

Teacher motivations for digital and media literacy: An examination of Turkish educators

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Abstract

Educators have a variety of beliefs and attitudes about the best ways to support students' critical thinking, creativity, communication and collaboration skills by connecting the classroom to contemporary society, mass media and popular culture. Teachers who advance digital and media literacy may have a complex set of attitudes and habits of mind that influence their motivations to use digital media for learning. We conducted a survey research with a sample of 2820 Turkish educators to examine teachers' motivations for digital learning, using a 48-item Likert scale instrument that assesses teachers' perception of the value and relevance of six conceptual themes, namely: attitudes toward technology tools, genres and formats; message content and quality; community connectedness; texts and audiences; media systems; and learner-centered focus. Digital learning motivation profiles reveal distinctive identity positions of social science, language arts and information and communication technology (ICT) teachers in Turkey. The most common profiles include the identity positions of "Techie," "Demystifier" and "Tastemaker." Statistically significant associations were found between teachers' subject-area specialization and their digital learning motivation profiles. Professional development programs should assess teachers' digital learning motivation profiles and build learning experiences that expand upon the strengths of teachers' beliefs and the conceptual themes of most importance to them.

Introduction

A wide variety of innovative practices is occurring with the use of media and technology in education in ways that incorporate information and communication technology (ICT skills) with digital and media literacy. American and European researchers and policymakers are developing a series of school-wide or district-wide experiments to collect evidence on the implementation and impact of 1:1 tablet use in classrooms. But other initiatives are being developed on a national scale. For example, Turkey has embarked on one of the world's largest educational technology projects: putting interactive whiteboards in 84 000 classrooms and tablet computers in the hands of more than 63 000 students in grades 5 to 12. However, insufficient attention to providing teachers with the knowledge and skills they need to integrate technology into the curriculum is limiting the effectiveness of the initiative (Pouzevara, Dincer, Kipp & Sarnsik, 2014).

To address these challenges, some approaches have emphasized the value of integrating media literacy into the elementary and secondary curriculum (Stein & Prewett, 2009; Tuzel, 2013a). In Turkey, middle-school students can enroll in two elective courses: ICT Literacy introduces students to software tools and Media Literacy introduces students to critical analysis of news,

Practitioner Notes

What is already known about this topic

- Teachers' attitudes, skills and habits of mind contribute to different motivations for using digital media and technology for digital and media literacy education.
- Turkey has embarked on one of the world's largest educational technology projects by putting interactive whiteboards and tablets in thousands of classrooms but without providing consistent levels of teacher training.
- There are different levels of availability and use of media, computer-based resources and media production tools by elementary and secondary teachers in Europe and around the world.

What this paper adds

- The measurement of digital learning motivation profiles can help assess teachers' perception of the relevance of six conceptual themes, namely: attitudes toward technology tools, genres and formats; message content and quality; community connectedness; texts and audiences; media systems; and learner-centered focus.
- Teachers' digital learning motivation profiles reveal distinctive identity positions that differentiate social science, language arts and information and communication technology (ICT) teachers in Turkey.
- There are differences among teachers in access to and use of media and computer-based technologies, and these differences are associated with digital learning motivation profiles.

Implications for practice and/or policy

- Professional development programs should assess teachers' digital learning motivation profiles and design professional learning experiences that expand upon teachers' beliefs, values and attitudes, and the conceptual themes of most importance to them.

advertising and information, where students create their own media messages. Developed in 2006, the Media Literacy elective course has grown in popularity. In the 2013–2014 academic year, more than 4 million children participated in the course (Medya Okuryazarligi Dersi Sil Bastan, 2014, Sept 23).

While the European Commission defines media literacy as the ability of individuals to access and understand information through different means, such as television, radio, print media, the Internet and digital technology (Silver, 2009), most scholars and practitioners use a definition that includes a wider variety of aims, goals and intentions, including the ability to create messages, reflect on media influence and consider the social responsibilities of being an effective communicator, and use the power of information and communication to take appropriate forms of personal, social and political action (Hobbs, 2010).

Teachers may be attracted to media literacy because they recognize that it enables them to connect the curriculum to contemporary culture, including mass media, digital media and popular culture (Silverstone, 2004). Media literacy instructional strategies explicitly promote transfer of learning between home and school. Transfer is an active process that occurs when learners explore ideas across multiple contexts; it promotes adaptability, flexibility and enhances lifelong learning (National Research Council, Committee on Developments in the Science of Learning, 2000). By tapping into students' funds of knowledge, media literacy helps create a learner-centered classroom (Hart, 1998) where student voice is activated and dialogue and

reflection promote a deeper, more authentic learning environment (Frau-Meigs & Torrent, 2009) that promotes intellectual curiosity and lifelong learning (Tyner, 2014).

