would have to teach anyway. Honoring student questions empowered the students to become engaged and motivated them to stay engaged in their learning.

While the unit was successful, the projects were the highlight of the entire experience. They were fashioned around the items the students researched, and provided the culminating activity for the Russia unit of study. Teachers taught the unit in concert with students who were "postholing" or digging deeply for information on one aspect of the unit. Students or groups of students researched their Big Questions and gathered information that was then presented in project form. Each project provided greater depth of knowledge for whole-class study of the topic. The beauty of the research project approach is that it allows for differentiated instruction.

Tomlinson's research on best approaches for classroom instruction for heterogeneously grouped students found that by providing a variety of student groupings, different assignment options, and a multitude of ways to demonstrate learning, students are able to work to their strengths and subsequently

achieve more.[8] In most cases, students who worked in groups could opt in or out of the group depending on their specific tasks. Teachers operating within block schedules (ninety or more minutes of instructional time) chose to teach for thirty minutes and allow students to research for sixty minutes. As teachers taught about Russia, they could point out areas being addressed by student projects. While the students met to do research, the teacher circulated around the room, assessing and critiquing ongoing work, and offering suggestions for further ways to expand individual studies.

Student choice and class-by-class variety was reflected in the projects. For those classes that did not have the luxury of block scheduling, many projects were done at home with the guidance of parents. Teachers who taught traditional periods (i.e., fifty minutes) varied teaching and research days. While both formal and informal assessment was part of the ongoing process, all involved directed their efforts toward the end of the study when the students would present their projects.

While the Big Questions were being researched and the projects being developed, the teacher was teaching the Russia unit and the traveling research team was bound for Russia. Two days of travel brought the travelers to their destination. They immediately began interviewing and sending back information. Home-based research teams found the time difference fascinating. They opened emails at 9:00 a.m. in Raleigh that had been sent at 4:00 p.m. on the same day from Pskov. They were reading accounts of a day already finished while that same day for them had just begun.

Because this project was also the opportunity for the research team to visit Russian schools, the traveling teachers and student teachers readied themselves for observations and teaching. Each American participant taught a lesson to an English-speaking Russian class. The lessons varied from learning about the culture of coastal North Carolina through its beach music, to examining the lives and works of American authors. One pair of researchers brought over an art project for Russian students to complete. Each Russian student received a two-inch square piece of the map of North Carolina and was to enlarge her piece to ten times its size. After the pieces had been enlarged, they were put together to make an enormous wall map of North Carolina. In addition to the geography of North Carolina, the map featured pictures of products, historic sites, and facts about the state. At the end of the art project, the map was hung in the main hallway of the school.

Each traveler lived with a Russian family and got to experience how that family lived its life. They listened to family stories that had been passed down from generation to generation. These included accounts of the early years of Czarist rule and the economic hardships that that time and the Communist era had imposed on the people. The family stories formed a foundation for better appreciating and understanding the joys and struggles of the average Russian citizen as the country moves to a free market economy with greater personal rights and opportunities. Many of those stories provided answers to Big Questions and Big Issues.

With respect to the James connection, we continued to see the richness of the experience in terms of how many student needs were being met. An area of concern for James was the centrality of the arts in meaningful education. Because of what the arts can provide, in terms of enriching the lives of students, James found its absence from many classrooms disturbing. The artistic portion of the Russia Project, the culminating research project, allowed for students' creativity and was essential, both according to James' view and in our estimation as well. The needs previously mentioned continued to be met and the added dimension of creativity (which involves risk and thus addresses intensity) escalated involvement and commitment. Another important outcome of the project was that it was given considerable time to grow and develop in the various classes. How often do we frustrate students by rushing them through content and process? The model of a curriculum integration project that allows time to proceed at an authentic pace is crucial.

Step 6—Presenting Projects: The Reflective Traveler

Throughout the Russia Project, students and teachers used study guides, games, and quizzes to foster learning. Students' scores on assessment measures related to the content they were exploring reflected

considerable growth. When interviewed about the project, students reported being excited about their deepening knowledge base and increased global awareness.

To facilitate assessment, American teachers prepared rubrics that helped guide students in their study of Big Question responses. Final project requirements were clearly spelled out and enabled students to tailor those projects to include essential elements needed for increased cultural understanding. The projects were varied and included: reports on cultural issues, handmade maps and flags that spoke to geography and political change, Russian crafts, lacquer boxes, balalaikas, magical eggs and matruska dolls, creatively written folk tales, scale models of onion-domed cathedrals, choreographed dances, and personal histories of famous composers and writers. In each case, the students' projects had been researched for facts and concluded with reflective responses to the initiating Big Questions or Big Issues.

Many of the teachers asked their students to keep journals throughout the course of the unit and project work. Several times individual classes were mentioned or shown on the Web site: one class making valentines to be sent to Russia and another class hosting a Russian tasting party. Final projects were posted on the Web site and students were thrilled at the international publicity. Their journals spoke of the feeling of being special because "the whole world was watching their class" as it participated in the Russia Project. Students also noted how much they had learned and expressed a desire to travel to Russia to meet its "friendly people and see its cultural treasures."

