

An Executive Summary of  
**Student Perceptions of Concomitant Learnings of EAST Lab  
in a Small, Rural Arkansas School District**

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Across the nation, schools are accepting the challenge to create learning environments that meet the demands of higher test scores, more innovative instruction, and a stronger

foundation of educational technology. These include several technology-based, project-based model programs where strong similarities of student cognitive and affective growth are evident. One such program is Project EAST, an acronym for Environmental and Spatial Technology.

Over the years since its inception, subtle but important changes in the study habits and value systems of the participants have been apparent in EAST Lab. Students who previously shunned oral presentations became more willing to speak in front of groups; others began to take the initiative in teaching new computer programs in which they have been trained. Moreover, students seemed to command a broader understanding of the way they individually learned best. Was it possible that these changes transferred to other classes and other parts of a student's life, including the college and career of the future? From these observations, a research problem for this study was formulated: *What positive changes do technological-rich environments of problem-based learning foster in participating students, and what are the factors of the classroom environment that lead to these changes?*

Qualitative researchers usually work with small samples of people who are intimately involved with the events studied (Miles & Huberman, 1994). This study used fourteen male and female students between the ages of 14 and 20, nine of which were enrolled in the EAST Lab course during the school year 2003-2004. The other five subjects were college students who had been previously enrolled in the Drew Central EAST Lab in previous years. The problem in this study was to investigate the evidence of concomitant learnings that are a result of a technology-rich, project-based learning environment, the empowerment of the student by these learnings, and the worth of these learnings in better preparing high school students for college success. For purposes of this study, concomitant learnings are sideline learnings--possibly the most significant of all the determinants of character--which include personal attitudes toward one's

self, teachers, or peers (Kilpatrick, 1925, 1951).

In this study, individual interviews of approximately forty-five minutes to one hour each were recorded on a cassette recorder, with permission of the participants. The interviews began in October 2003 and continued through December 2003, until a saturation point had been reached. After all the interviews had been completed, student responses were transcribed into written narratives to look for emerging themes of the EAST Lab experience. The research questions compared and contrasted the learning environments of all the students' classes, the students' affective and cognitive knowledge gained in these environments, and the opinions of the students concerning the influence of the EAST environment on their preparation for college. To formulate conclusions, individual student interviews were analyzed for patterns of thought.

Through their initial comparison of other high school classes and EAST, it was evident that the students felt that the environment in EAST Lab was very unique, with its emphasis on hands-on, active, self-directed learning using hi-tech multi-media tools. The adult serves only as a coach and a leader, not a teacher, for the students. With a low threshold of stress, the comfortable environment allowed adequate time for students to explore new ideas, tools, and abilities they had not realized they had. This strongly supports the research of Finnigan (1999), whose phenomenological study showed that when asked to accept responsibility for learning, share decision-making, share authority, and negotiate for themselves, students willingly did so, as long as the teachers provided a safe environment and remained in the role of an authority figure.

During the initial coding, twenty themes were found in the responses. When the similar topics were clustered, however, four major concepts were formed. Interpersonal skills, one of

the groups of concepts, included cooperation in group work, collaboration, accepting others' opinions, and listening. A few introverted participants related that they preferred independent projects to working in groups. But felt, however, that they had learned something from the team efforts of EAST.

All the students felt they were respectful to others, because of both the EAST group work and their parents. Many of the participants commented, however, that respect must be earned, and that they must be given respect in order to give it back to both peers and adults alike. When the students were able to teach others in EAST, they believed their abilities were respected. When they asked for help from others, they showed respect for the other person's knowledge.

Leadership was a by-product of collaborative learning, since leaders naturally emerge in a group setting. EAST classes are not limited to the gifted students, who often are the class leaders; therefore, students of average and below-average intellectual abilities found that they, too, could be leaders in that learning environment.

A popular topic of the interviews was the subject of civic and community involvement. Students were animated and excited in describing their projects in EAST and their possible impact to the community. Some of the students recounted personal projects they had undertaken that had made a difference in the lives of others and the effect these projects had on their becoming personally involved. The majority of the students, however, focused solely on their EAST projects, since these were the first or only encounters for community involvement by these adolescents.

