Fall 2012 Manor ISD Globaloria Site Interview Analysis
Winter 2013

Executive Summary

Globaloria, a project-based learning platform for game design, was implemented in the Manor, Texas Independent School District (MISD) beginning with the 2012-2013 school year. Skillpoint Alliance, an Austin-based workforce and education non-profit organization, has partnered with World Wide Workshop, the creator of Globaloria, to provide third-party data collection and program evaluation services on the implementation of Globaloria in MISD. This analysis highlights major findings that emerged through recent qualitative research in MISD. Interviews were held with administrators, counselors, Globaloria teachers and students at Manor and Decker Middle Schools on November 30 and December 4, 2012. In addition to a focus on program implementation methods, this research initiative strives to assess how effective Globaloria is at providing students with essential science, technology, engineering and math (STEM) course knowledge, technological competency and career awareness.

Highlights from this report include:

- Administrators and teachers have very high levels of satisfaction with Globaloria;
- The principals and teachers all reported high levels of satisfaction with the support provided by local World Wide Workshop's IT and local staff members
- Administrators, counselors, and teachers all place considerable value in project-based learning initiatives and STEM education;
- Enrollment into Globaloria courses was managed through student self-selection, with decisions being made with little information about the course;
- Administrators, counselors, teachers and students reported a limited availability of information about Globaloria in the previous school year into the early portion of the 2012-13 school year;
- Pervasive levels of staffing changes at MISD and at the host schools complicated the initial implementation of Globaloria in Manor, TX;
- One of the Globaloria class sections has many English Language Learners (ELL) and special education students, in addition to those who are performing at grade level;
- One of the course instructors has created an impressive step-by-step learning/operational guide for all students to facilitate the learning process;
- Course instructors report that there has been little structure provided to integrate specific STEM core-course learning objectives within the Globaloria course;
- Manor ISD staff anticipated that students' participation in Globaloria will result in increased computing competency, new connections to academic core-course content and stronger writing skills but are uncertain of its contribution to outcomes on Texas' new STAAR end-of-course test measureable outcomes on Texas' new 'STAAR' end-of-course tests
- Teachers recommend World Wide Workshop provide program course registration criteria, i.e. prerequisites; and
- Manor ISD Administrators, counselors and teachers are currently interested in scaling-up Globaloria at their schools, if necessary resources are available from the district;

INTRODUCTION

Research Entity

Skillpoint Alliance is a 501(c)3 nonprofit organization that builds partnerships among industry, education and the community, leading to college and career success for Central Texans, while meeting employers' needs for a qualified workforce. The Science, Technology, Engineering & Math (STEM) Council at Skillpoint Alliance is a consortium of high tech executives and education leaders that address workforce and education needs of the engineering and high-tech industries in Central Texas. The STEM Council particularly focuses on promoting project-based K-16 STEM education, applying classroom learning to industry and increasing the number and diversity of students on a STEM career path.

Demographic Information

The Manor Independent School District (MISD) began implementation of Globaloria, a social network for game design course at the district's two middle schools in the fall semester of the 2012-2013 school year. MISD is a rural/suburban school district within metropolitan Austin. The school district primarily serves a low-income Latino and African American student population. Demographic data from the Texas Education Agency's 2011-2012 Academic Excellence Indicator System (AEIS) is featured in Table 1. This table provides comparative demographic information for the district's middle schools, the district as a whole, and the state. As seen below, over half of students identify as Hispanic/Latino, followed by nearly a third as African American. The vast majority of students at Decker and Manor Middle Schools are economically disadvantaged, a classification in public education usually obtained through student participation in free or reduced-price lunch programs. All students currently participating in MISD Globaloria are in the sixth grade.

Table 1: School Demographic Comparisons

	Decker MS	Manor MS	Manor ISD	Texas
Total Enrollment	663	849	7,685	4,978,120
African American	29.1%	28%	23.6%	12.8%
Hispanic	59.9%	58%	61%	50.8%
White	6.8%	11.7%	10.6	30.5%
Asian/Pacific Islander	2.1%	0.2%	2.7%	3.6%
Native American	0.9%	0.1%	0.4%	0.4%
English Language Learners	21.3%	13.2%	31.2%	16.8%
Economically Disadvantaged	84.5%	79.3%	80.9%	60.4%

As seen in Table 2 below, the majority of Manor residents do not possess a higher education credential. Data from the 2007-2011 US Census American Community Survey reveals that the adult members of Manor households have lower educational attainment rates, 20.8 percent, than citizens of the Austin-Round Rock Metropolitan Statistical Area (MSA), state of Texas and the United States. These results contrast sharply with educational attainment among adults over the age of twenty-five in the Austin-Round Rock MSA, which recent data suggests that nearly half of all adults over age twenty-five (47.4 percent) hold at least an Associate's.

