ITEST Dissemination Products

A selection of products reported by projects on the 2014-2015 MIS

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ITEST Project	STELAR link	Citation
ARTICLES		
Design Loft STEM Learning Program	http://stelar.edc.org/publications/stretch-dream-and-do-21st-century-design-thinking-stem-journey	Carroll, M. (2015). Stretch, Dream, and Do - A 21st Century Design Thinking & STEM Journey. Journal of Research in STEM Education, 1(1), 59-70.
The FabLab Classroom: Preparing Students for the Next Industrial Revolution	http://stelar.edc.org/publications/learning-about-surface-area-through-digital-fabrication-augmented-unit	Corum, K., & Garofalo, G. (2016). Learning about Surface Area through a Digital Fabrication-Augmented Unit. Journal of Computers in Mathematics and Science Teaching, 35(1).
The FabLab Classroom: Preparing Students for the Next Industrial Revolution	http://stelar.edc.org/publications/using-digital-fabrication-support-student-learning	Corum, K. and Garofalo, J. (2015). Using digital fabrication to support student learning. 2. (2). 3-D Printing and Additive Manufacturing, 2. 55.
The FabLab Classroom: Preparing Students for the Next Industrial Revolution	http://stelar.edc.org/publications/educational-framework-digital-manufacturing-schools	Bull, G., Haj - Hariri, H., Atkins R., and Moran, P. (2015). An Educational Framework for Digital Manufacturing in Schools. 2. (2). Journal of 3D Printing and Additive Manufacturing, 2. 42.
The FabLab Classroom: Preparing Students for the Next Industrial Revolution	http://stelar.edc.org/publications/teach-steam-toys	Bull, G. & Portz, S. (2014). Teach STEAM with toys. 41. (2). Learning and Leading with Technology, 41. 35

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The FabLab Classroom: Preparing Students for the Next Industrial Revolution	http://stelar.edc.org/publications/lab-classroom-3d-printers-schools	Bull, G., Haj-Hariri, H., & Nelson, A. (2014). The lab in the classroom: 3D printers in schools. 41. (Oct / Nov). Make Magazine, 41.
SCI-TALKS (Supporting Community Initiatives for TeAching, Learning, and Knowing Science)	http://stelar.edc.org/publications/confronting-barriers-teaching-elementary-science-after-school-science-teaching	Cartwright, T., Smith, S. & Hallar, B. (2014) Confronting barriers to teaching elementary science: Afterschool science teaching experiences for preservice teachers. Teacher Education & Practice, 27 (2-3), 464-487.
SCI-TALKS (Supporting Community Initiatives for TeAching, Learning, and Knowing Science)	http://stelar.edc.org/publications/elementary-pre-service-teachers-response-shift-bias-self-efficacy-and-attitudes-toward	Cartwright, T. & Atwood, J. (2014) Elementary pre-service teachers' response-shift bias: Self-efficacy and attitudes toward science'. International Journal of Science Education, 36(14), 2421-2437.
Seeding the Future: Creating a Green Collar Workforce Through Learning about Indoor Urban Farming Technologies and Alternative Energy Sources	http://stelar.edc.org/publications/how-high-school-students-envision-their-stem-career-pathways	Zhang, L., & Barnett, M. (2014). How high school students envision their STEM career pathways. Cultural Studies of Science Education, 1-20.
Network Science for the Next Generation - Collaborative Research	http://stelar.edc.org/publications/netsci-high-bringing-network-science-research-high-schools	NetSci High: Bringing Network Science Research to High Schools
Network Science for the Next Generation - Collaborative Research	http://stelar.edc.org/publications/network-literacy-essential-concepts-and-core-ideas	Network Literacy: Essential Concepts and Core Ideas

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Going Green! Middle Schoolers Out to Save the World (MSOSW)	http://stelar.edc.org/publications/alignment-hands-stem-engagement-activities-positive-stem-dispositions-secondary-school	Christensen, R., Knezek, G., & Tyler-Wood, T. (2015). Alignment of hands-on STEM engagement activities with positive STEM dispositions in secondary school students. Journal of Science Education and Technology 24(6), 898- 909.
Going Green! Middle Schoolers Out to Save the World (MSOSW)	http://stelar.edc.org/publications/measuring-student-career-interest-within-context-technology-enhanced-stem-projects	Peterman, K., Kermish-Allen, R., Knezek, G., Christensen, R., & Tyler-Wood, T. (2016). Measuring student career interest within the context of technology-enhanced STEM projects: A cross-project comparison study based on the Career Interest Questionnaire. Journal of Science Education and Technology.
Going Green! Middle Schoolers Out to Save the World (MSOSW)	http://stelar.edc.org/publications/retrospective-analysis-stem-career-interest-among-mathematics-and-science-academy	Christensen, R., Knezek, G., & Tyler-Wood, T. (2015). A retrospective analysis of STEM career interest among mathematics and science academy students. International journal of Learning, Teaching and Educational Research, 10(1), 45-58.
Going Green! Middle Schoolers Out to Save the World (MSOSW)	http://stelar.edc.org/publications/gender-differences-high-school-student-dispositions-toward-science-technology	Christensen, R., Knezek, G., & Tyler-Wood, T. (2015). Gender differences in high school dispositions toward science, technology, engineering and mathematics careers. Journal of Computer in Mathematics and Science Teaching, 34(4), 395-408.

