THE INTEGRATION OF INNOVATIVE NEW MEDIA TECHNOLOGIES INTO EDUCATION: FATIH PROJECT IN TURKEY AND ISTE'S TEACHER STANDARDS

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Abstract

New media switching the paradigms of traditional education requires the change of national education systems as well. The last project designed for integrating innovative technology supported education environments in education is Increasing Opportunities Improving Technology Movement (FATIH) Project, which is a countrywide, is now in the pilot application phase. In the scope of this pilot application, 52 schools in 17 cities have been provided tablet computers, interactive boards, document cameras and multifunctioning printers as new media technologies. Teachers of FATIH Project should comply with ISTE's NETS*T which has been accredited standards for teachers on 2008 to benefit from advanced technology in education. The aim of this research is to determine the level of compliance between FATIH Project teachers' usage of new media oriented innovative technology supported education environment and what ISTE's NETS*T actually required. 1005 teachers who are using the new media provided by FATIH Project in 52 schools located in 17 cities have been asked to fill in an online survey composed of 162 items, which has been prepared and analyzed by Atatürk University staff: (Göktaş & at all. 2012). It has been observed that teachers' pedagogical applications in innovative technology supported education environments of FATIH Project does not comply with ISTE's NETS*T standards..

Keywords

New Media Supported and Oriented Education, FATIH Project, ISTE's NETS*T, Innovative Technology.

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YENİLİKÇİ YENİ MEDYA TEKNOLOJİLERİNİN EĞİTİME ENTEGRASYONU: FATİH PROJESİ VE ISTE ÖĞRETMEN STANDARTLARI

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Özet

Geleneksel eğitim paradigmalarını değiştiren yeni medya ulusal eğitim sistemlerinde de değişimi gerektirmektedir. Eğitime yenilikçi teknoloji destekli eğitim ortamlarını entegre etmek için tasarlanan son proje, Fırsatları Artırma Teknolojiyi İyileştirme Hareketi (FATİH) projesi şimdi ülke çapında pilot uygulama aşamasındadır. Bu pilot uygulama kapsamında, 17 ildeki 52 okula yeni medya teknolojileri olan tablet bilgisayarlar, interaktif tahtalar, doküman kameralar ve çok fonksiyonlu yazıcılar sağlanmıştır. FATİH Projesi öğretmenlerininde 2008 yılında öğretmenlerin ileri teknolojilerden yararlanması için akredite edilen ISTE NETS standartları ile uyumlu olması gerekmektedir. Bu araştırmanın amacı, FATİH Projesi öğretmenlerin yeni medya odaklı yenilikçi teknoloji destekli eğitim ortamının kullanımında ne düzeyde ISTE NETS*T standartlarına uyum sağladıklarını belirlemektir. 17 ilde 52 okulda Atatürk Üniversitesi personeli tarafından 162 soruluk bir online anket 1.005 öğretmene uygulanarak analiz edilmiştir (Göktaş ve diğerleri, 2012). Bu araştırma sonucunda FATİH Projesi tarafından sağlanan yenilikçi teknoloji destekli eğitim ortamlarının öğretmenler tarfaından pedagojik amaçlı kullanımının ISTE NETS*T standartlarına uygun olmadığı gözlenmiştir.

Anahtar Kelimeler

Yeni Medya Destekli ve Odaklı Eğitim, FATİH Projesi, ISTE-NETS*T, Yenilikçi Teknoloji.

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INTRODUCTION

The new media oriented technology usage in education converts an information sharing classroom to a global information sharing classroom. Today, adoption of technology-oriented method of training has become a requirement rather than a need. New media is a communication tool, and communication with new media is one of the concepts put forward the information society. New media includes web sites, multimedia applications, such as interactive broadcasting content with a large number of documents, images, audio, and text converted into digital data that can be accessed at any time and be transmitted from point to point over the network on the basis of the principles of modularity and variability. One of the main characteristics of the new media oriented education is bringing together the use of digital tools when compared to traditional education system, students, teachers and parents increase the interaction between them. For example, video chat software, audio and image, image with text, sound, image, and text gather together and provided as an alternative to the teaching and learning process. E-learning as a component of flexible learning describes a wide set of applications and processes which use any available new media in education. It includes computer-based learning, web-based learning, virtual classrooms and digital collaboration. E-learning improves course content dissemination; classroom recording; field recording; study support; file storage and transfer (Belanger, 2005). The supporting technologies of e-learning are relatively inexpensive and easy to use. Like blogging, students can be producers of content, rather than passive receivers. The portable and on-demand nature learning environment makes technology with potential for e-learning (Meng, 2005).

Standards form the basis of accreditation. Technology-based education programs with technology assisted education model that is designed to be accredited must include standards at the international level. What should be the minimum specifications of qualified teachers' pedagogical practices to demonstrate success in technology-assisted education model at the application level? To respond to this question standards must be established. The quality of the education system and teacher development process as a whole will improve with the creation of standards and accreditation of technology aided education.

