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The reflection of organisational culture on technology usage in secondary education classes

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Abstract

This study aims to find 'the reflection of organisational culture on technology usage in secondary education classes'. Ten teachers were chosen as participants via chain sampling. The data were collected by means of open-ended questions asked at semi-structured interviews. The data was processed via content and thematic analyses. Tables were used to present the data. The findings of the study indicate that the school leaders are unable to find efficient solutions to problems about in-class technology usage. It is also determined that virus programs on computers are not up to date. Teachers do not prefer using technology in their classes since they are anxious about falling behind the annual plan and the classes are over-crowded. Another noteworthy finding is that even though some teachers use technology for educational purposes, they help each other and share their materials, and there are some teachers who do not act responsibly concerning the usage and protection of the devices.

Keywords: Organisational culture, technology, school director.

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1. Introduction

Dincer (1992, p. 217) explains 'organisational culture' as a system of leading people's behaviours, beliefs and habits. For Alganer (2000), leadership is to lead the staff, form a permanent values system, be a role-model, establish unity among the staff by organising activities to be adapted by future generations and form an organisational culture.

Erdem (1996) argues saying that an organisation becomes effective as long as it creates common values. Basaran (1991), on the other hand, explains norms as criterions based on the organisational values and adapted by many norms that specify the way to achieve the target as well as define the wrong and the right and govern behaviour (Erdogan, 1997).

Kaya (1999) emphasises the importance of communication and collaboration among all organisational activitıes and administrative procedures. The main aim to do so, as Aydin (2000) points out, is to make sure that the target of the organisation is well understood by its members and provide collaboration to achieve the aim.

Alas and Vadi (2003) point to the relationship between cultural and individual change. To provide an ongoing and radical change, individuals need to be willing to change and form new behaviours.

Organisational changes are comprised of interests, changing values, gaining new skills and their application and organisational learning (Boyce, 2003).

1.1. Educational technology

Toprakci (2002) defines a school as an organisation with students, teachers, other personnel and equipment. Technology in education is meant to put all factors in use in the most effective way to provide conscious and well-planned teaching (Dogdu & Arslan, 1993).

The use of the Internet has reshaped the teacher–student relationship by providing unlimited resources. The teacher has changed roles from teaching to guiding students to reach resources they need on the Internet. Both the teacher and student, now, can get whatever information they need on the Internet (Akkoyunlu, 2002). Korhan (2001) points out the advantages of Internet in detailed studies both by the teacher and student, self-development, bringing innovations and developments into class, learning through videoconferencing and providing opportunities for creativity and sharing. On the other hand, Kuskaya and Kocak (2004) raised worries that teachers are far beyond using the technology effectively due to limited budget, lack of equipment and administrative support.

Akkoyunlu (2002) came to a conclusion that lack of infrastructure in schools, difficulties the teachers have in reaching technology and lack of knowledge in the use of the Internet and as a result failure in the integration of technology into teaching bring about a negative effect on the teaching processes. Therefore, school directors should appreciate the new technologies and lead teachers to learn all about them. If done so, both the teachers and students will be willing to use technology in class. Otherwise, the wish to use technology will lessen. It is the director's responsibility to open the way for new developments (Can, 2008).

Cagiltay, Cakiroglu, Cagiltay and Cakiroglu (2001) found that many teachers are not familiar with the technology in schools because they are not trained well, the lack of sufficient computers and the unsuitability of the programs for Internet use which are emphasised as the biggest handicap in teaching.

Can (2008), in his study, tried to find out the number of technical personnel, the use they made of technology in workshops and laboratories, the amount of help teachers received from the involved when working with technology, and also the collaboration among the staff. The result of the study revealed that primary education directors were found ineffective related to technology in schools.

Hasselbring et al. (2000) pointed out the factor of the school director as supervisors, supporters or obstacles in the use of technology (Macaulay, 2009).

2. Aim of the study

The aim of the study was to investigate secondary education teachers' views about the reflection of organisational culture on the in-class use of technology. The following questions were asked to teachers for the answer to:

1. What factors do the following have on the use of in-class technology?
   a. School directors
   b. Teachers
   c. Servants
2. When sharing the equipment in the classroom do teachers expect the following from each other?
   a. Sharing and collaboration
   b. The feeling of responsibility
   c. Support in need
3. What do teachers think about the maintenance of the equipment in the classroom?

3. Methodology

3.1. Research design and the participants

In this study, a situational design was used to collect data through a semi-structured interview technique. The participants were 10 teachers from the general secondary education schools (2015–2016) through snowball sampling method.

3.2. Data collection means and procedure

A partly structural form was used to collect the data. Before preparing the question, an open-ended question draft was approved by two experts. The form was, then, tried with two teachers. Upon receiving reliable data, the same procedure was applied to other teachers. The form consisted of three open-ended questions.

