Nurturing a Climate of Innovation in a Didactic Educational System: A Case Study Exploring Leadership in Private Schools in Turkey

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To cite this article:

Ersozlu, A., Karakus, M., Karakas, F., & Clouder, D.L. (2022). Nurturing a Climate of Innovation in a Didactic Educational System: A Case Study Exploring Leadership in Private Schools in Turkey. *Leadership and Policy in Schools*. https://doi.org/10.1080/15700763.2022.2129074

To link to this article: https://doi.org/10.1080/15700763.2022.2129074

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Major economic, social, and technological changes in the twenty-first century require transformation in the everyday practices that educational institutions use to train future innovators. Through a case study on five schools within a network of private schools in Istanbul, Turkey, we explore how school administrators and teachers nurture an innovation climate in their schools. Using methodological triangulation that combines semi-structured interviews, participant observation, interactive training sessions, and archival data, we identify four discernible discursive practices that shape a climate conducive to innovation in these schools: a) fostering the creativity of the members of school society or community, b) developing a collaborative learning ecosystem, c) encouraging innovative teaching through online collaborative learning spaces and ICT, and d) empowering teachers to generate an adaptable curriculum in a flexible work environment. Findings indicate the significance of building a collaborative ecosystem that enables a separation or departure from the mainstream traditional and test-oriented education system in Turkey, which in turn inspires creativity of both teachers and students in the fabric of daily school life.

Keywords: educational leadership, innovation climate, creativity, school administrators, teacher empowerment

Introduction

One of the most fundamental obligations of any society is to prepare its adolescents and young adults to lead productive and prosperous lives as adults (Symonds et al., 2011). Educational institutions can respond to meet this goal by fostering their students' development and alumni knowledge (Flores-Crespo, 2007). However, educational leaders face uncharted territory in the twenty-first century with new challenges, including rapid technological advances (Ashton & Stacey, 2009), a new generation of students

living and learning in a digital world (Willoughby & Wood, 2008), a volatile and interconnected world economy (Millar & Salt, 2006), and a perceived imperative for a creative workforce in need of education (McWilliam & Haukka, 2008). Moreover, the labor market requires employees to be adaptive and rapid decision-makers (Girginer, 2013). Emerging work and education inequalities during the COVID-19 pandemic crisis exacerbated the challenges that educational leaders face (Major et al., 2020). The new world, with all its complexities, demands a different set of skills than the more linear analytic and problem-solving skills that were adequate in past generations. Transforming educational institutions to meet the challenges of the twenty-first century can only be achieved under the guidance of inspirational educational leaders whose work engagement has been found to be highly influential in fostering an innovation climate at school (Koch et al., 2015; Watkins et al., 2020; Zuckerman et al., 2018).

Craft (2008) puts forward four themes for educational leaders to use to cultivate creativity and innovativeness in their schools. First, educational leaders can leverage *plurality of means* by diversifying places, activities, literacies, and opportunities for learning. Second, they can increase *possibilities* to reflect on individual choices and different ways of learning. Third, they can focus on *playfulness* to support exploration and fun activities for children. Fourth, they can encourage *participation* to support active engagement of students in learning.

By unleashing the creative and innovative potential of teachers and students through everyday practices, it might be argued that a school can enhance its own innovation capabilities. However, it seems likely that developing creativity and innovativeness might be particularly difficult in educational systems that are biased towards didactic pedagogies and assessment approaches that favour formal standardized testing. Little research has explored how educational leaders can cultivate innovative potential of

teachers and students in such educational systems that do not appear to necessarily and systematically foster it. This paper addresses this knowledge gap by describing a whole-system approach in Turkey offering new perspectives for school leaders operating in heavily prescribed, rote-learning based educational systems. In particular, we discuss what educational leaders do in their everyday practices to nurture a climate of innovation when there is a pressure to conform to a standardized and didactic curriculum and share findings on how innovative educational leaders build a collaborative ecosystem that inspires creativity of both teachers and students in the fabric of daily school life. Building such a collaborative ecosystem enables a separation from the mainstream traditional and test-oriented education in Turkey, which in turn opens up pockets of innovative spaces to develop the creative potentials of both teachers and students. Therefore, the current study aims to investigate:

What strategies do educational leaders employ to succeed in creating a climate of innovation in private schools in the context of the traditional centralised Turkish educational system?

Our study underlines the importance of designing and building collaborative ecosystems to develop teachers' and students' innovative capabilities. The following sections summarize our literature review, research methodology, and data analysis procedures. We then delineate four emergent themes from our qualitative data. By reviewing these themes, this paper provides implications for educational leaders interested in nurturing an innovation climate at school.

Schools' Innovation Climate

Innovation climate can be defined as the shared perceptions of members regarding the procedures, practices, and behaviors promoting the production of new practices and

knowledge at school (Moolenaar et al., 2010). A school's innovation climate refers to the school community's perceptions of their school's innovative culture, democracy culture, innovative vision and mission, leadership, encouragement of innovation, innovative teaching practices, creative thinking, enabling use of initiative, teamwork and adaptation, organizational learning, organizational autonomy and freedom, job autonomy, and group cohesion (Amabile et al., 1996; Chou et al., 2019; Thurlings et al., 2015). To create an innovation climate at school, school administrators and teachers need to be closely connected to each other and be willing to continuously learn and to take risks to improve the school (Moolenaar et al., 2010). A school's innovation climate guides members to innovation, boosts their creative self-efficacy, and increases their innovative behaviors (Chang & Yang, 2012).