The significant literature on teacher professionalism indicates that there is a complex set of knowledge, attitudes, skills and habits of mind needed for innovation in education (Shulman & Shulman, 2004). For more than 20 years, educators have debated the best ways to support students' critical thinking, creativity, communication and collaboration skills by connecting the classroom to contemporary society, mass media and popular culture. Should media literacy be embedded in existing subjects or taught as a stand-alone course? Should teachers emphasize the importance of protecting oneself against unwanted negative media influence or instead focus on using the power of media and communication technology for personal or social development? Should creative media production activities be an essential pedagogy or should the focus of instruction be on critical analysis activities (Hobbs, 1998, 2004)? Such questions have been part of a dynamic global conversation as media literacy education has spread to five continents and taken many forms in the process of adapting to particular cultural and national contexts and educational systems (Frau-Meigs & Torrent, 2009).

Today, as teachers in language arts, ICT technology and social sciences are all exploring how to use digital media and technology to improve student learning, it may be possible to connect to their existing motivations, values and attitudes to customize professional development opportunities that better support teachers as they learn how to use media texts, tools and technologies to promote student learning. For this to occur, a robust theoretical and methodological conceptualization of teachers' differential motivations for digital learning is needed.

Toward this aim, in this study we report on research conducted with a large sample of Turkish teachers, using a new measure of digital learning motivation to assess teachers' perception of the relevance of six conceptual themes, namely: attitudes toward technology tools, genres and formats; message content and quality; community connectedness; texts and audiences; media systems; and learner-centered focus. In this study, we examine the relationship between differential teacher motivations for using digital media and technology in relation to their professional identities as subject area specialists.

Theoretical framework

The Turkish context for media literacy and ICT education

In Turkey, media literacy has been developed in secondary education since 2004, the year elective classes in media literacy were first offered. In addition, since the early 2000s ICT courses that are elective or compulsory in several terms have been included in middle and high schools. Both ICT and media literacy courses are the most preferred elective courses by the students (EARGED, 2008, p. 27).

As in many parts of Europe, Turkish educators are feeling pressure from the business community, parents and policymakers to use digital media to advance ICT skills and for digital and media literacy. As in most of the world, both protectionist and empowerment dimensions are evident in the rationale provided for media literacy in Turkey (Bek, 2006). Turkey's initiative in media literacy education was initially promoted by the Radio and Television Supreme Council as a means to address the impact of the mass media on the cultural values of the Turkish people as part of a larger political strategy to promote self-regulation as an alternative to government regulation of the media. Turkish education is highly centralized and the original rationale for the program emphasized that early learning about media could reduce people's vulnerability to media influence (Karaduman, 2013) and also emphasized values of nationalism, militarism, family and other traditional, conservative Turkish values (Bek, 2006).

But many Turkish educators embrace an empowerment perspective to media literacy education (Binark & Bek, 2007; Tuzel, 2013c). Because digital and media literacy education focuses on a

pedagogy on inquiry, scholars have recommended that a revision of the Turkish curriculum should focus on asking “how” and “why” questions to promote critical analysis and learner autonomy, inviting learners to consider “the political economic context and historical dynamics in the production processes of media texts” (Bek, 2006, p. 3). The media literacy course curriculum was revised in 2013 based on these discussions and general reforms in curriculums. In the new curriculum, students’ skills to be able to access, analyze, evaluate and create were taken as central points. In addition, a production-based approach was adopted through targeting the development of skills regarding the production of printed, visual and digital content (Minister of Education, 2013).

Considering the role of media literacy in language arts education, scholars emphasize the deep and organic connection between media literacy and literacy, noting that students analyze the technical structure of texts; question texts by understanding the author’s aims, point of view and production choices; analyze texts by examining persuasive strategies, evaluating claims and arguments, and examining reliability and accuracy; and consider the effect of media messages on other people, including empathizing with other points of view (Tuzel, 2013a).

Opportunities for teacher education in media literacy are still scarce. For students to acquire a critical perspective on the media, “the critical thinking skills of the teacher who will effectively guide students’ conceptualization” are paramount (Karaduman, 2013, p. 375). However, research on preservice Turkish language arts teachers has shown that even though they experience multimodal texts as a part of daily life, most do not receive even basic instruction on how to incorporate visual, digital or media texts into instruction. Research showed that when a group of Turkish university students were exposed to media literacy education as part of their preservice teacher education, their ICT skills were so low that they were challenged with simple activities that required them to access, search and find multimodal texts through using search engines, uploading and downloading files, and creating media using word processing, image manipulation, screencasting and video editing software. Although they were initially resistant in having to learn to use these tools, preservice teachers gradually recognized the fundamental relationship between literacy, media literacy and ICT skills. One student noted, “I wish we had been enabled to develop similar skills in the preceding two years at university” (Tuzel, 2013b, p. 625). This finding parallels evidence from other countries, where research has identified attitudinal factors that influence how and why a teacher will (or will not) use digital media for teaching and learning in digital and media literacy (Flores-Koulis, Deal, McCarthy, McGuigan & Rosebrugh, 2011).

