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PILeT: An interactive learning tool to teach	**Alshaigy, B.**	12012361@brookes.ac	**Oxford Brookes Univer**	**United Kingdom**
	Alshaigy, B.			
	Ben-Ari, M.	moti.ben-ari@weizmann	**Weizmann Institute of S**	**Israel**
A decade of research and development on	**Ben-Ari, M.**			
Exploring students' computational practice,	**Chao, P.**	poyaochao@saturn.yzu	**Yuan Ze University**	**Taiwan**
Improving teaching and learning of compute	**Esteves, M.**	micaela@estg.ipleiria.pt	**Polytechnic Institute o**	**Portugal**
	Feng, A.	afeng@vt.edu	**Virginia Tech**	**United State**
Parallel programming with pictures is a Snap	**Feng, A.**			
The effects of goal specificity and scaffoldin	**Feng, C.**	mpchen@ntnu.edu.tw	**Taiwan Normal Univers**	**Taiwan**
New Teaching Model for Java Programming	**Horváth, R.**	raubirius@gmail.com	**Trnava University**	**Slovakia**
Learning Programming with Erlang	**Huch, F.**	fhu@informatik.uni-kiel.c	**University Kiel**	**Germany**
Hi-Lo Tech Games: Crafting, Coding and Cc	**Kafai, Y.**	kafai@upenn.edu	**University of Pennsylv**	**Philadelphia**
A drawing and multi-representational compu	**Kordaki, M.**	kordaki@cti.gr	**Patras University**	**Greece**
Comparing the Effectiveness of Online Lear	**Lee, M.**	mjslee@uw.edu	**University of Washingt**	**United State**
Introducing Computer Programming to Child	**Merkouris, A.**	c14merk@ionio.gr	**Ionian University**	**Greece**
	Navarrete, C.	ccnavarrete@utexas.ed	**University of Texas**	**United State**
Creative thinking in digital game design and	**Navarrete, C.**			
Transition in Student Motivation during a Sc	**Nikou, S.**	stavrosnikou@sch.g	**University of Macedon**	**Greece**
Smartphones, Studio-Based Learning, and	**Reardon, S.**	susan.reardon@iadt.ie	**Institute of Art, Design**	**Ireland**
PiktoMir: teaching programming concepts to	**Rogozhkina, I.**	snleo@mail.ru	**Moscow State Univers**	**Russian Federation**
	Sáez-López, J.	jmsaezlopez@edu.uned	**Spanish National Univ**	**Spain**
Visual programming languages integrated a	**Sáez-López, J.**			
	Sáez-López, J.			
The users who touched the ceiling of scratc	**Tanrikulu, E.**	elifcik@tzi.de	**University of Bremen**	**Germany**
Teaching sorting and searching algorithms t	**Tuparov, G.**	ddureva@swu.bg	**South-Western Univer**	**Bulgaria**
During Automatic Program Animation, Expla	**Wang, P.**	pwang@student.uef.fi	**University of Eastern F**	**Finland**
Troubleshooting assessment: an authentic	**Webb, D.**	dcwebb@colorado.edu	**University of Colorado**	**United State**
Learning programming using objects-first ap	**Woei, L.**	swling@mmu.edu.my	**Multimedia University**	**Malaysia**
The analysis and application of an educatio	**Yoon, I.**	ilkyu.yoon@inc.korea.ac	**Korea University**	**Korea**
An investigation of the effects of programmi	**Yukselturk, E.**	eyukselturk@gmail.com	**Kırıkkale University**	**Turkey**

The Combined Use of Lego Mindstorms NX	Papadakis, S.	stpapadakis@gmail.com	University of Crete	Greece
Leveraging Visual Programming Language	Rahman, F.	farahman@fiu.edu	Florida International Uni	United State
Code Puzzle: ActionScript 2.0 Learning App	Rahman, F. Rozali, N.	nfaizah38@live.utm.my	Universiti Teknologi Mal	Malaysia
Teaching Programming in Secondary Educa	Rozali, N. Merkouris, A.	c14merk@ionio.gr	**Ionian University**	**Greece**
Using App Inventor for creating apps to sup	Ortega, A.	antonio.ortega@um.es	University of Murcia	Spain