Educational Leadership and Innovation

Educational leaders with new perspectives can embrace the unique challenges of the twenty-first century. The role of educational leaders in transforming school systems into innovative educational institutions is widely acknowledged in the literature (Koch et al., 2015; Beycioglu & Aslan, 2007; Nichols, 2007). Leadership qualities such as creativity and wisdom (Sternberg, 2005) are acknowledged as contributing factors to school effectiveness. Mumford and Licuanan (2004) claim that educational leaders need to encourage innovation and promote their followers' creative efforts. Schrum and Levin state, "to be a successful leader in the twenty-first century, school leaders need to be open to change, know how to manage change, and be risk takers" (2009, p.5). However, Schrum and Levin's (2009) suggestions assume that the cultural context is conducive to change which is not necessarily so. For instance, Kizilcelik (2015) highlights the challenges faced by educational leaders in nurturing creativity in Turkish schools where

systems are highly resistant to change and are still largely rote-learning based, teacher-centered, and focused on maximizing student performance in nation-wide tests.

Educational Leaders' Roles in Nurturing an Innovation Climate at School

We extracted four main themes from the relevant literature about educational leaders' roles in nurturing an innovation climate at school: a) Fostering creativity in the school community, b) Developing a learning climate at school, c) Encouraging innovative teaching, and d) Empowering teachers to nurture innovative practices.

Fostering Creativity in the School Community

Creativity, as the first step in innovation, refers to the production of new and useful ideas concerning products, services, or processes (Amabile & Khaire, 2008). Leaders might be expected to nurture the creativity of the members of a school community (Mumford et al., 2002). Creativity implies a dramatic shift in school administrators' mindsets. As creativity and innovation have taken on a new significance, educational leaders are under pressure to produce ambitious plans to unleash the creative potential of their teachers, staff, and students (Schoen & Fusarelli, 2008). Hays (2013) suggests that such plans should aim to change teaching, assessment, curriculum, school culture, and extracurricular activities so that they nurture innovation and creativity across the school system (Hays, 2013). The educational leader needs to encourage and support the members of the school society, providing opportunities for them to share their creative ideas, and bring together their skills, knowledge, and expertise in a flexible and supportive environment conducive to school innovation (Moolenaar et al., 2010; 2011; 2014; Mumford et al., 2002; Shalley & Gilson, 2004).

Developing a Learning Climate at School

A continuous organizational learning process supports creative collaborative work in school, which, in turn, promotes innovative organizational knowledge creation (McCharen et al., 2011). Innovative professional practices are more likely to be developed in schools characterized by a dynamic learning climate and a supportive learning culture (Hargreaves, 1999; Harris, 2008). Arranging an interactive social environment as a part of a dynamic learning climate and providing the school members with the required resources for learning are the main responsibilities of school administrators to facilitate organizational learning (Louis & Robinson, 2012). In contrast, school leaders are responsible for asking challenging questions, making observations while looking for creative ideas, and getting involved in active experimentation. They might also bring together social networks made up of school members from diverse backgrounds to support both feedback and feedforward of new ideas (Daas et al., 2020; Darabi et al., 2018).

Encouraging Innovative Teaching

Educational leaders can nurture an innovation climate by encouraging and motivating teachers to employ innovative teaching strategies and providing relevant support (Chou et al., 2019; Thurlings et al., 2015). Innovative teachers might be expected to encourage learners to navigate the learning experience and share information with their peers (Chou et al., 2019), as well as employing innovative methods and materials, to improve the creative thinking skills and learning outcomes of students (Meng et al., 2016). This proposition is especially valid for the current generation of learners which are referred to as *Net-Geners, millennials*, or *digital natives,* characterized by having high digital literacy, using online social networks, having multitasking capabilities, socializing and

learning on the Internet, and consuming and producing digital information (Twenge, 2007; Tapscott, 1998). Being aware of these trends and designing new learning spaces for this unique generation is crucial for educational leaders and teachers to respond to their needs as learners.

Empowering Teachers to Nurture Innovative Practices

Empowering leaders share their power with their followers, involve them in decision-making, and nurture their psychological empowerment, discretion, and job autonomy (Van Dierendonck & Dijkstra, 2012; Fock et al., 2012). Empowering leadership behaviours are positively correlated with teachers' sense of self-efficacy (Hemric et al., 2010; Lee et al., 2012) and self-efficacy of teachers is among the predictors of their innovative work behaviors (Hsiao et al., 2011; Thurlings et al., 2014). Recent studies also reveal that educational leaders' empowering behaviors leverage teachers' innovative work behaviors through teachers' exploration (Gkorezis, 2016) and team psychological safety (Zhu et al., 2019).

Educational leaders are expected to effectively and systematically empower teachers in regard to the development of an innovative and adaptable curriculum, contribution to the development of the learners' potential, and optimization of the teaching-learning events in the class (Carl, 2009). School principals' empowering leadership behaviours have a positive effect on both the innovative climate at school and teachers' innovative behaviours (Sagnak, 2012). The empowered teacher does not regard the current curriculum as a recipe from which they cannot deviate, but rather as a learning area guideline with which they can experiment to make it more relevant and meaningful by developing creative and innovative ideas (Carl, 2009).

Turkey's Educational Context

The Republic of Turkey is a secular and democratic developing country built on Anatolia which has been home to the heritages of several different cultures. The Turkish education system has a centralized organization and governing structure (Ozkal-Sayan, 2013) under the supervision of the state, namely the Ministry of National Education (MoNE). The curriculum, which is dictated and heavily monitored by MoNE, is based on memorization of large amounts of information (Kizilcelik, 2015). Students are not particularly encouraged to think critically or creatively as shared cultural codes impose pressure for conformity and uniformity. High school students also face the enormous stress of performing well in the nation-wide university entrance tests. As these tests measure knowledge of students across a wide variety of subjects, students feel compelled to memorize huge volumes of information (Kizilcelik, 2015). All the students are assumed to enter these nation-wide exams to study at a quality secondary school and then university for the sake of moving forward in their career.

The MoNE started a constructive education reform on the national curriculum at all levels of education in 2005-2006 academic year. This reform attempt was criticized by scholars as not being well-prepared and of failing to include the views of all the related parties of the national education system (Ev, 2010; Celikoz & Erisen, 2017). Although the new curriculum contained some universal requirements of a quality education system (Durmusoglu, 2017), it has not achieved its objectives in the long term because the teachers were not well prepared, and the contents of the courses and the environment were not suitable to implement the required changes; moreover, MoNE did not make regulations that would increase the applicability of constructivism and continues to follow policies based on behavioral pedagogy (Yildirim & Kasapoglu, 2015; Isik et al., 2015; Celikoz & Erisen, 2017).

