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DIFFERENTIATED INSTRUCTION INFORMED BY AN IN-DEPTH DEMOGRAPHIC SURVEY

Beyond UPASS: Linking Formative With Summative Evaluations is a two-year project funded by the Federal Dissemination Grant. The purpose of this project is to examine multiple dimensions of learners and connect assessments with instructional strategies that promote increased student academic achievement. The project consists of three components that reach “beyond UPASS”. This is the final report for one of the components: *Differentiated instruction informed by an in-depth demographic survey*. Team lead for this project component is Janna Martin, M.Ed., Social Studies teacher at AMES.

Differentiated Instruction is a teaching theory based on the premise that instructional approaches should vary and be adapted in relation to individual and diverse students in classrooms (Hall 2002). The Academy for Math, Engineering, and Science (AMES) celebrates the increasing diversity of our study body as we continue to recruit and enroll our target population. Our goal is to provide every student with a personalized and rigorous education, and this can only be accomplished when teaching methods are tailored to students’ needs. This survey was borne out of the desire to better understand our students so that we could utilize teaching strategies relevant to our population.

Methodology

This survey was distributed to all AMES students, totaling 374, enrolled during Term 4 of the 2005 -2006 academic year, and was administered during the last period of the day on Monday April 3, 2006 (B Day) and Tuesday, April 4, 2006 (A Day). All teachers with a B9 or A0 period

were provided with a manila envelope that included a student roll for that period and the corresponding number of surveys. Faculty members were instructed to document the names of absent students, and these students were offered the opportunity to participate in the survey on an alternate day. Teachers were instructed to inform students that participation in the survey was voluntary and that their responses would remain anonymous and confidential. They were also asked to inform the students that the survey results would be used to improve teaching practices for the following school year. The survey instructions read:

Dear AMES student:

As part of our ongoing effort to better the needs of our student body, we are asking you to complete this survey. It is designed to help us determine the demographic composition of AMES. Please answer honestly; all responses will remain anonymous.

Each teacher returned the completed surveys and class roll in the original manila envelopes to the investigator. A list of the absent students was generated (many of whom were juniors with off-campus internships at the end of the day and seniors), and these students were offered the opportunity to participate during other classes. An additional 30 surveys were gathered in this manner.

Data was initially entered into an Excel spreadsheet. However, after several weeks and many hours, it became apparent that this approach was not time or cost effective. Thus, the survey was recreated using “SurveyMonkey” and data were hand-entered into the program. This simple modification allowed for a much more efficient approach to analyzing and interpreting our data. To reduce the potential for error, two individuals completed this process—one calling out the data and the other entering it into the program. Additional data were also entered by secretarial staff.

Two hundred eighty eight students completed surveys, with an overall participation rate of 77% of the student body. Class standing was comprised of 32% being high school freshman (representing 82% of their class), 34% being sophomores (representing 93% of their class), 20%

being juniors (representing 61% of their class), and 14% being seniors (representing 62% of the overall class).

Results – Student Demographics

The first phase of the survey was designed to obtain basic demographic information about our student population, including race, socio-economic status, caregiver presence and household size, family education history, employment status, and educational goals. Forty six percent of the participants were female and 54% were male. Approximately 84% of those surveyed reported being born within the United States, while 16% were born outside the U.S. English Language Learners were comprised of 20% listing Spanish as their first language and an additional 13% listing a language other than English or Spanish. Thirty one percent reported that they qualified for free and reduced lunch, 51% reported they did not, and 19% said they did not know. Ninety two percent reported having a female caregiver in the home and 70% reported having a male caregiver in the home.

Highest level of education reported for mothers and female guardians included the following: 33% had finished college or a graduate degree, 7% were currently enrolled in college classes, 22% had taken some colleges classes, 16% had finished high school, 3% received their GED, and 6% did not finish high school. Highest level of education for fathers and male guardians consisted of: 38% having finished college or a graduate degree, 3% currently attending college classes, 17% having taken some college classes, 14% finishing high school, 1% receiving a GED, and 7% as not completing high school. Seventy one percent of students reported that they do not have a sibling currently attending in college; 29% had at least one sibling in college.