International Society for Technology in Education (ISTE) was founded in 1979. ISTE's mission is to advance excellence in learning and teaching through the innovative and effective uses of technology. ISTE is the premier educational technology membership association for educators and leaders. More than 100.000 ISTE members are located across the globe. ISTE has become the trusted source for professional development, knowledge generation, advocacy, and leadership for innovation. ISTE supports its members with information, networking opportunities, and guidance as they face the challenge of transforming education. ISTE developed the National

Education Technology Standards (NETS) with input from the field and pioneered their use among educators. The NETS are the standards for learning, teaching, and are widely recognized and adopted worldwide. The NETS are important because of the technology has forever changed not only what we need to learn, but the way we learn. The NETS set a standard of excellence and best practices in learning, teaching, and leading with technology in education. ISTE has three type of NETS: 1) Advancing digital age learning for students, 2) Advancing digital age teaching for educators, 3) Advancing digital age leadership for administrators and leaders. ISTE's NETS for Teachers (NETS*T) are the standards for evaluating the skills and knowledge educators need to teach, work, and learn in an increasingly connected global and digital society (ISTE, 2008). Indicated five standards determining the qualifications and proficiencies of educators must have. According to these standards, teachers should demonstrate the knowledge, skills and processes relating to the new media environment as the representatives of an innovative profession and encourage learning and creativity of students as well as being role model for them on designing digital learning, self-improvement, using resources effectively based on performance criteria and life-long learning. In this way, this education will enable the conversion of an entrepreneur student profile to a sustainable and willing citizen profile.

In Turkey, some projects have been performed about the use of technology in education in the recent past. The last project designed for integrating innovative technology supported education environments in education is FATIH Project, which is a countrywide, is now in the pilot application phase. In the scope of this pilot application, 52 schools in 17 cities have been provided tablet computers, interactive boards, document cameras and multifunctioning printers as new media technologies. It is aimed that interactive boards purchased in this project used by teachers to provide learning experiences to every student in their classrooms. The tablet computers provided students and teachers to make connection to the internet and study e-books approved by Ministry of National Education. Document cameras were provided to teachers to enable them to show 2D, 3D content to their students. Multifunctioning printers are aimed to be used to take printouts for educational purposes. Moreover, the construction of Educational Information Network (Eğitim Bilişim Ağı) (EBA) e-learning platform for providing the e-content materials related to courses for learners still in progress. Therefore, It is very significant to adapt International Educational Technology Standards for Turkey and complete missing aspects regarding implementation in order to resolve this deficiency.

FATIH Project aims to integrate the technology-assisted education into educational system. Teachers of FATIH Project should also comply with ISTE's NETS*T standards which has been accredited by many countries and has issued Standards for teachers on 2008 to benefit from advanced technology

in education. However, there is insufficient data about compliance of the new media oriented environment of FATIH Project with international standards. For this reason, this study was needed to determine to what extent teachers' pedagogical practices in FATIH Project has complied with a collection of NETS*T standards developed by ISTE.

Purpose of the Research

The aim of this research is to determine the level of compliance between FATIH Project teachers' usage of new media oriented innovative technology supported education environment and what ISTE's NETS*T standards actually required. Following Research questions were defined for this purpose:

1. What is the level of compliance of FATIH Project teachers pedagogical applications in the pilot project with the facilitate and inspire student learning and creativity ISTE's NETS*T?
2. What is the level of compliance of FATIH Project teachers pedagogical applications in the pilot project with the designing and developing digital age learning experiences and assessments ISTE's NETS*T?
3. What is the level of compliance of FATIH Project teachers pedagogical applications in the pilot project with the modeling digital age work and learning ISTE's NETS*T?
4. What is the level of compliance of FATIH Project teachers pedagogical applications in the pilot project with the promoting and modeling digital citizenship and responsibility ISTE's NETS*T?
5. What is the level of compliance of FATIH Project teachers pedagogical applications in the pilot project with the engaging in professional growth and leadership ISTE's NETS*T?

METHOD

Research Method

In this study, FATIH pilot project teachers' pedagogical practices based on a survey conducted to the them for the evaluation of the pilot project were compared with ISTE-NETS*T. 1005 teachers involved in the implementation of FATIH Project were responded to 162 item questionnaire to identify their perceptions of FATIH Project. Teacher survey data analysis results which have been prepared and analyzed by Atatürk University staff (Göktaş & et al., 2012) were used to identify their opinions about pedagogical usage of the new media technologies of teachers in FATIH Project pilot study. The results of data analysis of questionnaire surveys were prepared in May 2012. Results of this analysis reflect the opinions of teachers about how much the learning and

teaching process have been affected by innovations arising with FATIH Project. These related items were classified in tables according to standards that they comply with. The average, standard deviation, frequency and percentages of survey questions were also included into the tables.

Data Analysis

The statistical analysis results of the items were comparatively analyzed to determine the level of compliance of these responses to the standards. 52 of these 162 items were determined to be compliant with the standards and performance indicators of teacher ISTE's NETS*T. The item numbers of these items selected from evaluation report were presented in Table 1, 2, 3, 4 and 5. Percentages and frequencies of responses to the items in the questionnaire were analyzed descriptively to identify the level of teachers' compliance with ISTE's NETS*T standards. Questionnaire includes two different likert type items. One is from totally disagree to totally agree. Another is from none to very frequently. Compliance level of these teachers' pedagogical applications with ISTE's NETS*T standards have been decided as "completely disagree" or "none" when mean is between 1 and 1.5, "disagree" or "rarely" when mean is between 1.5 and 2.5, "undecided" or "sometimes" mean is between 2.5 and 3.5, "agree" or "frequently" when mean is between 3.5 and 4.5 and "totally agree" or "very frequently" when mean is between 4.5 and 5.

FINDINGS

In this section, research questions will be answered according to five ISTE's NETS*T standards and their 20 performance indicators. Data analysis results and findings about the comparison of ISTE's NETS*T standards and teacher pedagogical applications identified from teacher survey applied to FATIH Project teachers will be presented.