In contrast, the private schools in Turkey have their own partially flexible curriculum and the opportunity to recruit, select, and train their own staff to pave the way for the successful implementation of constructivist education reform (Celikoz & Erisen, 2017). So, the private schools in Turkey can easily create their own exceptional cases to successfully implement the innovative reforms. While there have been private schools in Turkey since 1965, their numbers have increased rapidly after changes in the regulations and incentives offered by the governments since 1985 (Uygun, 2003). While there were 388 private schools in Turkey in 1985, today this has increased to more than 5,000 private schools in the Turkish education system. Although private schools in Turkey have been subject to educational research, there has been little empirical research on innovation and creativity in schools in Turkey.

Many Turkish educational leaders perceive developing innovative students and nurturing innovation as 'a luxury' because they are struggling with more immediate economic problems, perils of centralized bureaucracy, and infrastructure issues. After 90 years of John Dewey's report reviewing the perils of 'a mechanical system of uniformity' in Turkish educational system (Dewey, 1983); and after decades of nation-wide 'reforms' introducing top-down policy changes; the bureaucratic, centralized, didactic, and test-centered nature of the Turkish educational system is yet to be transformed. As more than 1.5 million students wildly compete in a nation-wide test marathon to access high quality university education, it remains a luxury for Turkish high school administrators to focus on developing teachers' and students' creative and innovative potential. Whilst a previous study investigated creativity in Turkish primary schools and on specific language courses, such as English (Kirkgoz, 2008), the role of school administrators in nurturing innovation climate and creating an environment conducive to creativity in Turkey has not been explored (Ceyhan, 2009; Ceran et al., 2014). So, the main research question of this study

is what is the role of educational leaders to nurture an innovation climate in schools operating in the context of a didactic education system?

Our study contributes to the literature in at least two ways. First, this research explores how educational leaders can shape a school environment (micro-climate) that encourages creativity and innovation when the wider education system is almost entirely focused on students' memorization and performance in centralized tests. Second, the study extends the previous literature by explaining how to nurture an innovation climate at the system level, so that changes will apply to most of the courses, different levels of schools, and each profession in the school system. Both contributions to the literature provide a blueprint for educational leaders who pursue educational reform efforts in different parts of the world, particularly those aimed to encourage creativity and innovation.

The following section summarizes our research methodology and data analysis procedures. Then, we delineate four emergent themes from our qualitative data.

Methodology

This study was conducted over two years in five schools within one of the largest networks of private schools in Turkey. We used a case study design to gather robust evidence within a real-life context and to study contextual conditions using multiple sources of evidence (Yin, 2009). To develop a rich context for this study, we included methodological triangulation in which we used multiple sources of data or evidence, including participant observations, interviews, interactive training sessions, and document analysis of archival data (Patton, 1990; Solomon, 1997). Using theoretical sampling to develop concepts relevant to the study aims (Corbin & Strauss, 2008), we followed the leads of emerging concepts that we identified through the archival data from

five schools in this network based on their commitment to offering innovative education, fostering creative skills of students, and using design thinking in the field of education in Turkey.

Participants and Procedure

Data collection at the five target schools in the network involved observations, semi-structured interviews, and retrieval of archival data for a total of 33 months. In addition, administrators and teachers who were involved in and led the efforts for creativity or innovation in the educational system in each school were also interviewed. Two administrators (school principal and vice-principal) and two teachers were selected from each of the selected five schools and a total of 20 participants (10 administrators and 10 teachers) were interviewed. Twelve participants were male and eight were female. The mean age of participants was 42 years.

This school network, which has been kept anonymous, currently has more than 50000 students and 6000 teachers and administrators in 80 campuses spread across Turkey. These schools provide an individualized, dynamic, and innovative curriculum to students beginning from kindergarten through to university. Their mission is to graduate students who are innovative, critical-minded, self-expressive, well educated, and successful in cultural, social, technological, and scientific fields. Ethical review and approval was sought from the university of the second author. All research participants gave informed consent to take part in research activities. Each participant was provided with a participant information leaflet, which explains the nature of the research, why they have been chosen to take part, what participation will involve the benefits and risks of participation and full assurances of confidentiality and anonymity.

Data Collection

Eisenhardt's (1989) framework helped the researchers theorize from the case of five schools using within-case analysis, which is an inductive and case-oriented approach. We followed this framework for at least three reasons. First, this framework helped the researchers to structure the theory-building process starting from specifying a research question to reaching closure. Second, the processes in this framework enabled the researchers to investigate this topic through a fresh perspective. Third, Eisenhardt's framework helped multiple investigators to manage multiple data collection methods across the selected schools. In line with Eisenhardt's (1989) guidelines, we accessed multiple sources of evidence to leverage data triangulation and strengthen the constructs substantially.

(1) Archival data: We gathered a variety of documents from each school. These sources included curriculum and lesson plans, school letters, principals' speeches, strategy briefs, yearly reports, meeting agendas, and billboards. Then, we used this information to prepare for the interviews, as well as to corroborate and supplement the other data extracted through other strategies (Yin, 2009).

(2) Observations: We observed the participants in their daily work lives and accompanied them as they moved between meetings, lunches, social gatherings, and school events. On every occasion, the observations lasted between two to three hours. The high-quality relationships we established with school administrators and teachers allowed us to elicit stories about daily work life through our conversations. We explored what practices they apply in the schools, while particularly focusing on strategies that nurture a climate for innovation. We were involved in naturalistic inquiry to study real-world situations in each school as they unfolded, allowing us to conduct genuine and sensitive research (Lincoln

& Guba, 1985).