Students were then asked identify the highest level of education they *want* to achieve and then to identify the highest level of education they *think* they'll achieve. Finishing a graduate degree was listed by 70% of students as the highest education level they hoped to achieve, while only 51% believed it was possible or realistic. At this point, students were asked the following question:

If your answers were different for the last two questions, explain what you think might prevent you from accomplishing your educational goals.

Examples of open ended responses included: “Money,” “I struggle in school,” “Family might get in the way,” and “Because I don’t think I can do it.”

Twenty nine percent of students reported that they maintained outside employment during the school year, including 18% working 10 hours per week or less, 54% working 11-20 hours per week, and 28% working 25 hours or more during a week.

Results – Student Anxiety/Confidence

The second phase of the survey measured perceived anxiety or confidence related to reading, writing, study habits, writing skills, planner use, and content specific strengths and weaknesses. It also measured students’ beliefs about their level of college preparedness and future success, personal goal setting and problem solving skills, and enjoyment level of school and advisory. These questions were rated on a 1-5 Likert scale with (1) indicating strong agreement and (5) indicating strong disagreement.

Student opinions regarding their experience as AMES were overwhelmingly positive. Seventy-six percent of responders felt like they “belonged” at our school, 80% indicated that AMES was the “right school” for them, and 73% agreed or strongly agreed that they “liked school.” Eighty six percent of students agreed that school was an “important part” of their lives. Our students also seemed to feel supported by teaching staff, with 60% indicating that they had an adult at school they could go to for help, 70% reporting that they had worked with an AMES teacher outside of class; 91% of those students reported that approaching staff had been helpful.

Regarding their opinions of their academic skills, 64% of our students expressed the perception that they have been “successful” in school, with 57% reporting that they “work hard to do well” in school and 75% admitting that they could “put more energy and effort” into their learning. Fifty percent strongly agreed or agreed that it was “easy” for them to set and accomplish goals, and 66% reported that they could solve difficult problems if they “try hard enough.” Math

was reported to be “easy” for 56% of our students; however, only 37% believed that they were strong enough to succeed in college. Likewise, writing was reported as “easy” for 55% of our students, but only 38% felt they were strong enough for college. Twenty nine percent of our students felt it “easy” to remember information presented in class and in textbooks.

Educational activities typically occurring during school hours were described as follows: 32% of students found it “easy” to participate in class discussions, 27% to take class notes, and 22% to use the library to gather information for class assignment. However, 18% of our students reported that library work was done with extreme difficulty. Twenty nine percent reported that they are able to concentrate on school projects with ease, and 28% reported easily finishing homework on time. Twenty four percent expressed that it was easy to organize their schoolwork, with 42% reporting that their planner was helpful; 47% of students indicated that they do not use their planner at all. Twenty three percent were motivated for schoolwork and 29% had little difficulty studying when there were other interesting things to do. Forty seven percent had difficulty arranging for a non-distracting study environment, whereas only 18% could easily identify such a location.

Self-reported study habits and resources were variable. Thirty one percent of our students reported studying one hour or less per day, with an additional 11% reporting that they spend no time whatsoever studying. As an early college high school, discovering that 42% of our student body studies less than one hour a day was of significant concern. We learned that, in a given day, 27% watch three or more hours of T.V, 20% play video games for three or more hours, and 22% work outside jobs for three or more hours. Eighty percent of our students indicated that they do chores or baby-sit for their family for at least one hour per day.

Attitudes and knowledge about college indicated that 66% of our students had engaged in a conversation about college within the last month, 50% felt they have a clear understanding of what college will be like, and 77% felt they knew people who they can talk to about college. Twenty percent of our students reported that they will be the first person in their family to attend college,

and 75% reported that others were helping them get ready for college. Although 55% wondered about how they would pay for college, the majority of our students were not only college bound, but felt confident they would succeed. Eighty-four percent of our students were interested in a career requiring a college degree, 78% reported that they will graduate from AMES with college credit, and 70% agreed that it would be easy to see themselves as college students. An impressive 84% of our students agreed or strongly agreed that they will graduate from college.