Finally, recent school district benchmark testing data highlights student achievement trends in reading and math. Decker and Manor Middle School scores were similar on the math assessment at 77.63 and 78.31 percent, respectively. However, reading scores were lower at both Decker and especially Manor Middle School, 69.62 and 54.55 percent, respectively.

Table 2: Educational Attainment Comparisons (Age 25 and Above)

	Manor	Austin-Round Rock MSA	Texas	United States
Less than HS Diploma/GED	15.9%	5.9 %	19.6%	14.6%
HS Diploma or GED	27.1%	19.2%	25.7%	28.6%
Some College, No Degree	36.2%	21.3%	22.3%	21%
Associate's Degree	4.7%	6.8%	6.4%	7.6%
Bachelor's Degree	12.3%	26.4%	17.4%	17.7%
Graduate Degree	3.8 %	14.2%	8.6%	10.5%

Interview Structure

Data for this qualitative study of Globaloria's implementation in MISD was primarily collected through semi-structured interviews at the school sites. Interviews were held with building principals, lead counselors, course instructors and randomly selected student cohorts. School counselors were included in the interviews, as they heavily contributed to course scheduling, registration and information delivery to students. All interviews lasted approximately 45 minutes and were held in dedicated meeting spaces with no other parties present. The schools' office manager randomly selected the student cohorts. At each location, these individuals retrieved attendance rosters of all Globaloria courses rosters and selected one student from each class section on an alternating female/male basis. Students were then instructed to report to the interview locations.

Professional Backgrounds

Administrators. The principals at Decker and Manor Middle Schools are serving in their respective roles for the first time at each location. The administrator at Decker has previously served three years as a building principal within Manor ISD and at neighboring school districts, while Manor Middle's principal is in his first year of service as a building principal. Both principals reported that their appointments to these particular campuses occurred late in the summer of 2012. This occurrence presented the administrators with a challenge in becoming familiarized with the upcoming implementation of the Globaloria course.

Counselors. Fortunately, the lead counselors at Decker and Manor Middle schools have both served in their roles and at their respective locations for several years. In addition to mental health services, the counselors are heavily involved with the administration of district and state assessments, course scheduling and student schedules. In their roles, the participants are responsible for visiting rising sixth graders at their local elementary schools during the preceding academic year to provide information about middle school in general and course registration options.

Teachers. The principals and students at Decker and Manor Middle Schools are very fortunate to have the particular course instructors that were selected to lead Globaloria. Both instructors have a variety of relevant professional, academic and instructional experiences that could equip them well in their current roles. Prior to gaining their alternative certifications in computer/technology instruction, both teachers worked as information technology (IT) professionals and/or business analysts in the private sector. Prior to teaching Globaloria, the teachers primarily taught basic computer elements courses, one at the elementary level and the other at the same middle school. Both teachers recounted how their professional experiences in technology firms enable them to describe in great detail the work activities and culture of the STEM sector. Additionally, one of the instructors expressly described that the academic work completed for a Master's degree and Certification in Learning Technologies has been hugely beneficial for designing instructional methods, many of which are different from core academic courses, but are highly effective for teaching computer/technology courses.

Part I: District Dynamics

District Implementation of Curriculum Reforms
The administrators, counselors and teachers all commented extensively on recent developments at the school district's central office that affected implementation of Globaloria. Every respondent reported that sizable portions of the district's senior and middle leadership, including the former superintendent, departed at the end of the Spring 2012 semester. This occurrence presented challenges as the district worked to secure replacement staff at the central office and schools. Further, it is perceived that the loss of central office staff members slowed transmission of information concerning the structure and operation of Globaloria. It was reported that the imminent staff relocations resulted in somewhat limited access to information about Globaloria beginning as early as the middle portion of the spring semester. Program details were particularly needed for marketing the course to rising sixth graders. Moreover, arranging attendance at the Globaloria professional development series was impeded due to the considerably late hiring of the administrator and Globaloria teacher at one of the schools.