(3) Interviews: We conducted twenty interviews with school administrators and teachers in five schools. Interviews lasted thirty minutes on average, ranging from twenty minutes to one hour. The interviews were semi-structured and allowed interviewees to talk about their everyday practices that encouraged innovation. Interview protocols were flexible, informal and broad, encouraging participants to talk freely about what they perceived to be significant. The interview questions focused on the key strategies school administrators and teachers pursued to encourage creative thinking, lifelong learning, and sustainable innovation across the school system. We took extensive hand-written notes, which we transcribed verbatim at the earliest possible time following the interviews.

(4) Interactive training sessions: The researchers arranged interactive training sessions with ten school administrators (two from each school). School principal and vice-principal from each of the five schools attended to a total of five interactive sessions. The first one was arranged at the launch of the study and the subsequent sessions were arranged in every six months during the study period. Designed to increase innovative capabilities, brainstorming activities during these sessions resulted in action plans. These activities gave the researchers the opportunity of training the school administrators according to the objectives of this study and following the implementation of innovative practices by regular follow-up feedback sessions.

Coding and Analysis

We used a data-driven coding approach (Boyatzis, 1998) to develop themes and codes that conform to the inductive theory-building nature of this study. We coded the three sets of data and organized thematically the emergent characteristics that shaped the contexts

and dynamics of schools, their innovation strategies, and the role of educational leadership in crafting these strategies. Once we realized that building collaborative ecosystems and pockets of innovative spaces were such obvious and strong themes in the data, we searched the interview data for categories that reflected similarities across participants on these issues. Four categories of discursive practices emerged out of the data before reaching theoretical saturation (Eisenhardt, 1989; Corbin & Strauss, 2008). This "constant-comparative" method (Strauss & Corbin, 1998) including an iterative process of data collection, analysis, comparison, and revision during the study allowed us to identify possible patterns in the data and explore them by returning back to the field for more data.

In the interviews we analyzed, the participants talked about their practices within schools that led to the identification of four themes that are explained in the findings section. Having identified these themes, we used an iterative process of moving back and forth between the data, relevant literature, and our emerging concepts to further elaborate on these themes. Once the categories were fairly well established, we coded the transcripts for evidence of each, resolving ambiguities and discrepancies in the coding. As new concepts or categories emerged either from the literature or the data, we searched the other to find evidence of the theme or to refine it conceptually.

Findings

In the sections that follow, we present data on each of these themes: unleashing school members' creativity, developing a collaborative learning ecosystem, encouraging innovative teaching through online collaborative learning spaces and ICT, and empowering teachers to generate an adaptable curriculum in a flexible work environment.

Unleashing School Members' Creativity

The first factor necessary for nurturing an innovation climate was unleashing school members' creativity and imagination. We observed a climate of experimentation, challenge, and collaboration. Inspired by the interactive training sessions we arranged at the beginning of the research; the school administrators provided opportunities for teachers to brainstorm their innovative ideas. They arranged 90-minute workshops (comprised of three 30-minute sessions) every month for teachers to share their creative ideas on innovative instructional methods and materials. These workshops encouraged the teachers to employ more creative patterns of instruction as expressed by a teacher:

> *"Each workshop was an opportunity for me to learn from the knowledge and experiences of my colleagues. We brainstormed our creative ideas, and I was convinced to use some of the innovative methods and materials in my teaching thereafter."*

School administrators adopted an open-door policy and spent time interacting with students, teachers, or parents in hallways and classrooms, which encouraged lively and inspiring conversations about learning. Frequent parent-teacher conferences and each classroom's WhatsApp group in which all the relevant parents and teachers took part allowed the voices of the parents to be heard by the educators. The parents were encouraged to freely share their creative ideas and suggestions with the teachers and school administrators to improve the school.

As a result of a rigorous staff recruitment process, the teachers in these schools were passionate about their jobs. Some teachers had been drawn into the teaching profession from other walks of life, which brought in diverse experiences and a richness of professional or entrepreneurial talent. One teacher commented:

> "*Our organizational culture is characterized by nurturing creative talents. You can be as creative as you can be in this school, and this is encouraged and valued.*

This is a bit radical – given that such behaviours are often punished in a typical school environment in Turkey. You are supposed to be uniform, conformist, and average in everything that you do. Do not even think, but act as a sheep in the herd."

Not only the teachers' creativity but also the students' creativity was nurtured in a flexible and supportive instructional environment. The classes were designed with open architecture to encourage teamwork and flexible learning for students. The schools established interdisciplinary departments, developed individualized learning programs, and allocated flexible time for student projects during the school day.

To develop students' creativity and imagination, teachers provided positive spaces for students where they could find their own voices and styles. We observed that the best teachers were those who went beyond one-size-fits-all offerings and customized their courses based on students' individual preferences and skills. These teachers acknowledged that every student learned in a different way and had particular strengths and interests.

The principals and teachers sought to develop this sense of imagination among students through supporting project competitions, student entrepreneurship funding, and service-learning projects. In the words of one principal:

"*We have been organizing ground-breaking science, art, and design fairs for our elementary, middle and high school students. We organize learning festivals to excite our students about learning at the speed of life. We do this through integrating art, science, and design. We want our students to come up with fresh ideas to advance human life and community life in Istanbul. We know that these transferable skills will help our students to be more employable and more entrepreneurial in their lives."*

The schools organized integrative learning projects that bridged across the fields of science, engineering, social innovation, arts, and design. For example, students carried out innovative service-learning projects addressing poverty in their neighbourhoods as well as in contexts as far away as Africa.

In sum, teachers, school administrators, and parents collaborated to nurture the innovative climate at school and to support students' creativity and imagination through a wide range of activities.