The data were collected through face-to-face interview that lasted 15 minutes each. The data was only used for the research and there was no identity specification.

3.3. Data analysis and coding the data

The data was analysed through a content analysis procedure and was studied in detail. The common themes were specified, coded and put into categories. The coding keys and interview documents were read separately and 'agreed' and 'disagreed' points were set and necessary arrangements were done. For the reliability of the study, Miles's and Huberman's reliability formula was used. The average was specified as 85%. Themes were set according to the codes fitting with each other.

While forming the documents, each participant was given a number. The data from the participants were examined and put into sections, and each section was named and coded according to its concept.

3.4. Specifying the themes of the coded data and arrangements of the codes and themes

The codes were put under specific sections to form the themes. The participants' views, as they stated, were defined in a clear and comprehensible way. The participants' utterances were put into '.....' (inverted commas) to specify the respondent as follows:

'..... (T: 1)'

'T': Teacher

'1': Participant 1

The findings from the study were interpreted and results were reached through steps in a qualitative research method.

4. Findings and interpretations

Dimension I: Teachers' views about the attitudes of school directors, teachers and attendants towards in-class technology use

This part is aimed at finding the answer to Dimension I.

a. School directors' attitudes towards in-class technology use

Table 1. School directors' attitudes towards in-class technology use

Themes				Per cent %	
	Stated	Not stated	Total	Stated	Not stated
The school director provides the basic needs	5	5	10	50	50
School directors try to provide as much technology as they can	6	4	10	60	40
The lack of equipment in schools	2	8	10	20	80

Ten secondary education teachers were asked about 'a' above and their thought and views were presented in Table 1. To question 'a' above, 50% answered saying that the school director provides the basic needs. *'They arrange classrooms, facilities to do with electricity and so on. In every classroom, there is an electronic-board',* said T: 6. '*They provide every facility and support in class to make technology use easy. There is Internet access in every classroom. They find quick solutions to our problems',* explained T: 10. This reveals that school directors provide all basic equipment needed for the use of technology in the classroom.

60% of the participants said, 'School directors try to provide as much technology as they can'. T: 2 said, 'Our director tries solutions to do with the problems we face, but he is not always successful. Although we have Internet access in the classroom, we face difficulties from time to time due to the general Internet problems in the country. Our director tries his best to respond to our demand, but sometimes things go beyond his means', answered T: 2. Another participant explained as, 'Our director tries all his best, with all the means and financial conditions at hand, to facilitate the use of technology in our classrooms' (T: 7). Six participants supported their directors with the effort they show to help teachers as much as he could with all in hand. On the whole, the participants agreed that they got support from their directors, but there were occasions where the directors could not do much due to some inconveniences.

20% of the participants agreed on the lack of equipment in schools. One complained about the lack of electronic board in the computer lab, (T: 4). These statements can be interpreted as the teachers do not get full support from the directors related to the use of technology in class and reason this as the directors' being care-free.

b. Teachers' attitudes towards the use of technology in class

Table 2. Teachers' attitudes towards the use of technology in class

Themes	Per cent %				
	Stated	Not stated	Total	Stated	Not stated
Not many use technology in class	6	4	10	60	40
Demotivating comments by the users for non-users of technology in class	1	9	10	10	90

In the first dimension, 10 teachers were asked about their thoughts for teachers' attitudes on using technology in the classroom. As seen in Table 2, 60% stated that the number of teachers using technology in the classroom was low. T:3 stated, *' The number of users is low. Only 1/3 of the teachers use technology in the classroom*'. '*Only I use technology in the classroom*' admitted T: 7. One other teacher said that a few teachers used technology in the classroom because problems faced took a long time to be fixed (T: 8). T: 10 explained, *'Very few teachers make use of technology in the classroom. I myself do not use it. It is true that in crowded classrooms we face disciplinary problems and insufficient time to cover the syllabus affects technology use negatively*'. T: 6 added saying, '*Teachers do not support technology use because they do not use it although they are willing to, but they cannot use it effectively in every lesson'.* It is understood that technology is not used in the classroom as expected and the involved teachers do not seem to be open to the use of technology in the classroom. T: 5 admitted that non-users of technology in class demotivate the others by saying that there is no need for technology. Therefore, a big number of teachers ignore technology in their lessons. This means that the benefits of technology use in class is often underestimated.

c. Attendants' attitudes towards the use of technology in class

Table 3. Attendants' attitudes towards the use of technology in class

Themes	Per cent %				
	Stated	Not stated	Total	Stated	Not stated
Cleaning the rooms where technological equipment are kept	5	5	10	50	50
Awareness of cleaning the equipment without any harm	4	6	10	40	60

Ten teachers were put the above question (C) and their views were given in Table 3. 50% of the respondents admitted that the classrooms with equipment were regularly cleaned. '*So far we haven't had any problems to do with cleaning' (T: 2).* '*The classrooms with equipment are regularly cleaned. In case of a problem, I immediately warn their cleaners and have the work done' (T: 5).* (T: 7) expressed the same positive view and added that the cleaners do their job properly. (T: 10) said the cleaners cleaned the rooms with electronic equipment as expected. In short, the participants stated that the servants did their job with the fact that they are fully aware of their responsibilities.