The school leaders (administrators and counselors) provided detailed accounts about the district's current method of implementing curriculum reforms. They explained that the majority of new courses and curriculum innovations begin at the central office, where an individual assumes responsibility for the program based on the organization of their administrative portfolio. This district official, often a curriculum coordinator/director, then works with school staff members on implementation specifics including program design, structure and communication with faculty. Counselors and course instructors are the staff primarily responsible for informing students of new course/program details and registration procedures.

School counselors and course instructors were able to provide additional background information since they are frequently responsible for enforcing/operating newly established policies and initiatives. Similar accounts were reported that addressed the interactions between education organizations, i.e. curriculum providers, district leaders and school administrators. However, it was noted that some new policies and programs occasionally appear to have been unevenly planned at the onset of implementation. Very little feedback was provided about specific efforts to increase buy-in from faculty members or the degree to which teachers influence the decision-making and implementation processes.

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Curriculum Innovations

Manor ISD recently implemented a comprehensive 21st Century Learning initiative on the New Tech curriculum model. The curriculum reform is centered on expanding access to and the role of technology in learning environments to prepare students for the future workplace that will likely be technologically advanced. Interestingly, teachers and students at one of the participating middle schools have been granted access to Apple iPads on a one-to-one basis. As a part of this new model, district and school leaders, including teachers, participated in extensive professional development centered on project-based learning (PBL). These activities included a four-day workshop and several teachers attended a corresponding national conference.

Over the course of the next several school years all courses will be designed and taught based on PBL principles. This learning initiative has already been implemented in honors/pre-AP courses and in on-level sixth grade core classes. If plans remain constant, the PBL courses will then expand to seventh grade next year and eighth grade the following year. The principals, lead counselors and teachers all highlighted this development as incredibly positive and promising and have specifically sited Globaloria as an excellent component of this learning reform, as it is perceived to be purely PBL. However, one of the principals and one counselor, at different schools, commented about the importance of and need for data collection and analysis to measure how effective the New Tech model is in realizing growth in student achievement and college/career preparedness.

Part II: School Course Operations

Course Registration

Interviewees were asked to address the methods used to recruit and register students for courses such as Globaloria. Every principal and counselor explained the course registration process in essentially the same fashion, indicating that the selection of courses is standardized throughout the district. The school leaders explained that all students are required to take a basic selection of core courses: Math, Science, English/Language Arts, and Social Studies. However, students are able to take more academically rigorous versions of these courses in a honors/pre-AP format. Registration for the advanced level of coursework is typically based on past academic achievement including test scores.

In addition to core academic courses, students can select an additional two elective courses. The variety of elective course options has varied from year to year due to funding constraints. Students traditionally can register for art, physical education, band, chorus and computer/technology courses. 'Choice-sheets' are distributed to rising sixth, seventh and eighth graders in the spring semester of the preceding year. Very few additional details were provided concerning methods used to help students make informed decisions. Students complete their 'choice sheets' by ranking classes in order of their level of interest. Interestingly, one of the counselors reported that students' recent academic performance is considered when decisions are made about course selection. For example, academically low-performing students may be routed to additional tutorial support for core classes instead of electives.

All participating staff members reported a very high level of satisfaction with the methods currently used to register students for their courses. In addition to efficiency, staff reported that allowing students to select their own courses promotes a sense of ownership of their academic experience. Further, the principals and counselors mentioned that students are able to somewhat tailor their academic experiences in a fashion that is better aligned to their personal interests.

It is worth noting that there was no mention of any courses, especially electives, where students are particularly targeted for recruitment. It is possible that limited course options may explain this trend. The district's middle schools have comparatively fewer elective course offerings, when compared to other schools and districts that consistently offer various foreign languages, home economics, theatre and business courses. It is possible that the limited elective course options could result in a shortage of courses, therefore eliminating the need for recruitment as student demand for particular courses may exceed supply. Additionally, administrators indicated that further reflection was needed when presented with a plausible scenario in which an incredible number of students requested to enroll in Globaloria courses. Special attention should be devoted to registration methods, as they directly influence which students participate in Globaloria and could impact outcome results in ensuing research.