Cultivating a Collaborative Learning Ecosystem Ripe for Innovation

The second factor for developing an innovation climate was cultivating a collaborative learning ecosystem conducive to entrepreneurship and innovation. To proliferate innovation at all levels throughout the school system, some school administrators included innovation in job descriptions. In the words of a principal, *"Innovation must be in the head, heart, and hands of every teacher and student in the school system."*

We observed that the schools organized overnight innovation retreats, started educational think tanks, designed professional development days for teachers, brought diverse disciplines together, invited the best minds to learn, and exchanged ideas to design cutting-edge curriculum. Some teachers consulted with parents on how best to connect learning to the twenty-first-century world. Some schools were using WhatsApp and Facebook groups for parents to share information and to get their feedback and suggestions, whereas others provided workspace and a day of professional leave for teachers so that they could reflect, read, write, grow, design projects, develop new curriculum, and make new professional plans.

In our fieldwork, we witnessed recurring evidence of continuing system-wide efforts to design schools as ecosystems for innovation. Schools were modeling

themselves on innovative powerhouses such as Google and Apple to make the cultural shift from being traditional and cautious towards being innovative in a rapidly changing era. Revealed by the archival data and corroborated by the interviews and observations that using a portion of their time freely in their classes and meetings empowered teachers to create their own curriculum based on social media tools rather than to rely solely upon a textbook or e-text to facilitate instruction.

Principals used a distributed, people-centered approach to leadership, supporting flexible and organic organizational structures. Because of lateral structures, project teams, supportive relationships, and lifetime learning orientation, these schools became ecosystems ripe for innovation, where teachers and students enjoy the climate for freedom and experimentation. Both school administrators and teachers confirmed these findings during the follow-up feedback sessions of the interactive training practice. One principal said:

> *"If we only focus on students' test results, we know that they will not be developing the entrepreneurial and innovative capabilities that they need in their lives. When I ask students about their passions and dreams, they respond they do not have any dreams other than performing well in the university entrance exams. We think this is detrimental and pathetic for our future generations. Tests are so central in their lives that these kids do not dare to dream, imagine, design, create, or innovate. Therefore, we organize poster competitions, leadership games, start-up evenings, guest speakers, and company tours. I think visionary parents appreciate such broader focus on lifetime skills."*

Educational leaders also celebrated teachers' and students' innovative work. They used community events and publicized award ceremonies with parents' participation. Further, the schools published news and interviews in the school bulletin to celebrate

children's thriving genius, as it was revealed by the archival data and interviews. A principal commented:

> *"Even one innovation story can have a surprisingly stimulating effect on a school ecosystem. One of our students became a world champion in I-SWEEEP competition, and the story was featured on national media. It captured the imagination and pride of our teachers, parents, and students."*

The leadership roles for innovation and creativity seemed to be dominant roles not only for principals but also teachers in the schools that we observed. One of the teachers suggested:

> *"We should be champions of innovation ourselves and strive to cultivate a creative climate in every part of the school system. To cultivate this climate, we are constantly trying to find and support projects such as TEDx Talks, Start Up Evenings, and Young Entrepreneurs Club. We try to foster home-grown projects and innovative solutions, one based on the realities of their own schools, teachers, students, parents, and community."*

The responsibility for problem solving, planning, organizing, and decision making in each school was delegated to the staff members who were implementing projects. Teachers were working independently as well as collaboratively in teams to implement innovative projects. As one principal remarked:

> *"Everybody is creating fresh ideas every day to improve the quality of education and learning here. Our unique value proposition is our never-ending passion. This passion is shared by students, teachers, administrators, and parents. The dynamic, colorful, and positive school environment helps us to sustain this shared passion. Our doors are always open. I am the principal of this school, and as you*

see, my door is made of glass. This reflects our principle of transparency throughout this school network. Everybody can see someone else whenever he/she wants. We deliberately avoid traditional rules or old-fashioned bureaucracy."

Overall, three subthemes seemed to be particularly valuable in cultivating a collaborative learning ecosystem that enabled a separation from the mainstream traditional and test-oriented education in Turkey; which in turn inspired creativity of both teachers and students in the fabric of daily school life.

The first subtheme was tolerance of *diversity*. Learning and innovation was nurtured through diversity of ideas and perspectives. Educational leaders worked well with people who come from different cultural backgrounds or who had different motives, work styles, or values.

The second subtheme was tolerance of *chaos*. Innovative school leaders liked the chaos that emerged when teachers, students, and parents came up with new projects or ideas. They knew that organizational learning and innovation emerged when teachers, students, and parents bumped into each other or spent time on recreational activities with each other.

The third subtheme was tolerance of *failure*. School administrators and teachers were more tolerant of risk-taking and failure especially when students experimented with the unknown. It was important to learn from failure and move on to the next idea. Students received support to pursue risk, fail, recover again, and progress in the cycle of continuous learning and innovation.

Encouraging Innovative Teaching through Online Tools and ICT

The third factor for nurturing an innovation climate was encouraging innovative teaching through online collaborative learning spaces and ICT. The school administrators

and teachers expressed their awareness of the expectations of this new generation who are technology natives and learn and socialize on the Internet. Teachers also stressed the importance of the support and encouragement from the school administrators in motivating and facilitating the use of ICT and online tools as essential components of innovative teaching.

A principal stated his awareness of the learners' new world and the need to adapt to the requirements of this rapidly changing world:

> "*Our students are different. They use Google and reach all kinds of information in a second. There is no point in forcing them to memorize unnecessary information. They live in hyper-connected digital ecosystems. They navigate immersive virtual worlds. They shop, have fun, and learn there. They play online games with hundreds of others. They communicate and cooperate virtually. This is truly the era of 'Black Mirror'* [he refers to Charlie Brooker's series]. *This is a whole new world and we have to adapt to this new world."*

Teachers were also eager to transform teaching and learning through Web 2.0 tools. As one teacher commented:

> "*Web 2.0 tools have dramatically changed the education landscape. We want to be pioneer in creating new pedagogical tools that are customized for the learning needs of our Internet-savvy students. We are talking about School 2.0, Education 2.0, and Learning 2.0. Our goal is to build vibrant and innovative learning ecosystems in our school."*

One teacher emphasized the role of the school administrator in encouraging and motivating them to utilize online collaborative learning spaces and ICT as essential components of innovative teaching in this modern era:

"Our school administrator always encourages us to use ICT and online tools in our teaching. He stresses the importance of this topic and motivates us in his weekly speeches. We receive several informative emails each week from the school administration, informing and motivating us to employ the innovative ways of using such technologies in our teaching practice."