The area of intrapersonal skills was another category of concomitant learnings that were present in the interviews. All the students commented on their growth of self-esteem and self-confidence through their EAST Lab experience, including their newfound ability for public

speaking and teaching. Although emotional maturity and personal worthiness were not specifically mentioned, their essence was described by the participants. Metacognitive strategies were mentioned repeatedly by the students in their discussions of career awareness and goals, their learning styles, and their self-awareness.

Overwhelmingly, the participants agreed that the learnings in EAST Lab better prepared them for the maturity level that college demands. All the students interviewed, no matter the age, were concerned with their future plans, although some of the younger ones had not finalized their career choice. Several mentioned that EAST had given them a lab in which to experiment with software specific to some career areas, they did not always like what they had experienced. Hence, they were able to redirect their sights on other career avenues without wasting valuable time going down wrong paths of possible but mismatched jobs. Their increased ability in public speaking was mentioned repeatedly as a skill learned in EAST that had been exceptionally valuable in other classes and, for some, in their college work.

Lifelong learner skills were highly evident in the answers of the interviewees. Eleven of the participants commented on self-directed learning taking place in EAST and the frustration they felt when initially learning this skill. The college students offered illustrations of how this learning strategy helped to create a seamless transition to higher learning. Responsibility for learning was discussed in relation to learning, as well as in school clubs and government, giving a broader perspective of how this character trait manifests itself in the life of a student.

Three of the students mentioned the ability to ask for help, which seemed to be the most difficult for students to master. Asking for help from a peer was viewed as a negatively for some; they perceived that having limited knowledge in specific areas weakened their self-confidence in peer settings. Initially viewed as an humbling experience for most of the students,

it soon became a learning tool that was utilized in both the giving and the receiving of information.

When discussing motivation to learn, the students tended to give more lengthy responses and more illustrations than other attributes. Ten of the students talked excitedly about what motivates them and why the EAST experience was a perfect setting for allowing motivation to grow. Most of them commented that their motivation to learn was directly related to the climate of the class in which they were enrolled. If they didn't like the subject, they weren't motivated in that particular class. If they enjoyed the class, however, they willingly tackled the task at hand.

Fear of failure was mentioned several times as a deterrent to learning, and rightly so. If a student has previously experienced failure in a particular class, he or she must combat the anxiety that accompanies that failure until subsequent success has been achieved. Service projects were mentioned as motivators, since helping others made the students feel good about themselves.

Creative and critical thinking strategies were also discussed. Students were aware of their problem-solving steps and mentioned that EAST Lab projects involved both creativity and critical effort in selecting projects in the EAST class, in learning specific software applications, and in designing strategies for solving the problem at hand.

In the analysis of the interviews of the participants, the following conclusions were formulated. It was found that interpersonal skills, intrapersonal skills, lifelong learning skills, and college transition skills are learned concomitantly in the EAST Lab classroom. These learnings are transferred to other classes and situations in the lives of the students, motivating more responsibility by the students in their academic lives. Because of the students'

empowerment by these learnings, they are better prepared for their college study.

The findings in this study show evidence that EAST Lab is valuable as a model learning environment, through its incorporation of a variety of learning modalities, technology-based learning, and project-based learning. Utilizing this study as a guide, other classroom situations may be modified and transformed so that more students are motivated to learn by providing different ways of learning. Perhaps the most useful finding of the study is that the students' perceptions of their preferred learning environment were overwhelmingly patterned on that of EAST Lab. There were no outliers in this area.

Educational theorists and practitioners may utilize the concepts found in EAST to create an all-school environment of hands-on learning that relates to identity, problem-solving, interaction, and inquiry. According to Stoddard (1992), a person becomes a competent participant in society when he or she achieves success in the areas of self-concept, communicating with compassion, and autonomous learning. The integrity of our society depends of the strength of character of its citizens, and those who develop all these areas will be the most valuable to society. EAST Lab is a vehicle for such affective learning to occur.

Another interesting point evident in the study was that EAST is open to *all* students. The students individually gravitate to the technological tools they feel capable of using and learn to solve problems with those tools. They are able to better understand their strengths and weaknesses and particular careers which champion the specific skills they possess. This, of course, is in direct alignment with the federal mantra that "No Child [is] Left Behind."

With the focus on school improvement on the local, state, and federal level, educators must discover or create new ways to motivate learning so that students will stay in school and even continue their education after matriculation from high school. It is evident from this study

that EAST Lab provides the culture for such motivation to occur.

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