Arrangement of Class Sections

Globaloria courses at Decker and Manor Middle Schools have been structured into five sections with classes lasting approximately fifty (50) minutes. All classes are being offered as electives and are held in computer lab/technical education settings where students, approximately 15-20 per class, have access to an individually assigned computer. To the best of their ability, the teachers and students navigate the course curriculum in accordance to a pre-determined timeline. Of particular note, one of the class sections at Decker Middle School has a considerable number of English Language Learners (ELL) and exceptional, special education students, in addition to those who are performing at grade level. Moreover, this inclusion class is not team-taught, meaning there is not an additional special education teacher to assist with instruction.

Operation of Globaloria Materials

The principals and teachers all reported high levels of satisfaction with the support provided by local World Wide Workshop staff members as well those remotely managing Globaloria's IT functions. Specifically, Manor ISD staff reports about World Wide Workshop communication and assistance with emergent issues were very favorable. One of the course instructors commented on difficulties encountered with accessing some of the web-based components of the course. However, this instance was primarily centered on connecting to the host sever and software permission – the result of update and access issues between the MISD IT department and host schools.

Course instructors identified additional operational challenges that mostly concerned their students' ability to comprehend and execute directions for the various learning activities. The teachers explained that many of their students have limited computer competency outside of using the internet and playing video games. This fact accentuates the need for curricular opportunities such as Globaloria, which stands to dramatically, improve students' computing skills through rigorous PBL activities. Specific recommendations reported by instructors included a need to address computing tasks such as creating folders, cutting/pasting and other intermediate functions of the operating systems and software., With the support of World Wide Workshop, one of the course instructors has created an impressive step-by-step learning/operational guide for ELL students to facilitate the learning process. This has been especially helpful for the class section with high numbers of ELL and special education students. It is recommended that World Wide Workshop further review and refine the guide and consider it for incorporation. Currently, the teacher guide is arranged in a large three-ring binder featuring a large font, color screenshots, and numbered directions.

Course Design & Supporting the Core Curriculum

District and building leaders have designed Globaloria to function as a cross-curricular class that integrates knowledge commonly acquired in computer/technology courses with select core classes, specifically math, science and language arts. However, few details could be provided when pressed for additional detail about this design and the potential for the course to fulfill this mission. The principals amounted this shortcoming to the novelty of the program and the lack of time to invest in generating specific core-course learning objectives that could be supported through a game design course. This rationale is rather compelling given the context of personnel change at the district office and schools. Moreover, it appears that little guidance has been provided to the course instructors about adapting learning activities to support the common core. This is apparent because the teachers did not report an understanding of the specific student learning gains desired by the administration. Finally, based on the instructor commentary, it appears that few opportunities have been provided for the schools' Globaloria teachers to collaborate with fellow core course instructors or each other. It is recommended that principals provide curriculum planning opportunities so that Globaloria instructors can collaborate with teachers from core-academic departments to identify and integrate specific learning objectives.

Part III: Program Experiences and Future Opportunities

General Perceptions

The principals and counselors were quick to mention how thankful they were for the course instructors' skill, previous experience and willingness to effectively manage a new course under the challenging circumstances experienced early in the school year. The principals and counselors also noted that the students enrolled in Globaloria were pleased with the course. This notion was supported by the fact that fewer than three students at each location have requested an alternate course for the spring semester. Moreover, one of the principals mentioned having received positive feedback about Globaloria from a parent during the fall semester open house program.

School leaders consistently mentioned their belief that students are highly engaged in the course. This observation is based on student grades, brief observations of the classes and teacher reports. Additional comments revealed that Globaloria is a marked improvement over the previous 'STEM' course introduced at Manor Middle School, which had an apparently nondescript curriculum and few rigorous learning measures. This is a particularly noteworthy finding since the school year is only at the halfway mark.

The classroom teachers also expressed high levels of satisfaction with Globaloria. Although the school year began with some anticipated program roll-out glitches, the instructors reported that they would very much like to continue teaching the course. The teachers expressed that they highly value the PBL structure of the course because it requires that students maintain high engagement with course content and be responsible for the gaming products they produce. One of the course instructors accentuated the need for courses like Globaloria, especially in metropolitan contexts similar to Manor, where many students have dramatically less experience using computers and software, with the exception of video game consoles. The teachers believe that students' participation in the course will further increase rudimentary computer and software navigation, troubleshooting and design skills.

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Indeed, many students from underprivileged and/or geographically isolated backgrounds may experience greater difficulty with accessing technology and using computers at an advanced level, when compared to more affluent urban and suburban peers. Furthermore, the teachers believe that the cumulative effects of using diverse technological resources, as required by Globaloria, increases the likelihood that students like those from Manor will decide to pursue higher education and careers in STEM fields.