Teacher motivations for digital and media literacy

Teacher beliefs influence teaching practices, helping them to define problems and develop solutions to everyday situations in the classroom (Kagan, 1990). Teachers’ beliefs about teaching and learning with ICT are central to integration; even with intensive professional development, shifts in teacher attitudes may take five years from the period of initial engagement (Chen, 2008). Teachers’ beliefs and attitudes about mass media, digital media and popular culture shape the choices they make in the classroom regarding the use of media texts, tools and technologies. For example, teachers who are concerned about the negative impact of time spent with screen media will likely be more cautious and selective about using technology in the classroom than those who feel that screen media is a normative part of daily life. When teachers reflect on their own motivations, it may increase metacognition that promotes reflective practice and discussing motivations may cultivate respect for diversity among the teaching staff (Hobbs & Moore, 2013; Kopp, 2012).

However, teachers’ attitudes about digital media and technology can only be appreciated within a particular cultural and national context. Researchers have examined how teacher receptivity to

use digital media is influenced by a number of external factors, including access to equipment and other resources, quality of software and hardware, ease of use, incentives to change, support and collegiality in their school, school and national policies (Mumtaz, 2000). In the United States, teachers have diverse perspectives on digital technology and about their own use of media and technology for purposes of teaching and learning. In a meta-analysis of nationally representative teacher surveys in the United States, five teacher surveys conducted by Public Broadcasting System (PBS) Learning, Common Sense Media, the Joan Ganz Cooney Center, the Gates Foundation and the Pew Research Center's Internet and American Life Project were examined (Pressey, 2013). Several key themes in teacher attitudes about media and technology emerged, including some fear associated with negative impact of media and technology. For example, one in five teachers believe that technology distracts from learning and 71% agree that students' use of entertainment media is diminishing attention span.

However, teachers also value the many benefits that media and technology can provide. For example, 75% agree that technology engages and motivates learners and 17% agree that media has a positive impact on prosocial behaviors "by exposing them to diverse viewpoints and experiences." Notably, all five studies found that teacher comfort level was one of the biggest barriers to incorporating technology into teaching, with fewer than one in five teachers identifying as "tech savvy." Other differences in the frequency of use of educational technology were found between teachers depending on their subject specialization, with science teachers being most likely to use media and technology and math teachers being most unlikely to use it.

Because educators have a variety of beliefs and attitudes about the best ways to support students' critical thinking, creativity, communication and collaboration skills using media, computer-based technologies and media production tools, it is essential to examine the attitudes and habits of mind that may shape teachers' decision to use digital media for learning.

Purpose and research questions

The study investigates the digital learning motivation profiles of a large sample of Turkish teachers in relation to their subject-area specializations, access to media and digital tools, and frequency of use of different types of media and technology tools in their role as educators. These research questions are explored:

RQ1. How available are media, computer-based and media production tools and how frequently do teachers use different types of media and technology tools?

RQ2. What is the relationship between teachers' access to media and digital tools, their subject-area specializations, and the frequency of their use of these devices?

RQ3. What is the relationship between the digital learning motivation profiles of Turkish teachers and their subject-area specialization?

Methodology

This study uses descriptive survey research methodology to determine specific characteristics of the sample and then to determine the possible causes for differences (Fraenkel, Wallen & Hyun, 2012). After describing the availability of different types of media and digital technologies, we examine teachers' frequency of use of media and technology by comparing this to their subject-area specialization and digital learning motivation profiles.

Sampling

We distributed the online questionnaire widely, using email recruitment, listservs, social media and snowball sampling between January 2014 and June 2014. In sampling strategy, we recruited social studies, language arts and ICT teachers as media literacy and ICT courses are taught by these teachers. There were a total of 2936 participants in the study, with 2820 cases of complete and usable data. As Table 1 shows, there were nearly equal numbers of male and female subjects.