Organization	Type	Publication	Year	Pages	Number o
ACM International Conference Proceeding Series	Conference of Proceedings	WiPSCE´15	2015	76-79	4
	Journal Article	Journal of Visual Languages &	2011	375-384	10
	Journal Article	Computers and Education	2016	202-215	14
	Journal Article	British Journal of Educational T	2011	624-637	14
	Journal Article	Journal of Parallel and Distribu	2017	150-162	13
	Journal Article	British Journal of Educational T	2014	285-302	18
5th World Conference on Educational Sciences - W	Journal Article	Procedia - Social and Behavio	2014	5188-5193	6
International Conference on Functional Programmir	Conference Proceedings	Proceedings of the 2007 SIGF	2007	93-99	7
ACM	Conference Proceedings	Proceedings of the 14th Intern	2015	130-139	10
ELSEVIER	Journal Article	Computers & Education	2010	69-87	19
ACM	Conference Proceedings	Proceedings of the eleventh a	2015	237-246	10
Proceedings of the Workshop in Primary and Secor	Conference of Proceedings	WiPSCE´15	2015	69-72	4
	Journal Article	Computers & Education	2013	320-331	12
2014 IEEE Global Engineering Education Conferer	Conference of Proceedings	2014 IEEE Global Engineering	2014	1042-1045	4
	Journal Article	ACM Transactions on Comput	2014	23:1-23:15	15
World Conference on Educational Technology Rese	Journal Article	Procedia - Social and Behavio	2011	601-605	5
	Journal Article	Computers and Education	2016	129-141	13
World Conference on Educational Technology Rese	Journal Article	Procedia - Social and Behavio	2011	764-769	6
5th World Conference on Educational Sciences - W	Journal Article	Procedia - Social and Behavio	2014	2962-2966	5
12th Koli Calling International Conference on Comp	Conference of Proceedings	Proceedings of the 12th Koli C	2012	100-109	10
The World Conference on Learning, Teaching and A	Journal Article	Procedia - Social and Behavio	2010	903-907	5
	Journal Article	Jurnal Teknologi	2015	47-53	8
	Journal Article	Cluster Computing	2016	529-546	18
	Journal Article	British Journal of Educational T	2016	789-801	13

	Journal Article	Advances in Intelligent Syste	2017	193-204	12
SIGITE 2018 - Proceedings of the 19th Annual SI	Conference of Proceedings		2018	172-177	6
6th ICT International Student Project Conference:	Conference of Proceedings		2017	1-4	4
	Journal Article	ACM Transactions on Computi	2017	9:1--9:22	22
	Journal Article	Computer Applications in Engi	2018	431-448	18

DOI	Abstract	Country	Institution	Level
http://dx.doi.org/10.1145/28	In Alshaigy the objective of	United Kingdom	Oxford Brookes University	first year
http://dx.doi.org/10.1016/j.j	Ben-Ari in this paper preser	Israel-Finland	Weizmann Institute of Scier	Research
http://dx.doi.org/10.1016/j.c	Chao in this study aims to a	Taiwan	Yuan Ze University	First level
http://dx.doi.org/10.1111/j.1	In Esteves conducted an a	Portugal	University of Trás-os-Monte	second semester
http://dx.doi.org/10.1016/j.j	In Feng, presents an appro	USA	Virginia Tech.	Seventh- grade girls middle
http://dx.doi.org/10.1111/bj	In Feng study was to invest	Taiwan	elementary school in northe	sixth grade - elementary sch
http://dx.doi.org/10.1016/j.s	Horváth research a problem	Slovak Republic	Trnava University	First year of undergraduate
http://dx.doi.org/10.1145/12	In Huch decided to install a	Germany	University Kiel	the last three years at high
http://dx.doi.org/10.1145/27	In this paper, Kafai we exar	USA	high school	school freshman
http://dx.doi.org/10.1016/j.c	This In this paper, Kordaki p	Greece	Patras University	12th-grade students
http://dx.doi.org/10.1145/27	Using a pretest-posttest stu	USA	University of Washington	
http://dx.doi.org/10.1145/28	In this work, Merkouris expl	Greece; Norway	secondary education schoo	first grade class of a secon
http://dx.doi.org/10.1016/j.c	Navarrete propose a case s	USA	**Middle school** in a souther	Middle school / grade levels
http://dx.doi.org/10.1109/EI	Nikou in this study innovati	Greece	Senior-high school	Introductory programming c
http://dx.doi.org/10.1145/26	Reardon used exploratory c	Ireland	Institute of Art, Design and	First level
http://dx.doi.org/10.1016/j.s	In Rogozhkina the goal of r	Russia	Moscow kindergarten	preschoolers
http://dx.doi.org/10.1016/j.c	The aim of this study is to a	Spain	UNED/ 5 different schools	5th to 6th grade primary sch
http://dx.doi.org/10.1016/j.s	In this paper Tanrikulu look	Germany	University of Bremen	
http://dx.doi.org/10.1016/j.s	In Tuparov presents the ex	Bulgaria	South-West University "Neo	Introductory course of prog
http://dx.doi.org/10.1145/24	In this paper, Wang inspect	Finland	Finnish university	Postgraduate
http://dx.doi.org/10.1016/j.s	Webb designed an authent	USA	North **Middle School**, Cent	Middle school / ages 12-14
http://dx.doi.org/10.11113/j	In this paper Woei shares a	Malaysia	private university	postgraduate
http://dx.doi.org/10.1007/s1	Yoon in this study the objec	Korea	Korea University	
http://dx.doi.org/10.1111/bj	In Yukselturk, The purpose	Turkey	Kırıkkale University, Kırıkkal	Elective course