STEM Education & 21st Century Learning

Principals, counselors and teachers reported that they placed a high value on STEM learning initiatives like Globaloria. Both principals highlighted the importance of students' possession of 21st century learning skills, which include computer competency, familiarity with industry-standard tools, and the ability to work in teams. The educators strongly believe that 21st century skills are highly valued and rewarded in both the current and future workplace. Although generalizable across academic and career fields, school staff members indicated that increased experience with a variety of technological platforms and learning environments is absolutely required for success at higher education institutions and in the workforce. The educators felt this was especially true of STEM academic and career fields. To illustrate this notion, one of the teachers described a perception that community environment and access to resources matters greatly going so far as to note that many Manor ISD students currently view computers as entertainment objects while their comparatively more resourced peers benefit from a lifetime of understanding that technological machinery is intended for business and academic functions as well as entertainment.

Teachers believe that the cumulative effects of using diverse technological resources, as required by Globaloria, increases the likelihood that students like theirs will decide to pursue higher education and careers in STEM fields

Future Growth

All the participating principals, counselors and teachers expressed a strong desire to see the Globaloria program expand to the seventh and eighth grades. In fact, as early as the first semester the school staff members had already begun considering various resources (i.e., staff, lab space, etc.) needed to expand Globaloria course offerings, though they could not provide specific details. It is likely that this is because it is very early in the school year and enrollment projections, teacher allotments and classroom space estimates for the next school year are unknown. Principals and counselors were keenly aware that resource considerations are absolutely imperative before Manor ISD could attempt to expand enrollment and course offering at higher grade levels.

Anticipated Benefits

The principals, counselors and teachers all held apprehensions about realizing benefits of Globaloria on district and state mandated test scores. For nearly fifteen years the state of Texas has been a national leader in demanding schools be increasingly accountable for growth in student academic performance, primarily in the form of measured gains on standardized tests. Beginning with the 2011-2012 school year, the state of Texas implemented the State of Texas Assessment of Academic Readiness (STAAR), a new series of End-of-Course exams. Per the design of Globaloria, Manor ISD staff anticipated that students' participation in Globaloria will result in growth in several academic areas other than the new STAAR test alone. Specifically, interview participants expressed that the game design, integration of academic content, and blogging components of Globaloria can contribute to students' ability to use computing hardware and software, establish connections between academic subjects and strengthen writing skills. One administrator commented that online learning environments will likely continue to grow rapidly; therefore students' participation in Globaloria provides early exposure to the educational structures that will be even more pervasive in the near future.

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Part IV: Student Focus Group Reflections

Student Background & Course Selection

As previously mentioned, Globaloria students – one from each class section – were selected to participate in focus group interviews about students' experiences with the course. All students at both schools were in the sixth grade and the vast majority had attended elementary school within Manor ISD. The interview sessions began with general questions about school, including favorite classes and activities. As one might expect, students mostly reported that their favorite classes were physical education and art, while a few mentioned math/science. These answers would likely vary if students had additional elective course options. When commenting on learning preferences, respondents overwhelmingly preferred the project-based approach of the Globaloria course. Students noted that their PBL courses were generally more engaging, team-based and hands-on than traditionally structured courses.

All members of the student cohorts reported that they had self-selected into Globaloria by using the district's 'choice sheet.' When asked to rate the district's registration methods, the vast majority had positive remarks about the 'choice sheets,' since the students could select some of their own courses. Students were then asked to comment on their preconceptions of Globaloria after the initial course registration presentation that occurred during the spring of fifth grade. It is significant to note that the majority of the students said they had received little information about Globaloria prior to registering for the course.

All students enrolled in Globaloria through using the district's 'choice sheets' at a time when they thought the course was solely about game design

Focus group members from both schools frequently remarked that they thought Globaloria was solely about making video games and playing. It appears that very few, if any, additional details about the course, i.e. blogging and integration of academic content, were relayed to the students. This finding reflects previous comments from the counselors who visited the elementary schools to make the presentations. Specifically, with little information available to school staff members, few details could then be transmitted to students. It is possible that this communication challenge could have been resolved somewhat if school personnel had performed additional web research about Globaloria. However, this too may be a challenge given counselors' less-predictable schedules and task loads.