As a part of the analysis of the archival data, we checked the mass emails sent to the teachers by the school administration and confirmed the same finding that at least one email was sent to the teachers each week, informing them of various innovative ways of using ICT or online collaborative spaces to increase the effectiveness of their teaching practices. This finding was consistent at all five schools in this school network. Our observations and the interview results also revealed that the school administrators did not only inform and motivate the teachers to employ such innovative tools but they also provided them with the technical and logistic support, and facilitated the implementation process by giving them flexibility and autonomy during the implementation. The participants reiterated those facts during the follow-up feedback sessions of the interactive training practice. As a result, the use of creative digital tools in the classroom enabled teachers to adapt curriculum to each learner's needs, especially those needs relevant to twenty-first century learning.

Empowering Teachers to Generate an Adaptable Curriculum in a Flexible Work Environment

The last factor in nurturing an innovative climate was empowering teachers to generate an adaptable curriculum in a flexible work environment. The school administrators involved the teachers in these schools in the decision-making mechanism and gave them a high degree of job autonomy. Teachers declared that the school administrators asked their views on the academic issues in the meetings held biweekly

and their opinions were reflected on the decisions and practices. They felt that their voices were heard, and they had an impact on the decision-making mechanism at school. These shared and empowering leadership practices promoted the teachers' self-efficacy and motivated them to explore the ways to create innovative ideas to improve their school. One teacher commented:

> *"Our school administrator follows a shared management approach. He asks our opinions on every issue related to teaching and learning. I am satisfied to see the managerial decisions and practices revealing that our opinions have so far been taken into consideration. Feeling the impact I have on the school gives me a self-confidence and motivates me to search for innovative ways to contribute to the improvement of my school."*

Teachers also indicated that the school administrators gave them enormous autonomy in preparing their teaching methods, materials, and other parts of curriculum design. As a part of the archival data, we examined the lesson plans comparatively and identified original and creative approaches, methods, and materials used by the teachers. They did not stick to the traditional methods and materials for a specific lesson, instead, they explored and practiced more innovative and creative ways of teaching. Such a flexible work environment and the autonomy given to the teachers enabled and motivated them to develop an adaptable curriculum focusing on the development of twenty-first century skills. Both the school administrators and teachers emphasized those points throughout the follow-up feedback sessions of the interactive training practice.

This curriculum was interdisciplinary, project-based, relevant to practice, and adaptive to constant change (Shaw, 2009). We observed that the schools were equipped with a project-based curriculum aimed at engaging students in addressing real-world problems, issues important to humanity, and questions that matter. The curriculum

highlighted the values of inquiry-based education, critical thinking, hands-on experience, and service-learning. During their education, students went through the cycle of asking questions, making observations, listening to various stakeholders, conducting field work, analyzing and synthesizing information, solving problems, designing social innovation, and coming up with community projects. The objective of this cycle was to develop students' employability skills.

School administrators and teachers in this school network consider employability as a crucial outcome of learning. So, the curriculum was designed to develop key skills essential to surviving and thriving in the job market, such as professionalism, self-management, time management, coping with uncertainty, working under pressure, teamwork, using social media, self-confidence, willingness to learn, and accepting responsibility. A teacher in charge of employability skills said:

> *"I am working closely with employers to make sure our curriculum responds to their needs. From what I understand from my conversations with these employers, they want graduates who are able to think innovatively, come up with a lot of fresh ideas, and express their ideas convincingly and eloquently. We try to incorporate skill development in areas such as creativity, critical thinking, and problem solving in every discipline. We know that, for employers, the added-value of our education is not from knowledge per se; it is from skill development in critical areas such as thinking out of the box, writing eloquently, and communicating clearly."*

The schools aimed to train graduates open to continuous learning for the knowledge society. The teachers were role models as they adopted lifelong learning, one teacher commenting:

"*We must instil curiosity, inquiry, and creativity into our schools, which are fundamental to lifelong learning. We must excite our students to learn beyond their classes for their own lives.*"

Teachers made extensive use of presentations, teamwork, projects, and exhibitions to enable students' multifaceted learning. Students used multimedia tools to produce web sites, documentaries, and films extensively. Art, music, theatre, and film studios were created in multimedia labs where students were involved in architectural design, 3D filmmaking, or animation films. As one principal commented,

"*Artistic, scientific, and technological breakthroughs of the twenty-first century will result from the integration of science, art, and design. Creativity and integrative thinking are becoming the most important skills for our children and youth. That is why we always strive to provide opportunities for our students to learn, entertain, experiment, and innovate together. We want to develop young scientists, artists, designers, inventors, innovators, leaders, and social entrepreneurs of the future. We do this by inspiring their curiosity and unleashing their passions."*

Educational leaders make daily contributions to student incubators, project competitions, and provide internship opportunities for students. The schools' educational practices are based on multiple intelligences, rich physical, social, cultural and sportive resources, internationally awarded scientific projects, and creative possibilities that bring nature and modern technology under the same roof. Other interventions include social responsibility projects that raise awareness, teen MBA programs that develop leadership and entrepreneurship, and commitment to experimentation across the fields of business, design, and the arts. The schools collaborated with experts in universities and the business world to experiment with project-based learning, technology incubators, and design

projects. These efforts included integration of diverse disciplines such as arts and science, geography and sociology, chemistry and ecology, mathematics and project management, and fashion and business. One teacher commented:

> "*We inspire our students through non-traditional careers of professionals across diverse fields of life. We talk about Ferran Adria's passion for cooking, Brian Cox's passion for physics, Gianni Versace's passion for fashion, Steve Jobs' passion for beautiful gadgets, and Gordon Selfridge's passion for retailing. We use Desert Island Discs and TED Talks to pick up from the brains of some of the best minds in the worlds."*

Teachers encouraged students to take initiative for their own projects to support their learning through an integrative curriculum. Teachers also supported collaboration across the curriculum to build projects for local communities. For instance, students measured the quality of life in their neighbourhoods and offered ideas to improve it.