10.1007/978-3-319-55553	In this paper Papadakis pre	Greece	General Lyceum	Secondary School
10.1145/3241815.32425	Our goal, in this paper, is to report our experiences on designing and delivering a curriculum that teaches progr			
10.1109/ICT-ISPC.2017.8	The purpose of this researc	Malaysia	Universiti Teknologi Malaysi	postgraduate students
10.1145/3025013	In this work, we explore the benefits of learning to code for tangible computers, such as robots and wearable cc			
10.1002/cae.21895	We present a case study th	Spain, Murcia	center IES Ingeniero de la Cierva	

Method	Participants	Quantity	Time	Educational program
Experiment (*preliminary stu*	first year undergraduate students		1 semester, 8 weeks	PILet
Experiment	high-school students		the year	Jeliot
Exploration	College students majoring in informa	158	8 weeks	Visual problem-solving envi
Experiment	3 group: 14 students beginner (A);	34	1pre+4 cycles (15 months)	Linden Scripting Language
Activity	Seventh- grade girls from 5 to 6 loc	100	Four parallel 50-min activity	Snap
Cuasi-Experiment	Students between 11 and 12 years	232	40 min per week for 8 week	Scratch
Interviews	first year of undergraduate study			Logo
Experiment	Female students / age of 15 to 18	60 / 20 each time	One week each year (3)	Erlang
Workshop	4 girls, 13 boys, ages 13-15	17		Scratch
Pilot study	nine 12th grade (18-year-old)	9	3 months	C; LECGO
Study design	learners aged 18	60		Python; Gidget
Experiment	Students between twelve and to thi	36	Part of one course	Scratch
Case study	Students / 6, 7, 8 grade level	12	In the second half of the ye	Action Script; Flash softwar
Questionnaire	Average age: 16.4 years old	38		Scratch; App Inventor
Case study	First-year undergraduate students	53	Three full academic years	Scratch; Java
Experiment	preschoolers	42	8 weeks	PiktoMir
Case study	primary school students	107	two academic years	Scratch
Workshop	five teams of computer science and	20		Scratch
Pilot study; Survey	Freshman students	80 / 32 survey		C; Learning Objects
Experiment	computing postgraduate and Maste	18		Jeliot 3; Java
Evaluation study	Students / ages 12-14	24	Five weekly two-hour sessio	AgentCubes
Pilot study	postgraduates students	9	2-5 times a week	Alice; Unity
Case study	20-expert panels; freshmen majorin	20/26	3 days	RUR-PLE
Cuasi-Experiment	preservice IT teachers	151	one semester	Scratch

Case study	first-year students / 15 and 16 years	24 students (11 boy	2014-2015	App Inventor/Lego Mindsto
Experiment	from grade 7 and 8	34 middle school stu	7 days (7 Saturdays)	App Inventor
Survey	postgraduate students	10 postgraduate		Adobe Flash CS6
Pilot study	first level of a middle school class	36 students (betwee	2 month	Scratch
Case study		23 students and 2 t	10 hr, distributed in 2 classe	App Inventor