Students were concerned with presenting projects that would be seen as "worthy" by their peers. They researched print texts, interviewed recent immigrants, and surfed the Web for up-to-the-minute information. For some groups and individuals, completing the project became a race against time. Some group members were frustrated with laggards in the groups. Others pitched in to help those who needed support. Journals talked about "being nervous, wondering how the presentation would go," but mostly about being proud of the final product. Many reported the weight of "being responsible for another's understanding of the Russian culture." Teachers placed projects in the media centers so their whole school could share in the knowledge gained. Parents were invited to school to examine the exhibits. Some schools chose to participate in the ultimate sharing, attending the Global Connections Conference.

Several schools came together in May to share their Russia Project experiences at the Global Connection Conference, hosted by Bates and her students. Students brought their projects to Dillard Drive Middle School and shared stories about their experiences during the Russia Project. They also heard from the North Carolina State traveling research team as team members told stories about the trip. Students had the opportunity to dress up in the garb that the travelers wore to fend off the Russian winter. Others played the balalaikas or tried to open, arrange, and count the many layers of the nesting dolls. The middle school participants remarked about how much they had enjoyed the postcards that taught them about Russia. They appreciated being introduced to the team via the postcards and felt valued by having the chance to offer help and suggestions for the trip. Many students reported on opening the question and answer site, and commented that the research helped them know more about daily Russian life, especially the life of children their own age.

The culminating activity, the Global Connection Conference, was tied to the James' framework in many ways. It offered recognition and verification that what teachers and students had participated in through their involvement in the Russia Project was both authentic and important. The students once again took risks (the need for intensity) by presenting their projects to new audiences. They were part of a collaborative class effort, yet produced significant artifacts on their own. Their reflections allowed them to address the need to move inward, balancing the business of "affecting the outer world" through their sharing of the final projects. It could also be argued that participating in the conference supported each student's need for physical activity. They left their buildings, traveled, and entered a new environment, which they had to navigate in order to share their work.

Table 1
The Russia Project and Charity James: Digital Learning and Adolescent Needs

Russia Project—The Process	**Needs Polarities—The Match**

1—Inviting Participation: The Eager Traveler	Need to Need Need for Belonging
2—Receiving Postcards From Russia: The Informed Traveler	Need for Routine Need for Fact
3—Generating Big Questions: The Curious Traveler	Need for Fact Need for Myth and Legend Need to Move Inward
4—Packing and Giving: The Thoughtful Traveler	Need to Affect the Outer World
5—Designing Projects: The Creative Traveler	Need to Need Need to be Needed Need for Intensity Need for Routine Need for Myth & Legend Need for Fact Need for Separateness Need for Belonging
6: Presenting Projects: The Reflective Traveler	Need for Intensity Need for Separateness Need for Belonging Need to Move Inward Need to Affect the Outer World

Conclusion

Although the real-time Russia Project ended in May 2002, the project's Web site may still be accessed and utilized. The 2002 trip can still be taken virtually. This is one of the benefits of technology-enhanced learning. All of the postcards are loaded and the teacher may decide how she wants to introduce them. The only facet of the project that cannot be repeated involves having the North Carolina State research team available for investigation of students' Big Questions and Issues. However, teachers can still have their students formulate Big Questions and Big Issues for research. Students may open other Beal Web sites to research topics and can access the Q&A section of the original Web site to see if their question has already been asked and answered. In addition, Beal is available to answer any questions for which answers cannot be found.

After the Global Connections Conference, Beal made a return trip to Russia. In January 2004, she traveled to St. Petersburg to gather video footage of Russian children answering many of the Big Questions and addressing the Big Issues posed by the American students. In April 2004, she filmed American children asking the Big Questions and raising the Big Issues. These two films are being merged to simulate a global conversation. The film will also have parts of the Web site, interviews with Beal and Dr. James Clark, her longtime research collaborator, and footage from her Smolensk, Russia trip. Funding, however, has been scarce for the Russia Project. Clark, the former Head of Humanities Extension at North Carolina State University, supported the trips to Russia in an effort to have material for the construction of Web sites appropriate for North Carolina middle school students and their teachers. Unfortunately, Humanities Extension has been discontinued, and therefore support for the building of other digital bridges is gone. Currently, a North Carolina State University senior seminar film class, under the direction of Dr. Jim Alchediak, is creating the final video *A Cross Cultural Conversation for Global Understanding.* Beal will seek funding to reproduce the video and provide it to sixth grades across North Carolina.

At the end of such innovative educational endeavors as the Russia Project, we find ourselves asking, "Were we successful?" Did we accomplish what we set out to do? Did we determine how students learn best and in the process see the connection between meeting students' needs and enabling them to achieve success? And, did we help move 5,000 students a little further along on the continuum of global

awareness? Does using the curriculum integration approach to learning set up all levels of students for success?