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Course Experiences & Interest/Career Alignment

All but two students reported generally favorable ratings of the Globaloria course. Students frequently remarked that the course was interesting, fun and challenging. When asked to describe the more difficult components of the course, focus group members cited unfamiliarity with some of the software and time constraints for completing projects. It is significant to note that several students at one of the schools mentioned that they are very much looking forward to the second half of the course where more rigorous game design projects and competitions would occur. Moreover, several students reported that Globaloria has increased their interest in STEM extracurricular activities.

> *Students expect to have improved computer competency and blogging ability by the completion of Globaloria*

Focus group members had a variety of responses when asked about school-career connections. When asked about the frequency in which they learn about STEM academic fields and careers, students reported that this information is delivered very rarely in the course. This was true at both school locations and seems to have resulted in relatively little interest in STEM degrees and career fields. This lack of familiarity may be expected because the students are only in sixth grade and, due to a variety of socio-geographic factors, may have limited interaction with adults pursuing STEM degrees or currently employed in STEM fields. In addition, Globaloria instructors may not have designed college and career learning experiences at the early portion of the school year. It is recommended that Globaloria instructors integrate presentations on STEM careers, and perhaps arrange visits from local computer programmers, software engineers and/or game design professionals.

The vast majority students had high hopes for their enrollment in Globaloria. Only one focus group member preferred to transfer to another course during the following semester. Students reported that by the end of the school year they expect to have improved computer competency and familiarity with blogging.
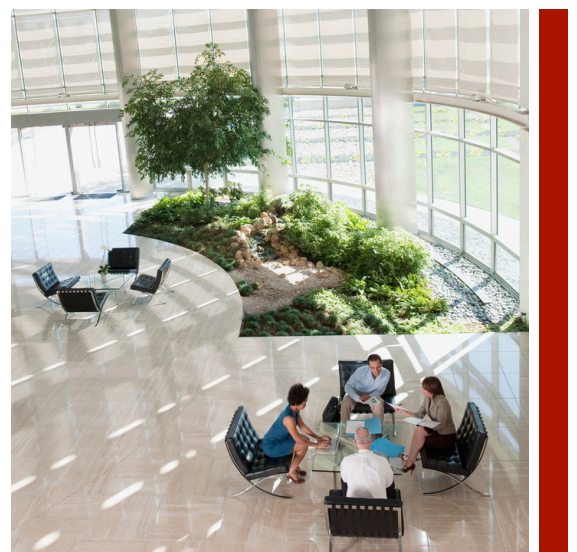
Part V: Analytical Highlights & Recommendations

Several key findings surfaced during discussions with administrators, counselors, teachers and students. These highlights should be considered for further refinement of Globaloria's implementation in Manor:

1. **Course instructors should have more input when making implementation decisions.** Interview results from administrators, counselors and teachers reveal that course instructors had little input in the implementation process. While this may be a frequent occurrence in schools, more input may prove beneficial for student registration and logistics in future iterations of Globaloria.

2. **School staff members should reflect on the type of students that self-select into Globaloria.** Consideration of current trends may reveal opportunities to recruit a segment of eligible students who otherwise may not have elected to enroll in Globaloria.

3. **Accurate and detailed communication about Globaloria should be provided during the preceding spring registration cycle.** This will be much easier to resolve in the future as the Globaloria instructors can visit future students and provide additional information and even display student work samples.

4. **Consider promulgating a step-by-step Globaloria how-to guide.** One of the course instructors found it necessary to produce such a guide, and it seems prudent to provide course instructors with an opportunity to collaboratively plan and determine whether all students in all class sections, particularly the district's ELL student population, should be provided with this resource.

5. **Consider establishing Globaloria course pre-requisites.** Course instructors mentioned that a sizable number of students began Globaloria with very low computer competency, problem solving and reading ability. This trend may indicate that some level of prerequisites may be needed to ensure that students are able to be successful in the course. However, the establishment of required courses will likely discourage students who are genuinely interested in game design and STEM education, but lacking the new prerequisites.

6. **More collaboration between Globaloria and core academic course instructors is needed.** A common planning period or occasional inter-departmental meetings would greatly help to identify academic concepts that need to be reinforced in Globaloria.

7. **Formally integrate a focus on the variety of STEM academic fields and careers.** Producing and moderating concise presentations on STEM degrees and career fields throughout the school year would ensure that students leave Globaloria with a verifiable understanding of the industry. Including guest speakers and field trips could further build upon information addressed in the presentations throughout the school year.

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