Henrich et al. (2006) describe the twenty-first century learning spaces as villages of classrooms, which are built upon a sense of community and belonging. The twenty-first century curriculum is based on multiple literacies including digital, multi-cultural, ecological, financial, emotional, and visual (Shaw, 2009). The new curriculum is about collaboratively generated content and e-learning rather than books, personal devices rather than the blackboard, and lifelong learning skills rather than memorization and regurgitation of facts. The curriculum is not textbook-driven or fragmented, but is thematic, project-based, and integrated. One teacher commented:

> "*Students achieve higher levels of learning when they are involved in projects that engage in real life and address today's issues such as renewable fuels, health nutrition, global warming, digital creativity, and sustainable design. Students enhance their learning as they create projects and deliver them to audiences. They*

go beyond textbook information. They realize that they can make a difference and change the world."

In some schools, students apply their knowledge of research, science, technology, and engineering to design products, services, and workspaces. These shifts have implications for teachers, as they can provide unique learning experiences for students. In the words of a teacher:

"*We are not dispensers of information anymore, but we are facilitators of learning and helping students give meaning to information. Our students need to shift from passively acquiring knowledge to becoming self-directed learners. They need to actively engage in inquiry, critical thinking, and creative thinking."*

Some of the administrators and teachers worked at this private school chain had also experience at various public schools. So, they were able to compare the public school system with their current schools. As one teacher commented:

"At the public school where I previously worked, there was a pressure on teachers to ensure that students passed their exams. So, we had to follow a rote-learning approach. This is why there was not time for innovation. However, we can focus on more important issues at this school to create new ideas for the development of our students."

In sum, the school administrators and teachers worked hard to go beyond the rote-learning based curriculum, embodied the recent changes in the world, and tried to develop the twenty-first century skills in their students.

Discussion

We explored a private school network in Turkey that achieved some progress in designing student-centred, experiential, and innovative approaches to teaching and

learning. In contrast to the public schools in which the administrators and teachers are under the pressure of ensuring their students' achievement in their exams which results in a didactic approach to teaching (Titrek, 2015), these schools successfully designed as playful learning spaces for students where they had the opportunity to adapt, reflect, challenge, collaborate, design, and innovate. This achievement is even more significant in the context of the Turkish educational system, which is still considered to be centralized, teacher-centred, and rote-learning based (Kizilcelik, 2015). By providing an analysis of best practices for nurturing an innovation climate in the Turkish educational system, this exploratory study addresses the gap in understanding of ways of developing creativity and innovation that challenges the centralized and didactic educational systems. We also contribute to filling the gap of empirical research on everyday practices designed to inspire creativity in educational systems in international and cross-cultural settings. Findings indicate the importance of building collaborative ecosystems that encourage innovation and designing everyday experiences that inspire creativity in teachers and students.

Implications of the Study

This study has several implications for educational research and practice. In particular, findings underline key strategies that educational leaders can adopt to nurture an innovation climate at school. The first implication is to foster the creativity of the members of school society by bringing them together and encouraging them to share their creative ideas for improvement. The current findings corroborated the previous research results (Moolenaar et al., 2010; 2011; 2014; Mumford et al., 2002) that building strong social bonds between the members of school society and allowing them to share their creative ideas flexibly in a supportive, flexible, and collegial environment facilitate the development of nurturing relationships that would enhance an innovation climate at

school. Open and healthy communication helped the creative ideas flow across the members of the school community and stimulated the educators to take action for innovative practices.

The school leaders' efforts in fostering creativity and the creative synergy in school community encouraged the teachers to use innovative strategies to nurture the creativity of students. Integrating arts, science, and design in the curriculum in an effort to unleash students' creativity, was a theme consistent with the literature (Robson et al., 2005). As Robson et al. (2005) suggested, students' imaginative capacities can be tremendously developed when synchronized integration of art and science takes place in experimental and innovative teaching programs.

To unleash imaginative capacities of students, educators need to think of new ways to engage diverse student cohorts and capture their interests. The constructivist view of learning advocates customization based on diversity since it acknowledges that children have their own views or attitudes formed as a result of their life experiences, which are critical for meaningful and transferable learning (Littledyke & Huxford, 1998). Educators need to be aware that young children innately possess creativity and imagination that is generally lost in dry and out-of-context educational programs (Gardner, 1993; Robinson, 2001). Therefore, educators need to have a vision for an interactive educational philosophy to nurture creativity, imaginative capacity, and wonder in scientific inquiry.

The second implication for educational leaders is to develop a collaborative learning ecosystem and the right set of conditions across the school system to nurture innovation. For instance, following the model of Google, educational leaders can dedicate twenty percent of every class and meeting time for thinking big, asking new questions, finding everyone's creative voice, and starting up innovative projects (Baker & Burns,

2010). Educational leaders need to lead the way by serving as role models to teachers, focusing them on student success. In contrast to the findings of this study focusing on the private sector, research focusing on the public school system in Turkey showed that the school cultures and structures are not conducive to innovation and teachers who come up with an innovative idea are not always welcomed by their school administrators (Titrek, 2015).