Russia Project data from teachers and students–journals entries, emails, project reports and descriptions, questionnaires, quiz and test scores–spoke to the need for the construction of digital bridges designed to specifically address the needs of individual students. Teachers suggested, and students concurred, that initially a digital bridge enabling a crossover to another culture will hook students, however after the bells and whistles are silenced, the students must have made a connection to the activity that fulfills a human need. Simply including technology to enhance motivation and engagement does not necessarily meet adolescent learning needs.

The Russia Project team recognized that a danger in building a digital bridge to and about Russia was that the bridge represented a current, American perspective of Russia. By getting responses from Russian citizens, the Russia Project team tried to authenticate the bridge. The video, though simple in design, attempted to simulate a conversation. Beal believed that the video went beyond print to enable American students to see and hear the Russian schoolchildren addressing the Big Questions and Big Issues, as well as asking some of their own. A second installment in the conversation is being planned for the next senior film seminar class. That installment will feature the Russian students asking the questions and the American children answering.

We believe that digital bridges are challenging but worthwhile edifices to construct. The Russia Project findings indicate that this experience energized both the teachers and students. Student test scores rose and classroom behavior improved because students were motivated to explore and answer their own questions. Project presentations and conversations among students and teachers at the Global Connections Conference indicated that students felt informed and prepared to travel to Russia. All agreed that they were much more interested in keeping up with the news abroad, especially in regard to President Putin and Russia.

We believe that the Russia Project demonstrated that the addition of technology with its capacity for global interactions and subsequent enhancement of cultural understandings actually *can* address learners' needs, but the project must be built with those needs in mind. We concluded the project with the firm conviction that James indeed captured the essential aspects of early adolescence through her need polarities framework. With the heart of a teacher and the mind of a researcher, James helped us appreciate and understand that by meeting adolescent needs, we can go far in encouraging globally conscious and conscientious citizens. These are solid research findings that pertain to working with students in any arena—whether in the classroom or in cyberspace.

NOTES

1. Marlene Asselin, "Literacy and Technology," *Teacher Librarian* 28, no. 3 (2001): 49.

2. Charity James, *Beyond Customs: An Educator's Journey* (Flemington, N. J.: Agathon Press, 1974).

3. Ibid.

4. Eric Erikson, *Identity: Youth and Crisis* (New York: Norton Press, 1968); Lev Vygotsky, *Thought and Language* (Cambridge: Massachusetts Institute of Technology Press, 1986); Carol Gilligan, *In a Different Voice, Psychological Theory and Women's Development* (Cambridge: Harvard University Press, 1982); James Garbarino, *Adolescent Development, An Ecological Perspective* (Columbus, Ohio: Charles Merrill Publishing Company, 1985); Urie Bronfenbrenner, "Alienation and the Four Worlds of Childhood," *Phi Delta Kappan* 67, no. 2 (1986): 430-36.

5. Charity James, *YoungLives at Stake: A Reappraisal of Secondary School* (London: Collins Press, 1986).

6. John Arnold, "A Curriculum to Empower Young Adolescents" (Paper presented at the National Middle School Association Conference, 1991).

7. James Beane, *Curriculum Integration: Designing the Core of Democratic Education* (New York: Teacher's College Press, 1997).

8. Carol Tomlinson, *How to Differentiate Instruction in Mixed Ability Classrooms,* 2nd ed. (Alexandria, Va.: Association for Supervision and Curriculum Development, 2001).

APPENDIX A

Postcards From Russia

Postcard 1 (September 20)

Each week we'll leave you with a question to think about. This week's question is about this picture of a church in our home city of St. Petersburg. Isn't it beautiful? It was built between 1883 and 1907 and, even though that's pretty old, it's meant to look like even older Russian churches. Later on we'll show you another Russian church that looks something like this one but was built in 1555! The church pictured here has two names. Its formal name is Church of the Resurrection but everyone calls it the Church on the Spilled Blood. Our question to you is why do you think it has that second name? We'll give you the answer next week. We are always glad to tell people about our home and its history so we're looking forward to sending Postcards From Russia. We hope you will enjoy them too.

Da sveedanya (good-bye) for now,
Tanya and Lena

Postcard 2 (September 27)

Kah dyla? How are you? We hope you've had a good week. If you read our last postcard, we hope you had fun finding the answer to our question about the Church on the Spilled Blood. Did you find the answer? Or maybe you made a guess?

Well, the Church of the Spilled Blood (also known as the Church of the Resurrection) was built on the exact spot where Czar Alexander II was murdered, so now you see where the spilled blood came from. His son, Czar Alexander III, had the church built as a memorial. The altar was built in the exact spot where his father's blood had stained the cobblestones in the street. After the Revolution of 1917, the Soviet government used the church as a warehouse (can you believe that?), but in the last ten years it has been beautifully restored and now everyone can go inside and see all the beautiful mosaics.