

Learning problem:

Principal Howard Leland is greatly concerned about the success of his school programs in preparing students for the economic challenges of life after graduation. In conversations with former graduates, Principal Leland has seen an alarming pattern of financial failure. Struggling to handle the many adult responsibilities of life, many students from Edgewater High School are finding themselves either below poverty level or in massive debt within five years of graduation. Many students have indicated problems with credit card debt, college bills, overspending, and lack of savings for unexpected expenses. Based on these testimonies, Principal Leland decides that this may indicate a problem in the Edgewater High School curriculum. He contacts a group of educational specialist to examine the extent and cause of the problem.

Edgewater High School is located in an urban setting, and the student body is a mix of both cultural and socioeconomic backgrounds. The school offers four ESL tracks, and in total, the ESL programs represent 17% of the school population. While there is an accelerated program located within the school, many of the other students do not continue on to higher education due to lack of resources, ability, or interest. Nearly 10% of students come from families living below the poverty line, and more than 60% of the student body qualifies for the free lunch program. From the principal's observations, the students that seem to end up in the worst financial situations are low-level learners and low self-esteem students at the school. It is his understanding that these students do not have the resources to successfully remove themselves from bad financial standing. More strikingly, these students can rarely offer Principal Leland reasons for their situations.

Principal Leland recognizes that the resources available to his teachers are limited. The math textbooks used for the Edgewater High School math curriculum are mainly drill and practice books. Principal Leland believes the classroom environment is apparently creating an atmosphere where these

students are unmotivated to learn and do not transfer the knowledge they acquire because they have not been exposed to creative methods of math instruction. It is assumed that many students, particularly the low-level learners, tend to view themselves as incapable of basic math problem solving.

Theoretical Background:

According to the situative approach, students' learning is greatly affected by not only the individual characteristics of the learner, but also by the community and its members that surround the learner. Therefore, it is necessary to design a learning environment designed to take advantage of the strongest elements of the situative perspective, allowing students to construct their own knowledge through a collaborative, practical, contextualized project. In turn, this type of design will enable learners to transfer their new knowledge to other problem-solving issues. They should be better equipped to address financial challenges in their own lives as well as be more prepared to brainstorm and make important, informed decisions with real consequences.

The new learning environment is proposed, it should frame thinking in "a particular context of intentions, social partners and tools," (Handbook of Educational Psychology, 20). Finally, the project should help students develop strong epistemic identities by giving them personal responsibility for their learning. Each student will be accountable to the whole, and their motivation will be inextricably linked to their identity within the community. They will therefore be responsible for what they learn, how they learn it, and evaluating the group's hypotheses, evidence and arguments.

Goal of Study:

The goal of this study is to enable us to create a principled design of a new learning environment to better prepare students for the financial demands they will encounter following graduation from Edgewater High School. In order to

properly design this environment we need to thoroughly investigate the current status of the community in which students interact.

Needs Analysis:

Important components of the learning community which we will investigate will include the following: resources available to the students, family and cultural background, language skills, prior knowledge of math skills and concepts, learning and peer group identities and the school's current curriculum.

Resources: We will evaluate the material systems (concrete exemplifications) available to students within Edgewater High School. These resources include student access to subject domain experts as well as up-to-date books and new technology – which may include budgeting programs on computers.

How to Test: Resources will be examined through student interviews, inventory of the library resources and other school facilities. We will also investigate the current and future school budget – how will the school break down its financial priorities – and finally, resources available in the classrooms (computers, newspapers, magazines).

p. Background of students (home support) - parents living paycheck to paycheck? Demographics of the student body, interaction with parents to observe budgeting practices and how much do parents talk to them about it. How much do parents engage in political discussions with the child (ie: government support or subsidies)? Do students have allowances? How do students buy things they want to buy? Do parents just give them money? What is the format for their spending? Do students have jobs to earn their money? How do you use credit cards – is the family in credit card debt? Do students' families rent vs. own? Are the students living with single parent families? Is there extraneous support (ie: foodstamps) for those families?

HOW TO TEST: student interviews and questionnaires to parents or attempt to get credit reports from parents.

p. Language skills (conversational skills/vocabulary) – can the student learn effectively in English? What is the student’s financial vocabulary?

HOW TO TEST: pre-test for sampled students – ie: what is a budget

k. Prior knowledge (of math, specifically) – can the student execute basic math problems and financial concepts? *How much is the student concept of money related to the family status/situation?*

HOW TO TEST: pre-testing for sampled students

k. Identities (where they see themselves within their peer group/subject domain)

HOW TO TEST: interviews with students, observations of classroom interaction in the math classes.

Current curriculum and teaching practices: We will evaluate the current mathematics curriculum that is being taught at Edgewater High School. We will evaluate against state-wide standards to see how the current curriculum at Edgewater compares to the rest of the districts. We will also investigate the teaching practices of the instructors in the mathematics classrooms to determine how effective their teaching styles and practices are, and what kind of influence they might be having on the students’ performance.

HOW TO TEST: The curriculum and practices will be examined using on-site observations of the instructors in their classrooms. We will measure curriculum standards (ie: what specific grade levels are accomplishing in the mathematics department at other institutions) and compare Edgewater’s program to see if the students are learning the standard material at the proper grade level. We will consequently observe teaching practices in the classrooms in order to determine whether performance of students might not be directly related to the teacher’s methods of instruction.

Suggested Solution:

Through an investigation of the above needs, we intend to develop an understanding of the present learning environment. Once we establish the distribution of knowledge in the community, we will be better equipped to recommend a specific curriculum designed to prepare students for real-world financial situations.

Based on Principal Leland's initial assumptions, we would initially propose a curriculum based on the situative theory of learning. He concurred that the primary goal should be to engage students in a learning environment to promote understanding of what happens after graduation. It must involve real world experiences. Ideally, it should be a business-based environment in which business decisions, budgeting decisions, other financial tasks, ethical decisions, negotiation skills are developed. The skills and knowledge can then be transferred to other situations in the students' lives.

The prospective design would bring these real-world work problems into the classroom setting. Students would create a team 'business' where all aspects of business management would be addressed. The group would have to come up with a budget to run their business. They would be required to seek other forms of investment (where could they borrow money if more was needed) and determine how to make a 'profit' on their business. For example, the team would be responsible for keeping the business 'checkbook' and must allocate amounts to certain groups according to priority, as well as monitor how much money is made in profits or how much money is 'in the red'. Students would have access to expert advice from industry professionals in order to manage their classroom business.

The project provides the advantage of divvying up responsibilities for asking questions and offering explanations as well as evaluation between the various groups in the class and among the individual students. Students who often play more passive roles in the formal classroom setting have the opportunity to make

significant decisions, taking them out of their traditional peer group hierarchy. That, in turn, transforms the learners into teachers, and often the teachers into learners, as they develop together business principles that conform to the students' standards. Their shared goal of creating a fiscally strong company also enhances their motivation, giving them a practical reason to succeed. Students -- all varieties of students -- must explain and defend their ideas for the business and their solutions for how to increase profits, rather than depending on a right and wrong answer. The project, therefore, breaks the stereotypes of traditional education: that answers should come quickly, that there are always correct answers, that the teacher knows the best method. Students here can invent their own procedures because they have developed a means for evaluating each other's work and understanding what makes up a strong argument. They are, however, still required to know the formal symbols and notations of mathematics (these are introduced right from the beginning of the project when considering the company's balance sheet and finances).