Technology Implementation Plan

New Jersey City University

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EDTC 631: Administration and Supervision of Technology Education Setting

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Recommendation for Increasing Mathematics Achievement

Randolph Township School District has requested that an analytical review be conducted of data on mathematics scores to determine if and what types of remedial technology need to be implemented. Two types of data were gathered for this process, quantitative and qualitative. The instruments used were the New Jersey Assessment of Skills and Knowledge scores from 2013 – 2014 and a comprehensive teacher survey.

New Jersey Assessment of Skills and Knowledge from 2013- 2014 was chosen because detailed information from the most recent standardized test, Partnership for Assessment of Readiness for College and Careers, is not available at this time. The teacher survey is included because Zhao and Cziko (2001) stated that teacher's perceptions are an important factor when making choices concerning educational technology. An analysis of the standardized test scores revealed that the district needs to improve in the areas of students with disabilities, Hispanic students and economically disadvantaged students in the elementary schools.

The goal of this technological implementation action plan is to increase standardized test scores in mathematics and standards based proficiency in order to the meet the district's goal for college and career readiness, and also to meet the mandate of the No Child Left Behind legislation. The Universal Design for Learning (UDL) provides guiding principles for the design for the action plan. The multiple representation of information with equal access for all learners is a UDL principle that calls for an engagement of all students through technology enhanced and customized instruction adjustable to meet individual student needs (CAST, 2008). Multimedia instruction is reported to be beneficial to low-performing students to reach high achievement standards (Rose, 2005).

The school-wide proficiency target has not been met for many subgroups as shown in Appendix A. The focus of the technological implementation of the adaptive learning system shall be aimed at these audiences. Skill-based deficits will be addressed by the implementation of a Let's Go Learn's adaptive learning system's ADAM (Adaptive, Diagnostic Assessment of Mathematics) assessment in conjunction with the Edge online skills builder. Let's Go Learn is directly aligned to the Common Core Standards and can specifically address Randolph Township's math curriculum to help students with varied academic, social, and economic backgrounds. Students take the ADAM math assessment to determine current grade levels skills and define a baseline. Areas of partial proficiency are addressed in the Edge online skills builder. Individual learning paths and lessons are geared toward mastery. Another adaptive learning program was considered, Renaissance' STAR Math assessments and Compass Learning's individual learning path module. This product was used in a local school district and received poor students reviews and teachers found it cumbersome to use (R. Kreider, personal communication, November 9, 2015).

A study by Orosco (2014) demonstrated that word problems for English language learners that poses math deficiencies are difficult because students are required to have accurate math linguistic abilities and understanding along with computation skills. Therefore English language learners require reading and language remediation along with mathematics support. Let's Go Learn's provides this support.

Push-in implementation, or inclusion, of the program will be used by training teachers on a center-based approached. Students rotate through stations which will include online skill building with Edge, the current lesson being taught. Students identified to be significantly

below grade level will have an additional period of remediation. This approach is the same for all targeted subgroups.

Supervisor's, and Lead Teachers will be provided an initial 3 day training session through Let's GO Learn where the program tools and resources are reviewed and examples are provided for proper implementation of the program. After those PD sessions are complete the Supervisors and Lead teachers will then begin to support the program implementation at their building level.

The teachers will be trained by a supervisor and math coach certified by the New Jersey Department of Education in Mathematics as well as a lead teacher. The Math coach will provide job embedded training in the form of model lessons, in class support and providing resources for the classroom. The coach will also provide mini PD sessions during teach common planning time. This will provide an opportunity to create and review lesson plans, activities and assessment for proper implementation of ADAM and Math EDGE.

Evaluation of the program will be done with monitoring student achievement on the pre-test and post-test within the Edge system and student scores. Also, students who used Edge will be monitored by their Partnership for Assessment of Readiness for College and Careers. Formative assessments will also be implemented thus allowing teachers to gather information and assess student learning during the course of instruction (Butler, 2014). This will assist in the evaluation of the application. The types of formative assessments will include but will not be limited to exit tickets, journal entries, quizzes and portfolio checks.

Cost and Professional Development

ADAM assessments are $20 per individual and the adaptive learning module is $575 for 5 students. The target subgroups total approximately 350 students so the initial outlay would

be $47,250. Software will be used on existing laptop carts that are located in each mathematics classrooms. Phase 2 of the implementation will require the individual schools to absorb the maintenance costs for the program.