First Standard: Facilitating and Inspiring Student Learning and Creativity

The first question of this study is to find out if FATIH Project pilot school teachers facilitate and inspire student learning and creativity. Items related to this standard were identified and percentages and frequencies of responses of teachers to these items were analyzed in order to compare teachers' opinions about this standard. Comparative descriptive analysis was performed to identify to what extent the teachers facilitate and inspire student learning and creativity were determined. Facilitating and inspiring student learning and creativity standard includes four performance indicators. These performance indicators were shown in Table 1. Table 1 also shows the comparison analysis results of teachers' opinions with the performance indicators.

Table 1.Comparison results of facilitating and inspiring student learning and creativity standard with teachers' opinions on pedagogical usage of the new media technologies in FATIH Project

Promote, support, and model creative and innovative thinking and inventiveness	N		Totally disagree /None	Disagree / Rarely	Undecided / Sometimes	Agree / Frequently	Totally Agree / Very Frequently	x	Level of Participation
73. Helped me to review my teaching methods and strategies.	881	%	9,1	13,6	18,3	47,1	11,9	3,39	Undecided
		f	80	120	161	415	105		
71. Dependence of students on me has decreased.	887	%	10,6	27,9	23,8	30,3	7,3	2,96	Undecided
		f	93	245	209	266	64		
162. Helped teachers to search for ways of self-innovation as an influence on school culture and atmosphere.	807	%	6,6	11,4	17,7	44,6	19,7	3,59	Agree
		f	53	92	143	360	159		
52. Facilitated students to reach the benefits of courses.	890	%	6,4	11,9	23,1	45,2	13,4	3,47	Undecided
		f	57	106	206	402	119		
Engage students in exploring real-world issues and solving authentic problems using digital tools and resources	N		Totally disagree /None	Disagree / Rarely	Undecided / Sometimes	Agree / Frequently	Totally Agree / Very Frequently	x	Level of Participation
Promote student reflection using collaborative tools to reveal and clarify students' conceptual understanding and thinking, planning, and creative processes	N		Totally disagree /None	Disagree / Rarely	Undecided / Sometimes	Agree/Frequently	Totally Agree / Very Frequently	x	Level of Participation
80. Helped me to provide faster feedback to students.	867	%	6,3	16,1	25,5	42,6	9,5	3,33	Undecided
		f	55	140	221	369	82		
Model collaborative knowledge construction by engaging in learning with students, colleagues, and others in face-to-face and virtual environments	N		Totally disagree /None	Disagree / Rarely	Undecided / Sometimes	Agree / Frequently	Totally Agree / Very Frequently	x	Level of Participation
33. I communicate with students besides courses.	940	%	60,6	11,8	16,5	8,4	2,8	1,81	Rarely
		f	570	111	155	79	26		

Teachers showed mostly firmly participation and undecided participation to promoting, supporting, and modeling creative and innovative thinking and inventiveness performance indicator. Teacher opinions about engaging students in exploring real-world issues and solving authentic problems using digital tools and resources performance indicator cannot be identified since no related item was found in questionnaire data analysis results for comparison. Teachers are mostly undecided on promoting student reflection using collaborative tools to reveal and clarify students' conceptual understanding and thinking, planning, and creative processes performance indicator. Teachers also rarely participate to modeling collaborative knowledge construction by engaging in learning with

students, colleagues, and others in face-to-face and virtual environments performance indicator.

Comparison results showed that teacher' responses support and be in harmony with mostly the first performance indicator of facilitating and inspiring student learning and creativity standard. On the other hand the other performance indicator of this standard was not supported by teachers. FATIH Project teachers are mostly rarely participating and undecided about compliance with facilitating and inspiring student learning and creativity standard.

Second Standard: Designing and Developing Digital Age Learning Experiences and Assessments

The second question of this study is to identify the level of FATIH Project pilot application school teachers' compliance with designing and developing digital age learning experiences and assessments standard. To identify the level of alignment of FATIH Project pilot school teachers to this standard, teacher survey items related to this standard were identified and the frequency and percentages of responses of teachers were used to compare teachers' opinions with the performance indicators of the standard. Designing and developing digital age learning experiences and assessments standard includes four performance indicators. Comparative descriptive analysis done and results of what extend performance indicators of this standard are determined to be compatible with teacher opinions were shown in Table 2.

Teachers commonly show undecided and rarely participation to design or adapt relevant learning experiences that incorporate digital tools and resources to promote student learning and creativity performance indicator. Teachers' opinions also show occasionally participation to developing technology-enriched learning environments that enable all students to pursue their individual curiosities and become active participants in setting their own educational goals, managing their own learning, and assessing their own progress performance indicator. Teachers rarely and occasionally participate to customizing and personalizing learning activities to address students' diverse learning styles, working strategies, and abilities using digital tools and resources performance indicator.

Table 2.Comparison results of designing and developing digital age learning experiences and assessments standard with teachers' opinions on pedagogical usage of the new media technologies in FATIH Project.