Table 1: Demographic characteristics of subjects

	F	%
Gender		
Male	1361	48.3
Female	1459	51.7
Years of teaching		
1–5	1519	53.9
6–10	520	18.4
11–15	313	11.1
16>	468	16.6
School residential area		
Rural	668	23.7
Small or middle town	1306	46.3
Large town	846	30
School type		
Public	2477	87.8
Private	343	12.2
Age		
21–25	689	24.4
26–30	1052	37.3
31–40	596	21.1
41>	483	17.1
Region		
Marmara	916	32.5
İç Anadolu	446	15.8
Akdeniz	251	8.9
Ege	286	10.1
Karadeniz	201	7.1
Güneydoğu Anadolu	236	8.4
Doğu Anadolu	484	17.2

More than half of participants have been teaching for five years or less, and 60% of participants are under the age of 30, with respondents coming from all seven geographic regions of Turkey, working in public and private schools in large cities (30%), middle-size cities or towns (46%), and rural communities (24%). There are roughly similar numbers of teachers with subject-area specialization in ICT ($n = 698$), language arts ($n = 724$), social science ($n = 521$) and other ($n = 877$). Although respondents are not a representative sample of the teaching population, the sample size does permit some generalization to the younger generation of Turkish teachers who are now using computers and social media as a part of daily life.

Instrument: digital learning motivation profile

Hobbs, Grafe, Boos and Bergey (2010) explored teacher motivations for digital learning and media literacy by creating a motivational inventory for media education, using an exploratory cross-national sample of 350 German and US teachers to understand how teacher motivations may be associated with the likelihood of using media and technology in the classroom. In creating a typology of motivations, they tested 156 Likert scale attitude statements using a 5-point scale (*strongly agree to strongly disagree*) designed to align with a comparative study of German and US media education, developed by Grafe (2010), that found five common motivations regarding the desired outcomes for media literacy in the scholarly literature in both nations: textual analysis, focus on interpretation and meaning-making, examination of source credibility, reflection on media effects and influence, and examining authorship and ownership. The instrument also measured types of and frequency of media and technology use in the classroom, preparedness for

media education, levels of school support, equipment access, perception of potential harm and potential value of media, and preferences for professional development programs.

Building on this work, Hobbs and Moore (2013) revised questionnaire items to create the online Digital Learning Horoscope, which is available in English at <http://quiz.powerfulvoicesforkids.com>. The 48-item Likert scale instrument uses a 5-point scale (*very important* to *not important*) to measure 12 digital learning motivation profiles aligned to teacher empowerment-protection beliefs and conceptual themes.

The Digital Learning Horoscope profiles were based on the observation that teachers have differential levels of attachment to empowerment-protectionist beliefs about the affordances or liabilities of media and technology. The instrument measures differential levels of teacher valuation of: (1) technology tools, genres and formats; (2) message content and quality; (3) community connectedness; (4) texts and audiences; (5) understanding media systems; and (6) learner-centered focus.

As Figure 1 displays, the digital learning motivation measures feature the following 12 profiles: Techie, Professional (technology tools, genres and formats); Tastemaker, Professor (message content and quality); Activist, Teacher 2.0 (community connectedness); Alt, Trendsetter (texts and audiences); Watchdog, Demystifier (media systems); Motivator, Spirit Guide (learner-centered). There are four statements associated with each of the 12 profiles. Two have a valence with themes of protection and two have a valence with themes of empowerment. For example, an example of an Activist item with a valence as protection is: "It's my job to help students examine how and why social institutions can be unjust and inequitable." An example of an Activist item with a valence as empowerment is: "Civic engagement should be activated by the use of media and technology in the classroom." Appendix S1 displays the complete instrument in English and Turkish.

Turkish adaptation

The Turkish translation of the instrument was carried out in four stages. In the first phase, three native speakers of Turkish worked independently to translate items. These translations were examined comparatively and a single Turkish version was created. In the second phase, a back-translation process was conducted through the translation of the Turkish version into English. In the third phase, these two versions were compared and a new revision was created. Finally, the instrument was reviewed by three ICT experts.

In order to check the language equivalence of the instrument, 107 Turkish senior English Language Teaching (EL) students studying at a university were included. Students completed the English version of the instrument and after two weeks, they completed the Turkish version of the instrument. Results showed high levels of reliability between the two versions, with Cronbach's alpha value of .87. These phases of translation were necessary because media literacy is a relatively new concept in Turkey and certain professional and academic language was deemed to be unfamiliar to practitioners. We also wanted to ensure that the meaning of the items had high levels of fidelity to the English language instrument.