Impact on Classroom Instruction

Clearly, the students at AMES come from a variety of backgrounds and are armed with a range of skills, attitudes, and goals. As our student population becomes increasingly diverse, we are faced with an increasingly wide array of challenges. While these survey results gave us many reasons to celebrate—i.e., students are happy at AMES, they feel confident in their skills, and they have college aspirations—these findings also highlighted a number of areas for improvement. Of greatest concern was the broad spectrum of responses across each survey item. For example, although most students expressed strong opinions about their skills, attitudes, and goals, the more neutral opinions of others may be more meaningful than they appear. We have many students who are thriving at AMES, with the majority reporting emotional contentment and high aspirations; when it comes to academic and study skills, however, the vast majority of our students find themselves in a mire of mediocrity. To truly embrace the diversity of our mixed-ability population, we realized that we needed to create a bridge between our students' current academic abilities and their future aspirations.

In response to this realization, we have implemented the practice of Differentiated Instruction across all areas of curriculum. This method, developed by Carol Ann Tomlinson (2000), encourages teachers to meet students where they are in the learning process and move them along as quickly and as far as possible in a mixed-ability classroom. All departments implemented Differentiated Instruction to some degree, ranging from single lesson plans to entire units, to year-long curriculum. For example, some Language Arts classes are differentiating

content and product by allowing students a choice in their reading material, as well as giving them a choice about how they demonstrate their learning. The Social Science department has fully revamped their curriculum, seeing Differentiation as the vehicle for accommodating mixed ability students with the rigorous expectations of Advanced Placement classes.

The planning and implementing process of school-wide Differentiated Instruction was facilitated with the education, support, and guidance provided for the AMES faculty by offering:

- ◆ Paid tuition and stipends to attend the ASCD Summer Conference on Differentiating Instruction Differentiation
- ◆ Hiring a Differentiation Specialist to provide one-on-one mentoring sessions for individual teachers as they began the differentiation process in their classroom.
- ◆ Individual copies of Tomlinson's *How to Differentiate Curriculum in Mixed-Ability Classrooms* (2001), Nunley's *Layered Curriculum: The Practical Guide for Teachers with More Than One Student in Their Classroom* (2001), and Marzano's *Classroom Instruction That Works* (2004)
- ◆ A Weekend Workshop focused on Differentiated Instruction & Layered Curriculum and a One-Day seminar on Brain Based Learning.
- ◆ Professional Development focused on Differentiated Instruction – providing multiple articles, research, and case studies to stimulate faculty conversation and brain storming.
- ◆ Encouraging content-area collaboration by providing scheduled meeting times for teachers to share and reflect on their individual differentiation experiences.

Gathering this survey data has also informed other educational practices. For example, one surprising finding was that students were dissatisfied with their experiences in Advisory. While the majority of students indicated a strong sense of belonging to the AMES community, they did not seem to feel the same way about Advisory.

- ◆ Changes will include creating additional Advisories by adding members of the administration, counseling office, and part-time faculty.
- ◆ Keep Advisory rolls the same from year to year allowing the advisor and students to cultivate longer-lasting relationships that extend over the entire 4 years of their high school experience.
- ◆ More structured curriculum for Advisory – provide advisors with a school wide topic so there is unity in the message and discussions can continue outside of advisory.
- ◆ Increase the roll of advisors to include participation in possible 504/IEP Meetings, parent/teacher conferences, or disciplinary actions as a support to their advisee.

Recommendations

Suggested improvements for future surveys would include:

1. creating, administering, and analyzing the survey using a computer-generated program
2. asking fewer and more informative questions
 - a. Allowing each department to generate and include content-specific questions, the answers to which would be meaningful to them and could be used to increase student-centered curriculum
3. limiting short answer questions
 - a. Qualitative feedback is an excellent source of information, but we asked too many short answer questions which were difficult to analyze. This same information could be obtained by offering more selections in drop down menu questions or allowing multiple choices in answers
4. increasing response rates
 - a. Administration of the survey could be much more efficient in the future. I would recommend choosing a required content class for grades 9-11 (i.e. English 9, 10, 11 or AP Human Geography – 9th, AP World History -10th, and AP US History -11th)

and scheduling each class for the computer lab where the survey could be accessed and completed during the class period. Senior Seminar administration of the survey to seniors. I would suggest that Senior Seminar be selected as the class to schedule the computer lab for our seniors. The majority of surveys could be completed within a week, including an A Day and B Day devoted to make up time for those who missed the first time. Because SurveyMonkey will be used, analysis of the data can begin immediately.

References

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