Results	Objective
The study results will establish whether a relationship does exist between the teaching process and the prefe	Improve to learning of programming
	Increases students' condence
	Improve attention in the classroom
This article describe the history of the development of the Jeliot programan imation system, as well as the ext	Improve to learning of programming
The results of this study show that visual problem solving through programming constitutes an effective appr	Improve to learning of programming
Results support the notion that it is possible to use this environment for better effectiveness in the learning o	Improve to learning of programming
	Computational thinking across the curriculum
this paper presents an approach that reduces the learning curve to parallel programming by introducing such	Increase the learning of the parallel programmin
This study obtained three significant findings related to programming performance: (1) students with nonspec	Improve to learning of programming
The new model of introductory programming course teaching was designed; after first run, there were severa	Implementation of a programme of study for pro
The framework was successfully utilized in a programming course for pupils in their last three school years	Improve to learning of programming
revealed that it is a feasible, yet complex activity that engaged youth in crafting and coding. ... proposed to e	Improve to learning of programming
The data emerging from this field evaluation study indicates that students gain better results within LECGO t	Improve to learning of programming
These findings suggest that discretionary online educational technologies can successfully teach novices int	Assessment the learning effectiveness
The results of the experiment have confirmed that learning computer programing with ubiquitous target platfo	Learn to code ubiquitous computers
	Improve computacional thinking
Findings suggest that the creative thinking process in student-centered game creation learning approach ma	Improve to learning of programming
The current study contributes to understanding the transition in motivation to learn programming using Scrato	Increase student motivation for learning to progr
The students were motivated and engaged by the learning experience and were able to develop sophisticat	Improve to learning of programming
The obtained results allow us to assume that PiktoMir provides a working example of a natural textless enviro	Evaluate or compare an educational program
	Computational thinking across the curriculum
Due to the afore mentioned benefits and positive results obtained in this research, it is recommended to impl	Evaluate or compare an educational program
	Improve computacional thinking
The experiences of this particular user group suggest adding some standard integrated development enviror	Evaluate or compare an educational program
The results from the pilot study, discussed in the paper, demonstrate an increase of student interest and a le	Learn use of simulation-based Learning Objects
The results indicate that animation- first approach is significantly more effective. On the grounds of these find	Assessment the learning effectiveness
These results suggest that troubleshooting scenarios can be used to assess student fluency in computer pro	Assessment the learning effectiveness
However, upon the completion of study, majority of the participants (83.3%) acknowledged that they have be	Increase student motivation for learning to progr
In this study, we suggested that an EPL for novice programmers and primary students is not appropriate for l	Analyze the EPL selection criteria
The results also showed that the preservice IT teachers' negative attitudes towards programming decreased	Assessment the learning effectiveness

The results of the intervention produced positive outcomes, students through their involvement seem to have	Improve to learning of programming
The results shows female and male students' attitudes toward computing increased statistically significantly, t	Improve to learning of programming
	Increase student motivation for learning to progr
This study found that through the implementation of PBL in the mobile game, students agreed that mobile g	Improve to learning of programming
	Increase student motivation for learning to progr
Our findings suggest that computer programming should be introduced through multiple target platforms (e.g	Improve to learning of programming
The experience has been performed successfully and the students have expressed their satisfaction with the	Develop customized m-learning apps

University Educatic	Site web	Type language Educational tool
University of Easte	https://cs.joensuu.fi/je	Program animation system Block Language
Linden Lab	http://go.secondlife.cc	Programming language
University of Califo	http://snap.berkeley.e	Block Language
Massachusetts Ins	https://scratch.mit.edu	Block Language
UCBLogo	http://el.media.mit.edu	Programming language
University of Zurich	https://www.swissedu	Block Language
Massachusetts Ins	https://scratch.mit.edu	Block Language
Laboratorios Bell		Programming language
Python Software F	https://www.python.or	Programming language
Massachusetts Ins	https://scratch.mit.edu	Block Language
Adobe: ActionScri	http://www.adobe.con	Programming language
Massachusetts Ins	https://scratch.mit.edu	Block Language
Massachusetts Ins	https://scratch.mit.edu	Block Language
Foreign Service In	http://www.piktomir.ru/	Block Language
Massachusetts Ins	https://scratch.mit.edu	Block Language
Massachusetts Ins	https://scratch.mit.edu	Block Language
Laboratorios Bell		Programming language
University of Easte	https://cs.joensuu.fi/je	Program animation system
University of Color	https://www.agentcub	Block Language
Carnegie Mellon U	https://www.alice.org/	Block Language
GitHub	https://github.com/arc	Educational tool to help learn
Massachusetts Ins	https://scratch.mit.edu	Block Language

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