	N		Totally disagree /None	Disagree / Rarely	Undecided / Sometimes	Agree / Frequently	Totally Agree / Very Frequently	x	Level of Participation
78. Helped me to arrange activities in compliance with individual differences of students.	867	%	6,8	19,4	27,2	36,6	10	3,24	Undecided
		f	59	168	236	317	87		
79. Helped me to keep track of changes on student success in a better way.	869	%	6	22,7	30	33,4	7,9	3,15	Undecided
		f	52	197	261	290	69		
26. I will use three dimensional content on interactive board.	937	%	39,8	16,6	25,7	14,1	3,7	2,25	Rarely
		f	373	156	241	132	35		
Develop technology-enriched learning environments that enable all students to pursue their individual curiosities and become active participants in setting their own educational goals, managing their own learning, and assessing their own progress	N		Totally disagree /None	Disagree / Rarely	Undecided / Sometimes	Agree / Frequently	Totally Agree / Very Frequently	x	Level of Participation
31. I will enrich courses by using tablets with audial and visual elements.	954	%	26,9	14,9	22,7	24,9	10,5	2,77	Sometimes
		f	257	142	217	238	100		
10. By using interactive board on courses, I will enrich my course with audial and visual elements.	961	%	13,5	5,2	22,8	37,1	21,3	3,48	Sometimes
		f	130	5	219	57	205		
51. Pace of learning has increased with the enrichment of course content.	890	%	8,1	13,3	27,3	38,5	12,8	3,35	Undecided
		f	72	118	243	343	114		
60. Participation of students to discussions has increased.	883	%	8,5	23,1	29	32,6	6,8	3,60	Agree
		f	75	204	256	288	60		
30. The use of tablets by students has increased student participation and interaction.	940	%	26,6	16,1	22,6	25,3	9,5	2,75	Sometimes
		f	250	151	212	238	89		
Customize and personalize learning activities to address students' diverse learning styles, working strategies, and abilities using digital tools and resources	N		Totally disagree /None	Disagree / Rarely	Undecided / Sometimes	Agree / Frequently	Totally Agree / Very Frequently	x	Level of Participation
32. During the lesson i will make classroom activities with students usage tablets.	936	%	32,3	15	24,9	21,2	6,7	2,55	Sometimes
		f	302	140	233	198	63		
14. By using interactive board on lesson i will make classroom activities each of students.	957	%	19,5	11,8	31,1	29,5	8	2,95	Sometimes
		f	187	113	298	282	77		
Provide students with multiple and varied formative and summative assessments aligned with content and technology standards and use resulting data to inform learning and teaching	N		Totally disagree /None	Disagree / Rarely	Undecided / Sometimes	Agree / Frequently	Totally Agree / Very Frequently	x	Level of Participation
28. I will use interactive board for testing and evaluation.	930	%	38,7	15,4	26,1	15,8	4	2,31	Rarely
		f	360	143	243	147	37		
42. I will use tablets for testing and evaluation.	937	%	53,6	14	14,4	9,7	3,3	1,95	Rarely
		f	502	131	182	91	31		
82. The diversity of testing and evaluation methods has increased.	865	%	8,6	20,6	22,7	37,9	10,3	3,21	Undecided
		f	74	178	196	328	89		

Providing students with multiple and varied formative and summative assessments aligned with content and technology standards and use resulting data to inform learning and teaching performance indicator, teachers showed rarely and undecided participation. These results indicates that teachers are mostly rarely participating and undecided about compliance with developing digital age learning experiences and assessments standard.

Third Standard: Modeling Digital Age Work and Learning

The third question of this study is to find out to what extend FATIH Project pilot school teachers model digital age work and learning standard. Items related to this standard were identified and percentages and frequencies of responses of teachers to these items were analyzed in order to compare teachers' opinions about this standard. Comparative descriptive analysis was performed to identify to what extent the teachers model digital age work and learning were determined. Modeling digital age work and learning standard includes four performance indicators.

Table 3.Comparison results of modeling digital age work and learning standard with teachers' opinions on pedagogical usage of the new media technologies

Design or adapt relevant learning experiences that incorporate digital tools and resources to promote student learning and creativity	N		Totally Disagree /None	Disagree/ Rarely	Undecided/ Sometimes	Agree/Frequently	Totally Agree/ Very Frequently	X	Level Of Prrticiption
8. One of my objectives of using an interactive board is to attract and motivate students.	960	%	15,4	9,3	25	36,5	13,9	3,24	Sometimes
		f	148	89	240	350	133		
24. I will transfer content of interactive boards to tablets.	935	%	66,7	12,4	13,4	6,4	1,1	1,63	Rarely
		f	624	116	125	60	10		
29. I will attract and motivate students by using an interactive board.	939	%	28	16,7	23,7	22,5	9,1	2,68	Sometimes
		f	263	157	223	211	85		
38. One of my objectives of using tablets is to develop electronic content.	933	%	52,9	15,4	19,8	9,4	2,4	1,93	Rarely
		f	494	144	185	88	22		
34. I will use e-school applications with tablets.	936	%	30	19	26,5	19,1	5,3	2,51	Sometimes
		f	281	178	248	179	50		
37. I will transfer content of tablets to interactive boards.	929	%	54,8	12,1	18,4	9,8	5	1,98	Rarely
		f	509	113	171	9,1	46		
41. I will choose photographs and videos via tablets as my course content.	932	%	69,6	12	10,9	6	1,4	1,58	Rarely
		f	649	112	102	56	13		
43. I will use e-materials for sharing students via document camera.	920	%	63,3	10,1	14,3	9,6	2,7	1,78	Rarely
		f	582	93	132	88	25		
44. I will present three dimensional materials in electronic format via document cameras.	937	%	67	9,8	12,9	7,7	26	1,16	None
		f	628	92	125	72	34		
47. I will scan printed materials via all in one printers.	857	%	50,9	14,5	18,3	12,6	3,7	2,04	Rarely
		f	436	124	157	108	32		
49. I will print contents of interactive boards via all in one printers.	887	%	64	11	15,8	7,2	1,9	1,72	Rarely
		f	568	98	140	64	17		
13. I will present electronic content via interactive boards.	954	%	19,3	10	26,2	32,6	11,9	3,08	Sometimes
		f	184	95	250	311	114		
48. I will print contents of tablets via all in one printers.	872	%	69,6	9,9	12,3	6,2	2,1	1,61	Rarely
		f	607	86	107	54	18		