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ITEST Project	STELAR link	Citation
Going Green! Middle Schoolers Out to Save the World (MSOSW)	http://stelar.edc.org/publications/student-perceptions-science-technology-engineering-and-mathematics-stem-content-and	Christensen, R., Knezek, G., & Tyler-Wood, T. (2014). Student perceptions of Science, Technology, Engineering and Mathematics (STEM) content and careers. Computers in Human Behavior, 34, 173-186. http//dx.doi.org/10.1016/j.chb.2014.01.046
Back to the Earth	http://stelar.edc.org/publications/fish-weir-culturally-relevant-stem-activity	Kern, A. L., Howard, M., Navickis-Brasch, A., Fiedler, F., & Cadwell, J. (2015). The fish weir challenge: A culturally relevant engineering design challenge. Science Scope, 38(9).
Studio STEM: Engaging Middle School Students in Networked Science and Engineering Projects	http://stelar.edc.org/publications/interest-driven-learning-among-middle-school-youth-out-school-stem-studio	Evans, M. A., Lopez, M., Maddox, D., Drape, T., & Duke, R. (2014). Interest-driven learning among middle school youth in an out-of-school STEM studio. Journal of Science Education and Technology, 23(5), 624-640.
Studio STEM: Engaging Middle School Students in Networked Science and Engineering Projects	http://stelar.edc.org/publications/interest-driven-stem-learning-among-youth-through-social-networking-site	Evans, M. A., Won, S., & Drape, T. (2014). Interest-driven STEM learning among youth through social media networking site. International Journal of Social Media and Interactive Learning Environments, 2(1), 3-20.
Studio STEM: Engaging Middle School Students in Networked Science and Engineering Projects	http://stelar.edc.org/publications/elements-design-based-science-activities-affect-students-motivation	Jones, B. D., Chittum, J., Akalin, S., Schram, A., Fink, J., Schnittka, C., Evans, M., & Brandt, C. (2015). Elements of design-based science activities that affect students' motivation. School Science and Mathematics, 115(8), 404-415.

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Build IT Underwater Robotics Scale Up for STEM Learning and Workforce Development (BISU)	http://stelar.edc.org/publications/waterbotics-novel-engineering-design-curriculum-formal-and-informal-educational	Holahan, P., McKay, M., Sayres, J., Lowes, S., Camins, A., & McGrath, B. (2015). WaterBotics: A Novel Engineering Design Curriculum for Formal and Informal Educational Settings. Hoboken, NJ: Stevens Institute of Technology
Build IT Underwater Robotics Scale Up for STEM Learning and Workforce Development (BISU)	http://stelar.edc.org/publications/go-guide-engineering-curricula-grades-6-8-choosing-and-using-best-instructional	Sayres, J., McKay, M., & Camins, A. (2015). WaterBotics. In C. Sneider (Ed.) The Go-To Guide for Engineering Curricula, Grades 6-8. Corwin. Thousand Oaks, CA.
Effects of STEM/ICT Aspirants' High School Experiences on STEM and ICT Course-Taking	http://stelar.edc.org/publications/how-do-propensity-score-methods-measure-presence-measurement-error-monte-carlo-study	Rodriguez de Gil, P., Kim, E.S., Bellara, A.P., Lanehart, R. E., Lee, R. S., Kromrey, J. D. (2015) How do propensity score methods measure up in the presence of measurement error? A Monte Carlo study. Multivariate Behavioral Research, 50(5), 520-532.
Innovative Technology in Science Inquiry Scale-Up Project (ITSI-SU)	http://stelar.edc.org/publications/customize-or-not-customize-exploring-science-teacher-customization-online-lesson-portal	Littenberg-Tobias, J., Behesht, E., & Staudt, C. (2016). To customize or not to customize? Exploring science teacher customization in an online lesson portal. Journal of Research in Science Teaching, 53(3), 349-367.