Approach to data analysis

The digital learning motivation instrument uses an algorithm to identify an individual's profile. Participants receive a score from 20 to 100 for each of the 12 profiles. A participant who rates all four profile items as *not important* receives a score of 20 and one who rates the same items as all *very important* receives a score of 100. We used each participant's highest score from among the set of 12 scores to determine an individual's profile. In cases where there was a tie between two top scores, we examined the range in terms of the determination of the most dominant type of

Tool, Genre or Format Focus: Professional and Techie

	<p>PROFESSIONAL</p> <p>You develop students' creative competencies and practical skills as future authors, artists, writers, or media professionals.</p>		<p>TECHIE</p> <p>You know that digital media technology and tools engage students more deeply in authentic learning.</p>
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Focus on Content & Quality: Tastemaker and Professor

	<p>TASTE-MAKER</p> <p>You want students to appreciate culturally important media in history, art, literature, and sciences.</p>		<p>PROFESSOR</p> <p>You want students to gain content knowledge by using media and technology to advance learning goals.</p>
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Community Connection: Activist and Teacher 2.0

	<p>ACTIVIST</p> <p>You support students' civic engagement by engaging with media and technology to address real-world issues.</p>		<p>TEACHER 2.0</p> <p>You help students use media and technology to connect with and learn from others as networked digital citizens.</p>
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Focus on Texts & Audiences: Alt and Trendsetter

	<p>ALT</p> <p>You challenge students with alternative ways of finding, using, thinking about, and creating media off the beaten path.</p>		<p>TRENDSETTER</p> <p>You meet students "where they live" by connecting the classroom to contemporary popular culture.</p>
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Understanding Media Systems: Watchdog and Demystifier

	<p>WATCHDOG</p> <p>You want students to think about economic and political contexts of media and technology as systems that shape our lives.</p>		<p>DEMYSTIFIER</p> <p>You want students to develop critical thinking skills by "pulling back the curtain" on how media is constructed.</p>
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Learner-centered: Spirit Guide and Motivator

	<p>SPIRIT GUIDE</p> <p>You are dedicated to helping students use media to support their social and emotional well-being.</p>		<p>MOTIVATOR</p> <p>You cultivate students' autonomy as independent learners who go where their creativity takes them.</p>
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Figure 1: Digital learning motivation profiles

motivation. We determined that the motivation profile with the narrower range is more dominant because the narrowing of the range interval makes it more difficult to place in that area.

After cleaning the data, we tested our research hypotheses by first producing descriptive statistics, followed by crosstabs, chi-square and one-way analysis of variance (ANOVA). Multinomial logistic regression (Fraenkel *et al.*, 2012) was also utilized to examine relationships between the availability and frequency of use of digital tools, teachers' professional affiliation and their digital learning motivation profiles.

Results

Availability and frequency of use of media and technology tools

The first research question predicted that media, computer-based and media production tools are differentially available to teachers and the frequency of use of different types of media and technology tools is highly varied. To determine differential levels of availability of media and technology tools, we distinguished between more traditional *media tools* like televisions, radios, CD-DVD players, overhead projectors; *computer-based tools* like computers, data projectors and smart boards; and *media production tools* like cameras, video cameras, smartphones, document cameras and voice recorders. Results show that 87% of teachers have access to computer-based tools, 40% have access to media production tools and only 13% have access to media tools. Table 2 displays these results.

Table 2: Descriptive statistics for media, computer-based and production tools: availability and use

	n	%
Availability of tools		
Media tools*	377	13.4
Computer-based tools**	2443	86.6
Media production tools***	1135	40.2
Frequency of use		
Media tool use		
Never	1156	41
At least once a semester	1183	42
At least once a month	369	13.1
At least once a week	97	3.4
Daily	15	0.5
Computer-based tool use		
Never	324	11.5
At least once a semester	673	23.9
At least once a month	1269	45
At least once a week	448	15.9
Daily	106	3.8
Media production tool use		
Never	1733	61.5
At least once a semester	836	29.6
At least once a month	188	6.7
At least once a week	43	1.5
Daily	20	0.7

*TV, radio, CD-DVD player, overhead projector, etc.

**Smart board, computer, projector, etc.

***Tablet PC, camera, video camera, smartphone, document camera, voice recorder, etc.

Computer-based tools are far more frequently used by Turkish teachers than other types of media and technology. Media tools are infrequently used, with 41% of participants reporting never using them and 42% using them only once a semester. Because computer-based tools are so common, teachers report using them more frequently, with 3.8% using them daily, 15.9% using them at least once a week, 45% using them once a month and 23.9% using them once a semester. Only 11.5% of teachers report never using computer-based tools. Media production tools, although more available to teachers than more conventional media tools, are never used by 61.5% of participants. Only 2.2% of the sample use media production tools daily or at least once a week.