Table 3 (Continued)

Develop technology-enriched learning environments that enable all students to pursue their individual curiosities and become active participants in setting their own educational goals, managing their own learning, and assessing their own progress	N		Totally disagree /None	Disagree / Rarely	Undecided / Sometimes	Agree / Frequently Totally Agree / Very Frequently		X	Level of Participation
70. Cooperation with my colleagues has increased.	883	%	8,2	20,5	21,7	40	9,6	3,22	Undecided
		f	72	181	192	353	85		
152. It has increased information sharing between information technology teachers and others	806	%	7,6	13,4	21,5	43,8	13,8	3,43	Agree
		f	61	108	173	353	111		
153. It has increased communication between parents and teachers.	886	%	17	35,7	28,1	15,5	3,7	2,53	Undecided
		f	137	287	226	125	30		
154. It has increased communication between teachers.	833	%	10,2	18,2	24	37,5	10,1	3,19	Undecided
		f	85	152	200	312	84		
81. It helped to promptly share the changes in student success with other stakeholders.	864	%	7,5	21,6	29,7	34	7,1	3,11	Undecided
		f	65	187	257	294	61		
65. It has increased self-confidence of students.	880	%	7,2	18,4	29,3	38,2	6,9	3,19	Undecided
		f	60	162	258	336	61		
58. It has increased the tendency of students to work together.	886	%	8,8	19,1	28,7	34,1	9,4	3,16	Undecided
		f	78	169	254	302	83		
Customize and personalize learning activities to address students' diverse learning styles, working strategies, and abilities using digital tools and resources	N		Totally disagree /None	Disagree / Rarely	Undecided / Sometimes	Agree / Frequently Totally Agree / Very Frequently		X	Level of Participation
27. I will reach different contents via internet by using interactive boards.	961	%	17,3	11,4	27,3	30,8	13,3	3,12	Sometimes
		f	165	110	262	296	128		
11. I will enable students to present their materials via interactive boards.	961	%	20,6	14,1	30,5	25,3	9,6	2,89	Sometimes
		f	197	135	292	242	92		
16. I will reach my course saved in interactive board if deemed necessary.	939	%	31,5	17,5	28,2	18,2	4,6	2,47	Rarely
		f	296	164	265	171	43		
39. I will reach learning objects on Educational Information Network (EBA) by tablets.	934	%	22,2	16,2	30,3	24	7,4	2,78	Sometimes
		f	207	151	283	224	69		
40. I will reach diverse course content on internet via tablets.	957	%	35,3	11,7	23,6	21,2	8,2	2,55	Sometimes
		f	338	112	226	203	78		

Teachers are mostly rarely participate and do not participate to demonstrating fluency in technology systems and the transfer of current knowledge to new technologies and situations performance indicator. Teachers have mostly undecided participation to collaborating with students, peers, parents, and community members using digital tools and resources to support student success and innovation performance indicator. Teachers show mostly occasionally participation and rarely participation to communicating relevant information and ideas effectively to students, parents, and peers using a variety of digital age media and formats performance indicator. No related items were found for the modeling and facilitating effective use of current and emerging digital tools to locate, analyze, evaluate, and use information resources to support research and learning performance indicator.

Comparison results indicated that teachers' responses do not support modeling digital age work and learning standard. FATIH Project teachers are mostly rarely participating and undecided about compliance with modeling digital age work and learning standard.

Fourth Standard: Promoting and Modeling Digital Citizenship and Responsibility

The fourth question of this study is to identify the level of FATIH Project pilot application school teachers' compliance with promoting and modeling digital citizenship and responsibility standard. To identify the level of alignment of FATIH Project teachers to this standard, teacher survey items related to this standard were identified and the frequency and percentages of responses of teachers were used to compare teachers' opinions with the performance indicators of the standard. Promoting and modeling digital citizenship and responsibility standard includes four performance indicators. Comparative descriptive analysis done and results of to what extend performance indicators are determined to be compatible with teacher opinions were shown in Table 4.

Table 4.Comparison results of promoting and modeling digital citizenship and responsibility standard with teachers' opinions on pedagogical usage of the new media technologies in FATIH Project.

Promote and model digital etiquette and responsible social interactions related to the use of technology and information	N		Totally disagree /None	Disagree/ Rarely	Undecided/ Sometimes	Agree/ Frequently	Totally Agree/Very Frequently	X	Level of Participation
59. The tendency of students information and collaborate has increased.	882	%	6,3	15,9	26,3	40,4	11,1	3,34	Undecided
		f	56	140	232	356	98		
62. Researching skills of students have improved.	885	%	9,7	16,6	22,6	41,1	9,9	3,25	Undecided
		f	86	147	200	364	88		
53. High-level thinking skills (analytical, critical) of students have improved.	905	%	9,1	15,9	29	34,5	11,6	3,24	Undecided
		f	82	144	262	312	105		
63. Media literacy capabilities of students have improved.	884	%	8,9	17,5	28,2	35,7	9,6	3,20	Undecided
		f	79	155	249	316	85		
61. Participation of students to extracurricular activities has increased.	883	%	9,6	24,8	29,2	29,4	5,9	2,99	Undecided
		f	85	219	258	260	61		
66. The willingness of students to make projects has increased.	880	%	9,4	21,4	28,7	33,9	6,6	3,07	Undecided
		f	83	188	253	298	58		

Teachers only show undecided participation to promoting and modeling digital etiquette and responsible social interactions related to the use of technology and information performance indicator. No related items were found for advocating, modeling, and teaching safe, legal, and ethical use of digital information and technology, including respect for copyright, intellectual

property, and the appropriate documentation of sources, Addressing the diverse needs of all learners by using learner-centered strategies providing equitable access to appropriate digital tools and resources and developing and modeling cultural understanding and global awareness by engaging with colleagues and students of other cultures using digital age communication and collaboration tools performance indicators. Comparison results indicated that teachers' responses mostly do not support promoting and model digital citizenship and responsibility standard.