Three subthemes emerged as key components of such a collaborative learning ecosystem: tolerance of diversity, tolerance of chaos, and tolerance of failure. Confirming the results of the previous research (Benoliel & Berkovich, 2020; Daas et al., 2020; Darabi et al., 2018; Louis & Robinson, 2012), the current study asserts that an innovation climate can be nurtured in a diverse and vibrant school environment through the collaborative learning experiences of risk-taking school members who learn from their intelligent failures. Such a learning ecosystem requires a school leader who performs the "networked leadership" roles (Leithwood, 2019) through building learning communities, providing the required support for learning, coordinating the common activities, nurturing the practices for cooperation, and facilitating collaborative work of school members. The third implication for educational leaders is to encourage innovative teaching through online collaborative learning spaces and ICT.This finding corroborates the previous research findings that a school's innovation climate is positively associated with innovative teaching using online tools and ICT (Chou et al., 2019) and the support and encouragement of educational leaders are essential in the successful implementation of innovative teaching practices (Thurlings et al., 2015). Teachers' acceptance and use of those innovative methods and materials is essential in realizing innovative teaching (Mirzajani et al., 2016) and the current results show that the school administrators played a key role by convincing, encouraging, supporting, and motivating the teachers to practice

the required innovations and to deal with the challenges on the way of successful implementation. Especially in traditional education systems characterized by memorization, technological, generational, and attitudinal challenges may inhibit the success of such innovative practices (Vest, 2006). Supportive and facilitative leadership practices may have enhanced the self-efficacy of teachers in employing such innovative tools (Thurlings et al., 2015) and helped them deal with those challenges.

In most of the workplaces today, employees multitask, work on interdisciplinary teams, make meaning out of conflicting information, experiment with social media, and engage in self-directed learning (Karakas & Manisaligil, 2012). Using open courseware, blogs, and wikis (Williams & Jacobs, 2004), tutors can prepare novel teaching materials that will energize the process of collaborative learning among students. In an attempt to adapt for the technology natives' learning needs, many schools have already been experimenting with participatory classroom technologies and Web 2.0 tools (Thompson, 2007). Previous research findings revealed that when teachers and students are trained and encouraged to use these innovative web-based tools effectively, their creativity and learning outcomes are significantly improved (Lin & Wu, 2016; Meng et al., 2016). With the increasing use of social media in education (Tapscott & Williams, 2010), schools have the potential to be more empowering, collaborative, and dynamic institutions where students can design their own learning experiences.

The fourth implication for educational leaders is to empower teachers to generate an adaptable curriculum in a flexible work environment. The results of the current study confirms the previous research findings on that school administrators' empowering leadership practices in terms of delegating power, involving teachers in decision-making process, and giving them a high degree of job autonomy contribute to the development of an innovative climate at school (Sagnak, 2012), strengthen teachers' sense of self-

efficacy (Hemric et al., 2010; Lee et al., 2012), and gives them feelings of accomplishment, impact, and meaningfulness which resultantly motivate them to explore innovative ways of contributing to the improvement of school (Gkorezis, 2016; Hsiao et al., 2011; Thurlings et al., 2014; Zhu et al., 2019).

Creativity and innovation are likely to flourish when teachers try out new pedagogies and share innovative curriculum with their peers. In such a way, teachers can adopt an innovative teaching approach and apply creative classroom practices (Ucus & Acar, 2018). Educational leaders are advised to open up the curriculum and co-innovate with teachers, students, and students' parents to make the curriculum more interactive, digital, and dynamic (Tapscott & Williams, 2010). Educational leaders can also create digital learning platforms like massive open online courses (MOOCs) where best teachers share their exemplary lessons online and students can customize their learning experience and engage in a learning journey of their own. In such platforms, students can also participate in online discussions, forums, and wikis with other students worldwide to share their learning and discoveries. In this way, the twenty-first century school will itself be a global network, an open learning platform, and a digital ecosystem.

These educational transformation efforts would be in line with the initiatives around the world to prepare schools for the learning needs of the twenty-first century, like the ones in the UK (Mahony & Hextall, 2012), Denmark and Sweden (Leiringer & Cardellino, 2011), and Australia (Burnard & White, 2008). These efforts aimed to design learning environments suitable for providing students with skills required in the new knowledge-based economy of the twenty-first century, including creativity (McWilliam & Haukka, 2008), innovativeness (Leiringer & Cardellino, 2011; Mahony & Hextall, 2012), and effective usage of the most recent information technologies

(McWilliam & Haukka, 2008). While Mahony and Hextall (2012) question the effectiveness of past design endeavors and acknowledge the fundamental influence of school policy, a growing number of studies demonstrate the potential positive impact of school design (Leiringer & Cardellino, 2011) and also commitment of teachers, principals, school staff, and school communities (Koch et al., 2015; Kidger et al., 2010; Burnard & White, 2008), on adopting new ways of learning to foster an innovation climate at school.

Conclusion

This paper opens up new possibilities for educational leaders in transforming schools to prepare students for the changing conditions of the twenty-first century. In particular, this study underlines the importance of a system-wide positive organizational culture, an integrative curriculum, and collaborative learning spaces that support innovation throughout the school system.

Based on qualitative methods, we explored how educational leaders nurtured innovation and innovators in their schools. We identified four discernible discursive practices that shape a climate conducive to nurturing innovators: fostering the creativity of the members of school society, developing a collaborative learning ecosystem, encouraging innovative teaching through online collaborative learning spaces and ICT, and empowering teachers to generate an adaptable curriculum in a flexible work environment.

Surrounded by constantly changing environments, a school should develop innovative structures and processes to nurture students' intellectual capacities to learn in and adapt quickly to the unpredictable conditions. Such a learning school can operate as a genuine community that draw on a shared vision and a collective intelligence (Brown

& Lauder, 2001) and inspire its members in pursuit of continuous improvement. We anticipate that this study will stimulate educational leaders to create learning schools by adopting a practical approach to nurturing an innovation climate through everyday practices.

Limitations of the Study

Sampling from a single private school system presents a limitation to the generalizability of the study. As this school network serves students from families of higher socio-economic status and students who have access to cutting edge technology, it would be more challenging to implement such innovative approaches in public school systems suffering from economic problems. Nevertheless, some of the practices, such as incorporating teamwork and games in the curriculum do not require substantial extra investment therefore could be incorporated into the school curriculum without any financial costs. Further research might explore if these innovative approaches yield similar outcomes in public schools or if there are alternative ways to nurture innovation climate in public schools.

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