Media availability by subject-area specialization

The second research question predicted that there is a relationship between teachers' access to media and digital tools, their subject-area specializations, and the frequency of their use of these devices. Turkish teachers have different levels of equipment availability and different patterns of media usage in the classroom depending on their subject-area specialization. To determine differential levels of availability of media and technology tools, we distinguished between more traditional *media tools* like televisions, radios, CD-DVD players, overhead projectors; *computer-based tools* like computers, data projectors and smart boards; and *media production tools* like cameras, video cameras, smartphones, document cameras and voice recorders. We found statistically significant differences between teachers in the availability and use of media tools, computer-based tools and media production tools. In order to determine the difference, post hoc comparisons using Tukey HSD test were used.

Results indicate that there are statistically significant differences in the availability of traditional media tools in the classroom by subject-area specialization. ICT teachers report 0.36 devices ($SD = 0.619$), while language arts teachers report 1.36 tools ($SD = 0.647$), social science teachers report 0.71 devices ($SD = 0.593$) and other teachers report 1.02 tools ($SD = 0.572$). A one-way ANOVA revealed significant differences between the groups, $F(3, 2816) = 31.86, p < .000$.

Availability of computer-based tools also varies by a teacher's subject-area specialization, with ICT teachers having an average of 4.88 devices ($SD = 0.720$), far more than language arts teachers ($M = 2.31, SD = 0.635$) or social science teachers ($M = 2.22, SD = 0.801$) and other teachers ($M = 2.16, SD = 0.819$). A one-way ANOVA revealed significant differences between groups, $F(3, 2816) = 30.70, p < .000$.

Availability of production tools also varies by subject-area specialization, with ICT teachers having an average of 1.86 devices ($SD = 0.545$), far more than language arts teachers ($M = 0.81, SD = 0.917$) or social science teachers ($M = 0.929, SD = 0.881$) and other teachers ($M = 0.926, SD = 0.811$). A one-way ANOVA revealed significant differences between groups, $F(3, 2816) = 57.93, p < .000$.

Media use by subject-area specialization

Statistically significant differences were also found in the frequency of use of media and technology depending on teachers' subject-area specialization. In order to determine the differences, post hoc comparisons using Tukey's HSD test was used. Social Science teachers have the lowest levels of media use ($M = 1.36, SD = 0.647$) and ICT teachers have the highest level of media use ($M = 2.06, SD = 0.939$). A one-way ANOVA revealed significant differences between groups, $F(3, 2816) = 24.10, p < .000$.

Computer-based tools are most frequently used by ICT teachers ($M = 4.13, SD = 0.550$), followed by social science teachers ($M = 2.88, SD = 0.998$) and other teachers ($M = 2.92, SD = 0.917$). The lowest level usage of computer-based media is found among language arts teachers ($M = 2.17, SD = 0.990$). A one-way ANOVA revealed significant differences between groups, $F(3, 2816) = 114.5, p < .000$.

Media production tools are the least used of all media types and a one-way ANOVA revealed no significant differences between groups. ICT teachers' mean usage scores are 0.78 ($SD = 0.712$) as compared with social science teachers ($M = 0.71$, $SD = 0.598$), language arts teachers ($M = 0.69$, $SD = 0.571$) and other teachers ($M = 0.70$, $SD = 0.612$).

Teachers' subject-area specializations and digital learning motivation profiles

Our third research question predicts that there is a relationship between the digital learning motivation profiles of Turkish teachers and their subject-area specialization. We used chi-square analysis to determine the relationship between teachers' subject-area specializations and their digital learning motivation profiles, finding statistically significant differences between subject-area specializations by motivations profile ($X_{3, 33} = 1501.9$). Among the overall sample, the most common motivation profiles include Techie ($n = 692$), Demystifier ($n = 441$) and Tastemaker ($n = 351$). For social science, language arts and ICT teachers, 50% or more teachers are identified with just two of the 12 profiles. Bold faced data on Table 3 shows that social science teachers are predominantly Activists (39.3%) and Demystifiers (15%). Language arts teachers are largely Demystifiers (30.2%) and Tastemakers (25.1%). ICT teachers include a large number of Techies (47%) and Alts (11.5%). Other teachers are also predominantly Techies (28.8%) and Alts (12.3%).

A logistic regression analysis was conducted to predict digital learning motivation profile using subject-area specialization as a predictor. Multinomial logistic regression is used to explain the relationship between a dependent nominal variable and a continuous-level independent variable (Burns & Burns, 2009). A test of the full model against a constant-only model was statistically significant, indicating that the motivational profiles as a set reliably distinguished between teachers with different subject-area specializations ($\chi^2 = 72.46$, $p < .000$). Table 4 displays these results. Nagelkerke's R^2 of .46 indicated a moderately strong relationship between prediction and grouping. Table 4 shows that when a participant is a social science teacher, an odds ratio of 27.94 suggests that a he or she is 27 times more likely to be an Activist. When a participant is a language arts teacher, he or she is 13 times more likely to be a Demystifier. When a participant is an ICT teacher, he or she is 34 times more likely to be a Techie.