Training and support for the product will be through the company presenters, technology and mathematics supervisors and lead teachers. One-day onsite training of all teachers is embedded in the price of the first software purchase. Additionally, a coach from Let's Go Learn will come on site for two additional days to model lessons in the classroom and answer specific teacher inquiries. Lead teacher support (math coach's) will also be done, no additional cost will be necessary. Substitutes and release pay would not be needed for the additional two days of training from the Let's Go Learn representative. On-going training will be provided by the math supervisors in the district. Professional development Support will be job embedded, providing model lessons, resources and data analysis support. Professional Development should be grade level specific providing support for the standards at that grade level. The math supervisors will monitor data and success of the program. Teachers will receive two full days of training on the product and how to read the reports. Time will be given to teachers during normal faculty meetings.

The implementation of Let's Go Learns adaptive learning system will be reevaluated at the end of a one year cycle in conjunction with the annual standardized testing schedule. If test scores and teacher feedback prove the value of the product, the implementation of Let's Go Learn will remain in process and will continue on a yearly cycle.

Research

Adaptive learning technologies utilize computer software to tailor curriculum and instruction towards the learners' content knowledge levels. An adaptive learning system keeps

track of student progress and provides timely feedback.Research shows that Adaptive learning technologies help create authentic and meaningful learning environments that promote self-efficacy and improve learning with personalized intervention (Walkington, 2013). Studies also reports that with the increasingly large class size and diverse student learning needs in many k-12 schools, many administrators, students, and parents value the sophisticated use of educational technology to help deliver right level of content for better academic achievement through individualized instruction (The future of personalized learning…, 2013), and the adaptive learning technologies have such a positive impact on student learning experience.

For this technological implementation action plan two products were products were considered. Renaissance Learning (STAR assessments and Compass), Dreambox Learning. Renaissance Learning, which utilizes STAR assessments for baseline data and Compass Learning to provided individualized learning paths was used in the Mount Olive School district. The program was eventually phased out because it was difficult to use and the student feedback on the interface was poor. Let's Go Learn provides a more comprehensive approach to meeting not only the goal of skills development, but provided a robust support structure and pricing model. Its online math assessment tools K-12 include ADAM and DOMA (Diagnostic Online Math Assessment) series, which align math instruction to Common Core State Standards, the state standards, National Council of Teachers of Mathematics standards, and No Child Left Behind requirements. Let's Go Learning has been proven effective and was top rated for providing diagnostic assessment and measurement of students' math skills to help design customized instruction (Hixson, 2008).

Karpinski's (2010) dissertation study found it evident that using adaptive diagnostic technology as formative assessment tool significantly increased students' standardized test

scores. DOMA series give formative assessment feedback that enables teachers to find suitable instructional materials for students to achieve higher learning objectives (Dessoff, 2008). Dessoff's study also confirms that formative assessment supports differentiated learning for struggling students and helps identify learning difficulties that students may have, and then determine matching instructional programs for them. Let's Go Learn's personalized math instruction component Edge, including Math Edge, Pre-Algebra Edge, and Algebra Edge, provide differentiated instruction based on diagnostic assessment (Let's Go Learn, 2012).

With the availability of assessment and instruction components, Let's Go Learning provides support to the district's math curricula to prepare all students success, and also addresses the need for individualized instruction for students with disabilities, limited English proficient students, and economically disadvantaged students.

Appendix A

The table below shows if progress targets individually considered for No Child Left Behind in each subdivision of the schools in the Randolph Township New Jersey District were met.

School/subdivision	Math
Fernbrook	
School wide	No
White	Yes
Black	-
Hispanic	No
American Indian	-
Asian	Yes
Two or More Races	-
Students with Disability	Yes
Limited English Proficient Students	-
Economically Disadvantaged Students	No
Ironia	
School wide	Yes
White	-
Black	-
Hispanic	-
American Indian	-

Asian	-
Two or More Races	-
Students with Disability	Yes
Limited English Proficient Students	-
Economically Disadvantaged Students	-
Center Grove	
School wide	Yes
White	Yes
Black	-
Hispanic	-
American Indian	-
Asian	-
Two or More Races	-
Students with Disability	No
Limited English Proficient Students	-
Economically Disadvantaged Students	-
Shongum	
School wide	Yes
White	Yes
Black	-

Hispanic	-
American Indian	-
Asian	-
Two or More Races	-
Students with Disability	No
Limited English Proficient Students	-
Economically Disadvantaged Students	-
Randolph Middle School	
School wide	Yes
White	Yes
Black	
Hispanic	Yes
American Indian	
Asian	Yes
Two or More Races	
Students with Disability	Yes
Limited English Proficient Students	
Randolph High School	
School wide	Yes
White	Yes

Black	
Hispanic	Yes
American Indian	
Asian	Yes
Two or More Races	
Students with Disability	Yes
Limited English Proficient Students	
Economically Disadvantaged Students	Yes