Fifth Standard: Engaging in Professional Growth and Leadership

The fifth question of this study is to find out to what extend FATIH Project pilot school teachers engage in professional growth and leadership standard. Items related to this standard were identified and percentages and frequencies of responses of teachers to these items were analyzed in order to compare teachers' opinions about this standard. Comparative descriptive analysis was performed to identify to what extent the teachers engage in professional growth and leadership were determined. Engaging in professional growth and leadership standard includes four performance indicators. These performance indicators were shown in Table 5. Table 5 also shows the comparison analysis results of teachers' opinions with the performance indicator.

Table 5.Comparison results of engaging in professional growth and leadership standard with teachers' opinions on pedagogical usage of the new media technologies

Exhibit leadership by demonstrating a vision of technology infusion, participating in shared decision making and community building, and developing the leadership and technology skills of others	N		Totally disagree /None	Disagree/Rarely	Undecided /Sometimes	Agree/Frequently	Totally Agree /Very Frequently	X	Level of Participation
103. It negatively affected my leadership role in classroom.	879	%	19,5	45,5	18,1	11,9	11,9	2,38	Disagree
		f	171	400	159	105	105		
156. It affected school culture and atmosphere by increasing participation of stakeholders in school to decision making process.	801	%	11,5	22,5	34,1	26,2	6	2,93	Undecided
		f	92	178	273	210	48		
Evaluate and reflect on current research and professional practice on a regular basis to make effective use of existing and emerging digital tools and resources in support of student learning	N		Totally disagree /None	Disagree/Rarely	Undecided/Sometimes	Agree/Frequently	Totally Agree/Very Frequently	X	Level of Participation
150. It created equality of chance and opportunity in education.	806	%	10,7	21,2	23,4	33	11,7	3,14	Undecided
		f	86	171	189	266	94		

No related item were found for participating in local and global learning communities to explore creative applications of technology to improve student learning and evaluating and reflecting on current research and professional practice on a regular basis to make effective use of existing and emerging digital tools and resources in support of student learning performance indicators. Teachers showed non participation and undecided participation to exhibiting leadership by demonstrating a vision of technology infusion, participating in shared decision making and community building, and developing the leadership and technology skills of others performance indicator. Teachers showed undecided participation to contributing to the effectiveness, vitality, and self-renewal of the teaching profession and of their school and community performance indicator.

Comparison results indicated that teachers' responses mostly do not support engaging in professional growth and leadership standard. FATIH Project teachers are mostly non-participating and undecided about compliance with engaging in professional growth and leadership standard..

CONCLUSIONS AND DISCUSSIONS

Comparison results showed that FATIH Project teachers are mostly rarely participating and undecided about compliance with the first standard; facilitating and inspiring student learning and creativity. FATIH Project teachers are mostly rarely participating and undecided about second standard; designing and developing digital age learning experiences and assessments. FATIH Project teachers are mostly rarely participating and undecided about third standard; modeling digital age work and learning. Teachers' responses mostly do not support fourth standard; engaging in professional growth and leadership. FATIH Project teachers are mostly non-participating and undecided about fifth standard; engaging in professional growth and leadership.

As a result of these findings, it is possible to say that technology integration of FATIH Project pilot school teachers do not comply with ISTE's NETS*T. Therefore, complying with standards accepted by ISTE requires more attention in Turkey. ISTE anticipates that teachers should efficiently use technology in their teaching process as well as arrange classroom environments for optimum use of technology. The most important deficiencies of Turkey regarding this area is the lack of standards about training of teachers, leading investments about use of technology in education and shaping education system depending on technology supported educational environment. Teachers in pilot schools of FATIH Project are feeling difficulty about integrating their pedagogic oriented applications to new technologies as required by ISTE.

In order to solve these problems, firstly knowledge and skills of teachers about local, social and international concepts of technology integration in education, responsibilities in the developing digital culture and compliance with legal and ethical requirements should be improved. Secondly, digital tools and resources with updated features should be provided to teachers within the scope of FATIH Project. Thirdly, It is also required that teachers should cooperate with their colleagues regarding the use of these tools, participate to technology oriented learning environments, and improve their knowledge and skills on technology supported on the job trainings and application models to increase learning capabilities of students. Therefore, teachers who are showing the vision to integrate technology to education as an alternative to pedagogic applications will provide a role model for their students about taking role of social environment and improvement of their technology and leadership skills.

Recommendations for Innovative New Media Technologies into Education Environment

At the end of this study Eda's Integration of Innovative New Media Technologies into Education Model was developed as shown in Figure 1. Eda's Integration of Innovative New Media Technologies into Education Model requires: Integrated Training, Integrated Communication on New Media, Technological Model, New Technology Environments, The Psychology of Technology, Continuity of Standards, Research and Feedback Usage.