Discussion

This study breaks new ground in our understanding of the motivations of elementary and secondary teachers in Turkey who are interested in digital and media literacy learning. In addressing our first research question, we found that most Turkish teachers do have access to computer-based tools in schools. While the availability of media, computer-based tools and media production devices is still quite uneven in Turkish public and private schools, this study shows that many teachers do have access to computers, video cameras, DVD players and other digital media resources, and are making efforts to use them regularly in the classroom. Our second research question explored the relationship between teachers' access to media and digital tools, their subject-area specializations, and the frequency of their use of these devices. Computer-based resources are the most common and frequently used resources by all teachers. Sadly, even though media production resources are available to 40% of the teachers in our study, fewer than 10% use such tools (like video cameras, voice recorders, smartphones or other media production tools) with their students more than once a semester. Our third research question explores the relationship between the digital learning motivation profiles of Turkish teachers and their subject-area specialization. This study found statistically significant relationships between teachers' professional role identity (as language arts, social science or ICT teachers) and their scores on the digital learning motivations profile.

Teacher role identities and motivations may contribute to differences in media and technology use. Teachers with different professional identities have different motivations for using digital

Table 3: Teachers' professions and digital learning motivation profiles

	Social Science (n = 521)		Language Arts (n = 724)		ICT (n = 698)		Other (n = 877)		Total (n = 2820)	
	F	%	F	%	F	%	F	%	F	%
Focus on genre or format										
Professional	0	0	0	0	0	0	5	0.6	5	0.2
Techie	58	11.1	53	7.3	328	47	253	28.8	692	24.5
Focus on content and quality										
Tastemaker	19	3.6	182	25.1	60	8.6	90	10.3	351	12.4
Professor	13	2.5	11	1.5	19	2.7	53	6	96	3.4
Focus on community connection										
Activist	205	39.3	22	3	2	0.3	32	3.6	261	9.3
Teacher 2.0	11	2.1	0	0	34	4.9	60	6.8	105	3.7
Focus on texts and audiences										
Trendsetter	10	1.9	28	3.9	9	1.3	40	4.6	87	3.1
Alt	36	6.9	8	1.1	80	11.5	108	12.3	232	8.2
Focus on understanding media systems										
Demystifier	78	15	219	30.2	64	9.2	80	9.1	441	15.6
Watchdog	16	3.1	82	11.3	11	1.6	50	5.7	159	5.6
Focus on learner-centered instruction										
Motivator	19	3.6	85	11.7	35	5	36	4.1	175	6.2
Spirit guide	56	10.7	34	4.7	56	8	70	8	216	7.7

* $p < .000$; ** $p < .00001$.

$\chi^2 = 1501.90$; $df = 33$.

ICT: information and communication technology
 Bold numbers indicate the dominant motivation types

Table 4: Multinomial logistic regression for teachers' professions and digital learning motivation profiles

		B (SE)	p	95% CI for odds ratio		
				Lower	Odds ratio	Upper
Social Science teacher	Intercept	-1.473 (.146)	0			
	Activist	3.330 (.239)	0	17.478	27.94	44.678
	Demystifier	1.448 (.216)	0	2.787	4.25	6.49
	Tastemaker	-0.082 (.291)	.777	0.52	0.92	1.63
	Techie	-0.048 (.101)	.619	0.292	0.48	0.996
Language Arts teacher	Intercept	-1.563 (.151)	0			
	Activist	1.188 (.315)	0	1.768	3.28	6.09
	Demystifier	2.570 (.200)	0	8.835	13.06	19.328
	Tastemaker	2.267 (.199)	0	6.541	9.65	14.246
	Techie	-0.65 (136)	.865	0.395	0.76	1.023
ICT teacher	Intercept	0.260 (0.84)	.002			
	Activist	-3.032 (734)	0	0.011	0.04	0.203
	Demystifier	-483 (187)	.01	0.427	0.61	0.891
	Tastemaker	-665 (.186)	0	0.357	0.51	0.741
	Techie	4.456 (.239)	0	25.521	34.68	58.62

The reference category is: Other Teacher. $R^2 = .43$ (Cox & Snell), $.46$ (Nagelkerke), $p^2 = .206$ (McFadden). Model $\chi^2 = .72.46$; $p = .000$.