Appendix B

Action Plan Template

Action Plan							
School: Randolph Middle School **Principal: Dr. Copeland** **Date Submitted: 11/09/2015**							
Section A –Describe your goal, target audience, and identify which need(s) the goal addresses. (Refer to prior data analysis regarding needs)							
Goal #1	The goal is to increase standardized test scores to meets expectations for ninety percent of special education students by including Let's Go Learn in the mathematics curriculum. The need has been identified by analysis of standardized test scores.						
Target Audience	**Special Education**						
Identified Needs	Increase standardized test scores.						
Outcomes/Objectives Section B- The outcomes must be measureable and directly aligned to Goal. This outcome/objective must be one of your technology related outcomes/ objectives from Project #4 for this Goal	**ACTION STEPS** – Section C – Descriptively list the action to ensure progress toward your goal. Action steps are strategies and interventions which should be research-based where possible and may *include professional development, technology, communication, and parent and community involvement initiatives within the action steps.(Use as many steps as you need for each Outcome)*	**IMPLEMENTATION INFORMATION** Section D– For each of the Action Steps you list, give timeline, person(s) responsible (for management, coordination and monitoring), required resources (infrastructure-services, physical and human resources),projected cost(s)/funding sources, evaluation data source with identified instrument/methodology, and principal strategies and responsibilities. (For Evaluation Strategy, define how you will evaluate the action step.)					
		Timeline (begin-end date for each step)	Person Responsible for coordination and reporting	Required Resources (People, technology, furniture, etc.)	Estimated Projected Cost(s) & Funding Sources	Evaluation Data Source and Instruments used	Principal Strategies and Responsibilities to insure success

Outcome /Objective #1- IN THIS BOX - this outcome is only related to Goal 1	1) Development of formative assessment tool.	Dec 1, 2015 - Dec 1, 2016	General Education Teachers, General Education Supervisors, Special Education Teachers, Special Education Supervisor	Classrooms with smart board, internet access and laptop computers, substitute teachers	Estimated cost are $2000. Title one funds will be the sources.	Responses from formative assessment, Standardized test scores.	Implementation of technology to increase standardized test scores.
	2) Involve special education staff members	Dec 1, 2015 - Dec 1, 2016	Case managers.	Meeting rooms with smart board, internet access and laptop computers.	Estimated cost are $53200. Title one funds will be the sources.	Responses from formative assessment, Standardized test scores.	Implementation of technology to increase standardized test scores.
	3) train teachers in the use of software	Dec 1, 2015 - Dec 1, 2016	Teachers, supervisors.	Classrooms with smart board, internet access and laptop computers.	Training will be provided on a PD day . Training will be provided by Let's go learn.	Responses from formative assessment, Standardized test scores.	Implementation of technology to increase standardized test scores.
	4) evaluate the implementation and effectiveness of the application	Dec 1, 2015 - Dec 1, 2016	Teachers, supervisors, Child study team, guidance counselors. .	Meeting rooms with smart board, internet access and laptop computers.	Evaluations will be completed on a PD day .	View of participants. Responses from formative assessment, Standardized test scores.	Implementation of technology to increase standardized test scores.

Action Plan

School: Randolph Middle School Principal: Dr. Copeland Date Submitted: 11/9/2015

Section A –Describe your goal, target audience, and identify which need(s) the goal addresses. (Refer to prior data analysis regarding needs)

Goal #2		The goal is to increase standardized test scores to meets expectations for ninety five percent of English Language Learners by including Let's Go Learn in the mathematics curriculum. The need has been identified by analysis of standardized test scores.					
Target Audience		**English Language Learners**					
Identified Needs		Increase standardized test scores.					
Outcomes/Objectives Section B- The outcomes must be measureable and directly aligned to Goal. <u>This outcome/objective must be one of your technology related outcomes/ objectives from Project #4 for this Goal</u>	**ACTION STEPS** – Section C – Descriptively list the action to ensure progress toward your goal. Action steps are strategies and interventions which should be research-based where possible and may *include professional development, technology, communication, and parent and community involvement initiatives within the action steps. (Use as many steps as you need for each Outcome)*	**IMPLEMENTATION INFORMATION** Section D– For each of the Action Steps you list, give timeline, person(s) responsible (for management, coordination and monitoring), required resources (infrastructure-services, physical and human resources),projected cost(s)/funding sources, evaluation data source with identified instrument/methodology, and principal strategies and responsibilities. (For Evaluation Strategy, define how you will evaluate the action step.)					
		Timeline (begin-end date for each step)	Person Responsible for coordination and reporting	Required Resources (People, technology, furniture, etc.)	Estimated Projected Cost(s) & Funding Sources	Evaluation Data Source and Instruments used	Principal Strategies and Responsibilities to insure success
Outcome /Objective #1- IN THIS BOX – this outcome is only related to Goal 2, not Goal 1	1) Development of formative assessment tool.	Dec 1, 2015 - Dec 1, 2016	General Education Teachers, General Education Supervisors, ELL Teachers, ELLI Education Supervisor	Classrooms with smart board, internet access and laptop computers, substitute teachers	Estimated cost are $2000. Title one funds will be the sources.	Responses from formative assessment, Standardized test scores.	Implementation of technology to increase standardized test scores.
	2) Involve special education	Dec 1, 2015 - Dec 1, 2016	English Language Learners supervisor..	Meeting rooms with smart board, internet access and laptop computers.	Estimated cost are $53200. Title one funds will	Responses from formative assessment, Standardized test scores.	Implementation of technology to increase standardized test scores.