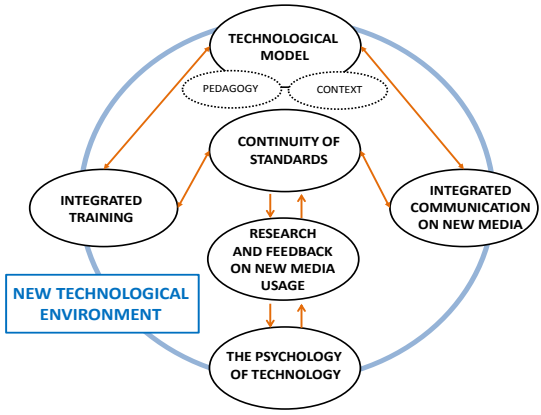

Figure 1.Integration of Innovative New Media Technologies into Education Model

Integrated Training: Effectiveness of new media supported innovative learning environments are based on student achievement and student achievement depends on the teacher. The existence of a new media tool in classrooms will have functionality if they are integrated into education and training system. Teachers should be given gradual in-service trainings by expert to develop their

knowledge and skills. These expert of the new media supported innovative learning environments can advance: a) what is the new media environment, b) what are the global standards active learning tools, c) what level and what extent they will integrate pedagogical practices into the education system.

Integrated Communication On New Media: If a project could not express itself well, unfortunately it is not possible to reach all of its goals. New media supported innovative learning environments should be able to express themselves by the influence of social media. Advertisement activities should be carried out to improve the understanding of public towards the strategic objectives of these new learning environments.

Technological Model: In the integration process of new media supported innovative learning environments into education system, we must deviate from the traditional teaching models. Therefore, a model should be produced in which effective teaching / learning methods and techniques is a priority and technology is not independent from usage of pedagogy and content knowledge.

New Technology Environments: By taking advantage of the power and flexibility of time and place independency of technology using mobile technologies, continuous and high quality learning environments should be created. While integrating new media supported innovative learning environments into education the responsibilities should be organized by coordinating activities.

The Psychology of Technology: Technology is a dynamic and multi-dimensional system. Socio-psychological theories of human behavior should be considered important in new media supported innovative learning environments and students and teachers' attitudes towards technology, personal norms, perceptions and intentions that affect the success of the new learning environment should be taken into account. The determination of psychological factors affecting the use of technology is very important.

Continuity of Standards: Universal standards that reflect the qualifications required from teachers on the new media-based learning environment, 21st century skills and the power of technology on education processes should be identified and adapted to changing technologies and constantly updated to provide continuity of innovation.

Research of Feedback On New Media Usage: To bring the qualities of new media supported innovative learning environments to the world standards, evaluation research units should perform researches by using new media and technology-supported tools and researchers and decision-makers should have interactive feedback mechanisms. In this way, needs emerging during the implementation of new media supported innovative learning environments can be met quickly and reliably theoretical background by selecting a model that has produced from literature

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GENİŞ ÖZET

Bu çalışmada Türk eğitim sisteminde teknoloji destekli eğitim uygulaması olarak yeni medya örneği olan FATİH projesi incelenmiştir. Projenin dolayısıyla eğitim sisteminin doğru bir zeminde ilerleyebilmesi için Ulusal Eğitim Teknolojileri Standartları oluşturulması gerekliliği uluslararası standartlar incelenerek ortaya konmuş ve bu kapsamda bir eğitim modeli geliştirilmiştir.

Geleneksel eğitim paradigmalarını kaydıran yeni medya düzeni, eğitim sistemimizde de değişimi gerekli kılmıştır. Küreselleşmenin giderek yerelleştiği yeni medya düzeninde dünya standartlarını yakalamak çağ itibari ile oldukça mümkün dolayısıyla değişime ve yeniliğe daha kolay adapte olmamıza imkan sağlayacak unsurlara erişimimiz, oldukça kolay bir hale gelmiş bulunmaktadır. Fatih Projesi kapsamında ülkemiz genelinde 17 ilde yer alan 52 okula tablet bilgisayar, etkileşimli tahta, doküman kamera, çok fonksiyonlu yazıcı teknolojileri sağlanmıştır. Ancak, eğitim teknolojisinin kullanımı konusunda yatırımlara yön verecek, Milli Eğitim'i yeni medya dolayımlı öğretme-öğrenme ortamına göre şekillendirecek standartlar bulunmamaktadır.

Uluslararası pek çok ülke tarafından kabul gören ISTE (International Society for Technology in Education-Uluslararası Eğitimde Teknoloji Topluluğu) tarafından, öğretmenlerin üst düzeyde eğitim teknolojilerini kullanmalarını sağlamak amacı ile Öğretmenlere Yönelik Eğitim Teknolojisi Standartları (National Educational Technology Standards for Teachers-NETS*T) 2008 tarihinde belirlenmiştir.