ICT: information and communication technology

media and technology. The motivational profiles of Turkish teachers revealed three common identity positions: Techies, Demystifiers and Tastemakers. ICT teachers have substantially more access to media and technology and they most closely identify with the Techie motivation, using tablets, apps, programs, plug-ins, widgets, websites and other types of educational technology. These educators like experimenting with what these tools can do and see much potential to engage students with the media and technology tools they use in their everyday lives. Some ICT teachers are Alts, those inventive, perhaps “do-it-yourself” (DIY) teachers who challenge students with alternative ways of finding, using, thinking about and creating media in the classroom. Whether they use open source programs on school computers, encourage students to start alternative clubs or magazines, or introduce students to information that is off the beaten path, they are likely a key proponent of broadening students' understanding of the many different ways that people share information and ideas with others.

This study shows that Turkish language arts teachers are motivated by two distinctively different motivations. Some are Demystifiers who “pull back the curtain” to help students see how all forms of information and knowledge are constructed, emphasizing the practice of critical thinking, helping students ask good “how” and “why” questions. Some are Tastemakers—teachers who want to broaden their students' horizons, helping them to have exposure to a wide variety of texts, ideas, people and experiences that deepen their understanding of history, art, the sciences and society. They believe that a key component of students' future success in life will require them to draw from a variety of cultural sources both classical and popular. These motivations inspire an interest in media and technology for learning.

Finally, reflecting an interest in civic education, most Turkish social science teachers are Activists—they want to make society more just and equitable by promoting democratic participation, using media and technology in the classroom as a catalyst for students to have a voice in improving life in their communities and in the world.

This study has some limitations. Human motivations are complex and multifaceted. While this study uses a new instrument to identify 12 motivations for digital and media literacy education,

we do not mean to essentialize or oversimplify teachers' motivations, which always exist in a dynamic cultural, historical and situational context. Future research should look at differential teacher motivations in relation to age, background and experience in order to better understand how teachers' own educational and life experiences may influence or shape digital learning motivation profiles.

Cultural differences also deserve further interrogation. One primary limitation is that some of the instrument's 12 digital learning motivations may not be relevant to the particular values of Turkish teachers. In previous versions of the instrument, a large number of US and German teachers self-identified as Motivators, but among Turkish teachers, this profile value was low. Qualitative interviews and focus groups with teachers should be used to better understand how Turkish teachers interpret each of the 12 motivational profiles. Finally, more information is needed about teachers who are making regular and consistent use of media production tools for learning and teaching. Case studies of these educators could be useful in understanding how media production activities can enter the classroom in the Turkish education context.

This study suggests that more awareness is needed about effective instructional strategies to engage the existing motivations of teachers and advance knowledge and competencies among language arts, social science, ICT and other teachers. Our findings show that ICT teachers continue to be the heaviest users of computer-based tools, which may contribute to the provision of specialist elective courses for learners. However, it is in the long-term interest of Turkish schools to use models where digital and media literacy are integrated into subject-area instruction, so that all children and young people in the nation can benefit from such instruction (Tuzel, 2013b). If only a few specialist teachers use media and technology tools, then momentum for bringing technology into general education across Turkey will inevitably diminish.

Our research found that digital learning motivation profiles reveal distinctive identity positions among social science, language arts, and ICT teachers in Turkey. Awareness of teacher motivations for digital learning could be an asset in the design and development of professional development programs. Trainers should consider assessing teachers' digital learning motivation profiles and building learning experiences that expand on the strengths of teachers' beliefs and the conceptual themes of most importance to them.

In particular, we recommend sensitivity in addressing the two different motivations among language arts teachers. Demystifiers are engaged by inquiry-oriented approaches to asking "how" and "why" questions about digital and media texts, while Tastemakers prefer approaches that focus on discriminating between texts to examine issues of quality and cultural value. Increased sensitivity and attention to teacher motivations could be especially useful in light of the evaluation of the Turkish *Fırsatları Artırma ve Teknolojiyi İyileştirme Hareketi* (FATİH) project, where the lack of reflection about the purpose and aims of using technology may be hindering the impact of the program, because "if a teacher, school, district or country does not know whether they want to leverage ICT for assessment, student engagement, dropout-reduction, multimedia teaching support, classroom management, access to research, or many of the other potential uses, they will most likely not succeed in any of them" (Pouzevara *et al.*, 2014, p. 11). Future research should explore how a better understanding of teacher motivations for digital learning could inspire innovation in teacher education across a wide range of educational contexts in Europe, Asia and around the world.

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Statements on open data, ethics and conflict of interest

Data used in this study is openly available in the URI Digital Commons repository (<http://digitalcommons.uri.edu/>). Online survey research processes are not subject to institutional review by Canakkale Onsekiz Mart University. Participants volunteered to complete the survey and no personally identifying information was collected. The researchers have no conflict of interest.

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Supporting information

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Appendix S1.