	staff members				be the sources.		
	3) train teachers in the use of software	Dec 1, 2015 - Dec 1, 2016	Teachers, supervisors.	Classrooms with smart board, internet access and laptop computers.	Training will be provided on a PD day . Training will be provided by Let's go learn.	Responses from formative assessment, Standardized test scores.	Implementation of technology to increase standardized test scores.
	4) evaluate the implementation and effectiveness of the application	Dec 1, 2015 - Dec 1, 2016	Teachers, supervisors, English language learners supervisor, guidance counselors. .	Meeting rooms with smart board, internet access and laptop computers.	Evaluations will be completed on a PD day .	View of participants. Responses from formative assessment, Standardized test scores.	Implementation of technology to increase standardized test scores.

Action Plan

School: Randolph Middle School **Principal: Dr. Copeland** **Date Submitted: 11/09/2016**

Section A –Describe your goal, target audience, and identify which need(s) the goal addresses. (Refer to prior data analysis regarding needs)

Goal #3	The goal is to maintain or improve standardized test scores for general education students by including Let's Go Learn in the mathematics curriculum. The need has been identified by analysis of standardized test scores.
Target Audience	**Economically Disadvantaged Students**
Identified Needs	Increase standardized test scores.

Outcomes/Objectives Section B-	**ACTION STEPS** – Section C – Descriptively list the action to ensure progress toward your	**IMPLEMENTATION INFORMATION** Section D– For each of the Action Steps you list, give timeline, person(s) responsible (for management, coordination and monitoring), required resources (infrastructure-services, physical and human resources),projected cost(s)/funding sources, evaluation data source with identified instrument/methodology, and principal strategies and responsibilities. (For Evaluation Strategy, define how you will evaluate the action step.)

The outcomes must be measureable and directly aligned to Goal. <u>This outcome/objective must be one of your technology related outcomes/ objectives from Project #4 for this Goal</u>	goal. Action steps are strategies and interventions which should be research-based where possible and may *include professional development, technology, communication, and parent and community involvement initiatives within the action steps.* ***(Use as many steps as you need for each Outcome)***	Timeline (begin-end date for each step)	Person Responsible for coordination and reporting	Required Resources (People, technology, furniture, etc.)	Estimated Projected Cost(s) & Funding Sources	Evaluation Data Source and Instruments used	Principal Strategies and Responsibilities to insure success
Outcome /Objective #1- IN THIS BOX – this outcome is only related to Goal 2, not Goal 1	1) Development of formative assessment tool.	Dec 1, 2015 - Dec 1, 2016	General Education Teachers, General Education Supervisor Supervisor	Classrooms with smart board, internet access and laptop computers, substitute teachers	Estimated cost are $2000. Title one funds will be the sources.	Responses from formative assessment, Standardized test scores.	Implementation of technology to increase standardized test scores.
	2) Involve special education staff members	Dec 1, 2015 - Dec 1, 2016	General Education supervisors, guidance counselors..	Meeting rooms with smart board, internet access and laptop computers.	Estimated cost are $53200. Title one funds will be the sources.	Responses from formative assessment, Standardized test scores.	Implementation of technology to increase standardized test scores.
	3) train teachers in the use of software	Dec 1, 2015 - Dec 1, 2016	Teachers, supervisors.	Classrooms with smart board, internet access and laptop computers.	Training will be provided on a PD day . Training will be provided by Let's go learn.	Responses from formative assessment, Standardized test scores.	Implementation of technology to increase standardized test scores.

	4) evaluate the implementation and effectiveness of the application	Dec 1, 2015 - Dec 1, 2016	Teachers, supervisors guidance counselors. .	Meeting rooms with smart board, internet access and laptop computers.	valuations will be completed on a PD day .	View of participants. Responses from formative assessment, Standardized test scores.	Implementation of technology to increase standardized test scores.

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