NETS*T öğretmen standartları eğitim teknolojisi kullanımı ile ilgili öğretmenlerin sahip olması gereken nitelikleri ve yeterlilikleri 5 standart çerçevesinde belirlemektedir. ISTE standartlarına göre öğretmenler yeni medya ortamında bilgi, beceri ve çalışma süreçlerini, yenilikçi bir mesleğin temsilcileri olarak sergilerken; öğrencinin öğrenme ve yaratıcılığını teşvik etmeleri, dijital öğrenim deneyimi tasarlama, geliştirme, hedeflenen performans kriterlerine göre bu kaynakları kullanmaları ve yaşam boyu öğrenimin gerçekleşmesine model oluşturmaları amaçlanmaktadır. Böylelikle eğitimde beklenen girişimci öğrenci profili beklenen sürdürülebilir istekli vatandaş profiline dönüşümü sağlanacaktır. Ayrıca, yeni medya dolayımlı teknolojinin eğitime entegrasyon sürecinde öğretmenler tarafından bu araçların dijital çağ çalışma ve öğrenme modeli oluşumunun içselleştirilmesi, süreçte bilginin akıcılığını da kolaylaştıracaktır. Bu özellikleriyle ISTE standartları evrensel standartlar olarak tüm öğretmenlerimiz ve FATİH Projesi için büyük öneme sahiptir. Fatih projesinin öğretmenler üzerinde göstereceği etki ISTE standarlarında belirtilen evrensel standartlara uygun olmalıdır. Araştırmanın amacı; yeni medya dolayımlı eğitim ortamında, Fatih Projesi kapsamında öğretmenlerimize sunulan yeni teknolojilerin

öğretmenlerimizin kullanımı sayesinde gelişen özelliklerin, ISTE standartlarında yer alan öğretmen özeliklerine ne ölçüde uyumlu olduğunu belirlemektir. Bu amaçla Fatih Projesi öğretmen görüşleriyle ISTE standartlarındaki öğretmen özellikleri karşılaştırmaktır.

Yenilik ve Eğitim Teknolojileri Genel Müdürlüğünün koordinasyonunda, Fatih Projesi pilot uygulamasına dahil edilen 17 ildeki 57 okulda proje kapsamındaki teknolojileri kullanan 1005 öğretmene projenin pilot uygulamasını değerlendirmesine yönelik olarak hazırlanan 162 maddeden oluşan Fatih Projesi öğretmen görüşleri anketi, Atatürk Üniversitesi öğretim üyeleriyle ortak çalışma yapılarak hazırlanmış ve online anket olarak Fatih Projesi 52 Pilot uygulama okulunda görev yapan öğretmenlere uygulanmıştır. Araştırma soruları ve değişkenlerin temel alındığı anket verileri, Fatih Projesinin pilot uygulamasının değerlendirmesi kapsamında Mayıs 2012 tarihinde Atatürk Üniversitesi-Bilgisayar ve Öğretim Teknolojileri Eğitimi Bölümü tarafından analiz edilmiştir.

Bu maddeler arasından seçilen ISTE standartlarıyla ilgili olduğu görülen 42 madde için araştırma soruları ve değişkenleri temel alınarak elde edilen verilerin analizinden, öğretmenlerin anketlere verdikleri cevapların ortalama, standart sapma, sıklık ve yüzde değerleri tespit edilip karşılaştırmalı betimsel analiz yapılarak ISTE standartlarıyla uyumun olup olmadığı belirlenmiştir. Çalışması sonucunda aşağıdaki bulgulara ulaşılmıştır;

"Öğrencilerin gerçek yaşamla ilgili konuları araştırmakla, dijital araçları ve kaynakları kullanarak özgün problemleri çözmeye sevk eder", "Öğrencinin öğrenme ve yaratıcılığını teşvik etmek için dijital araç ve kaynakları içeren uygun öğrenme deneyimlerini tasarlar ve uygular." standartlarına Fatih Projesi öğretmenlerinin uyum sağladıkları görülmektedir. Öğrenci başarısını ve gelişimini desteklemek için dijital araç ve kaynakları kullanarak meslektaşlarıyla işbirliği yapar", "Bireysel gelişmelerini değerlendirme konularında aktif katılımcılar olmalarını sağlayan teknoloji ile zenginleştirilmiş öğrenme ortamları geliştirir.", "öğrencilerin öğrenmelerini yönetir" standartları ile öğretmenlerin tam olarak uyum sağlayamadıkları görülmektedir. Uygulanmakta olan eğitim sistemimize yönelik kendi standartlarımızı uluslararası standartlar eşgüdümünde oluşturma gerekliliğimiz açıktır. Bu yönde yeni bir eğitim modeline ihtiyaç bulunmaktadır.

Şekil 1.Yeni Medya Teknolojilerinin Eğitime Entegrasyonu Modeli

FATİH Projesi kapsamında öğretmenlere sağlanan dijital araç ve kaynak özelliklerinin standartlara ve ihtiyaçlara uygun biçimde güncellendikten sonra öğretmenlere sunularak, öğretmenlerin bu araçları meslektaşlarıyla işbirliği yapma, teknoloji ile geliştirilmiş öğrenme ortamları geliştirme, öğrencilerin öğrenmelerini geliştirme ve becerilerini artırmak amacıyla kullanmalı; teknoloji destekli hizmetiçi eğitim programlarının ve uygulama modellerinin geliştirilmesi gerekmektedir. Böylelikle; teknolojinin eğitimde pedagojik uygulamalara bir alternatif olarak dahil edilmesi vizyonunu gösteren öğretmenler, paylaşımcı karar verme mekanizmalarında, topluluk oluşumunda rol almaları teknoloji becerileri ve liderlik becerilerinin gelişimini sağlayarak, öğrencilerin bireysel yaşam deneyimlerinde model oluşturacaktır. Toplumun kendini yenileme gereklilik ve etkililiğinde bu standartların varlığı, dijital ekosistemin şeffaf sınırlarını belirleyecek, bilginin yapılandırılarak ve gelişen teknolojiler ile anlamlandırılarak davranışa dönüşümünü hızlandıracaktır.

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