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oDREAMS: Promoting Computational Thinking through Game & Simulation Design	http://stelar.edc.org/publications/scalable-game-design-strategy-bring-systemic-computer-science-education-schools-through	Repenning, A., Webb, D. C., Koh, K. H., Nickerson H., Miller, S. B., Brand, C., et al., (2015) Scalable Game Design: A Strategy to Bring Systemic Computer Science Education to Schools through Game Design and Simulation Creation. Transactions on Computing Education (TOCE), 15(2), pp. 1-31.
BOOKS		
The CryptoClub: Extending Learning with Student-Generated Tutorials	http://stelar.edc.org/publications/cryptoclub-cipher-handbook-and-cryptoclub-leader-manual	Beissinger, J., and Saunders, B. (2015). The CryptoClub Cipher Handbook and CryptoClub Leader Manual. University of Illinois. Available through the University of Illinois at Chicago Bookstore: https://www.uicbookstore.org/c-57-crypto-club.aspx
BOOK CHAPTERS		
Seeding the Future: Creating a Green Collar Workforce Through Learning about Indoor Urban Farming Technologies and Alternative Energy Sources	http://stelar.edc.org/publications/coupling-geospatial-and-computer-modeling-technologies-engage-high-school-students	Debay, D., Patchen, A., Cruz, A., Madden, P., Xu, P., Vaughn, & Barnett (2016). Coupling geospatial and computer modeling technologies to engage high school students in learning urban ecology. To appear in Improving K-12 STEM Education Outcomes through Technological Integration, Eds. M. Urban and D. Falvo. IGI Global.
Going Green! Middle Schoolers Out to Save the World (MSOSW)	http://stelar.edc.org/publications/active-learning-approaches-integrating-technology-middle-school-science-curriculum	Christensen, R. & Knezek, G. (2015). Active learning approaches to integrating technology into middle school science curriculum based on 21st century skills. In X.Ge, D. Ifenthaler, & J.M. Spector (Eds.). Full Steam Ahead: Emerging Technologies for STEAM. New York: Springer Academic.

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Back to the Earth	http://stelar.edc.org/publications/drawing-place-and-culture-climate-change-native-communities	Kern, A. L., Roehrig, G. H., Bhattacharya, D., Wang, J., Finley, F., Reynolds, B, Nam, Y. (2015). Drawing on place and culture for climate change in native communities. In Mueller, M. & Tippins, D. (Eds.) EcoJustice, Citizen Science and Youth Activism: Situated Tensions for Science Education.
CURRICULAR MATERIALS		
Design Loft STEM Learning Program	http://stelar.edc.org/projects/19469/curricula/dloft-curriculum-units	d.loft Curriculum Units
WNY Genetics in Research Partnership: Expanding Exposure, Career Exploration and Interactive Projects in Basic Genome Analysis and Bioinformatics	http://stelar.edc.org/projects/19432/curricula/genome-annotation-project-educational-resources	Genome Annotation Project Educational Resources
Scaling up an Innovative Approach for Attracting Students to Computing	http://stelar.edc.org/projects/14768/curricula/adventures-alice-programming	Adventures in Alice Programming
Barcoding Life's Matrix: Engaging Students as Citizen Scientists in the Barcode of Life Initiative	http://stelar.edc.org/projects/20411/curricula/education-and-barcode-life-ebol	Education and Barcode of Life (eBOL)

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Water SCIENCE: Supporting Collaborative Inquiry, Engineering, and Career Exploration with Water	http://stelar.edc.org/projects/20412/curricula/innovative-technology-science-inquiry	Innovative Technology in Science Inquiry
Human-Centered Robotics Experiences for Exploring Engineering, Computer Science, and Society	http://stelar.edc.org/projects/20413/curricula/robotmoose	RobotMoose
INSTRUMENTS		
Going Green! Middle Schoolers Out to Save the World (MSOSW)	http://stelar.edc.org/instruments/climate-change-attitude-survey-cssa	Christensen, R. & Knezek, G. (2015). The climate change attitude survey: Measuring middle school student beliefs and intentions to enact positive environmental change. International Journal of Environmental and Science Education,10(5), 773-788.
VIDEOS		
Design Loft STEM Learning Program	http://stelar.edc.org/publications/design-time-learning-transformative	Design Time: learning that is transformative
2016 NSF Video Showcase - Advancing STEM Learning For All: Sharing Cutting Edge Work and Community Discourse (featuring 22 ITEST projects)	http://stelar.edc.org/events/2016-nsf-video-showcase-advancing-stem-learning-all-sharing-cutting-edge-work-and-community	NSF 2016 Video Showcase

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