40% of the participants argued that the servants need to be briefed on how to take care of the equipment. One, (T: 10), disagreed saying that they did not care much about cleaning the equipment

and this was not an excuse for teachers not to use the equipment. T: 4 said, '*They do the cleaning partly, but because they avoid harming the cables, they keep away from the computers. In the end we have to do the cleaning'.* '*We have problems with the cleaning of the electronic boards. Because the screens are not cleaned properly, we have problems sometimes. The servants need to be briefed on this issue'* explained T: 6. '*The servants harm the equipment while trying to clean them. We do warn them frequently, but nothing changes much*' added T: 8. In summary, the participants agreed that the servants didn't do proper cleaning with the fear of not harming the equipment. They also pointed out that there were organisational problems in schools which have a negative effect on the teaching process.

Dimension II: Teachers' views on sharing, collaboration, responsibility and support in need of information in the use of technology in class

a. Teachers' views about sharing and collaboration in the use of technology in class

Table 4. Sharing and collaboration in the use of technology in class

Themes				Per cent %	
	Stated	Not stated	Total	Stated	Not stated
Support among teachers to do with materials	5	5	10	50	50
Lack of collaboration among teachers	2	8	10	20	80
There is no sharing or collaboration because the lack of use of technology in class	2	8	10	20	80

Ten participants questioned on 'a' above stated that 50% of the participants supported each other in the use of technology and material in class. T: 2 added saying, '*We share all slide- projections. We have a strong collaboration*'. '*We're always in collaboration. We share presentations, but we don't have much to do with others*'. T: 4 admitted saying, '*We are all informed about our in-class activities. We share every activity*'. T: 9 supported this view saying, '*The teachers share all CDs and materials they prepare*. This can be summarised as the participants' agreement on sharing, support and collaboration among themselves, which shows a strong communication among schools at stake.

20% of the participants said there was no sharing among teachers. One participant, T: 5, admitted saying, '*I do not share or collaborate with others'.* T: 7 had the same view saying, '*We do not share materials. We use our own materials*'. From these sayings we understand that some teachers do not share, but prefer individual work.

The other 20% of the participants admitted saying, 'Because we do not make use of technology in class, we have nothing to share or collaborate'. T: 8 supported this statement saying, 'We do not share or collaborate for something we do not use'. T: 10 explained views as, 'In order to share and collaborate, everybody should be using technology in class. Because we se3ldom make use of technology in class, sharing and collaboration is not at stake'. The message in these views shows that in over-crowded classrooms and disciplinary problems take up the teacher's time, so they avoid using technology in class.

b. Views about sharing responsibility in the use of equipment

Table 5. Teachers' views about sharing responsibility in the use of equipment

Themes				Per cent %	
	Stated	Not stated	Total	Stated	Not stated
Teachers' awareness in the use of equipment	5	5	10	50	50
Protection of the equipment	5	5	10	50	50

Ten teachers were questioned on the above issue (b) and their views were presented in Table 5. 50% of the participants stated that teachers did not have the responsibility for sharing the equipment. T: 2 stated, '*We share the same room and the same key. When the key is lost, you can't find it. You have to use the spare key, which means irresponsibility and annoys us. Some leave the computers switched on. Before I leave, I check and switch them off*'. '*We share the same room. We all have our keys and board-markers, so we don't have problems, but the equipment are left switched on or are not shut down properly. This annoys me*' said T: 5. One other (T: 6) complained saying, '*I witness some electronic boards not switched off properly. When I switch it on, I face problems and waste my time. Such irresponsibility annoys me*'. T: 6 supported this view saying, '*Especially, the electronic boards are not switched on/off properly. This causes waste of time and annoys me'. T: 8 had the same view. 'Because the electronic boards are not switched on/off properly, it causes waste of time for the next teacher. Some teachers use their USPs with viruses which slow down the whole process. At times students can reach teachers' password which slows down the Internet and cannot be used effectively. It is true that the electronic boards are not locked' (T: 9).* Teachers, in general, do not feel fully responsible for the proper use of technology in class. They are not good at using the equipment. This means waste of time for the others and harm to the equipment. They are not careful about viruses. Thus, the other teachers are annoyed.

50% said the equipment is protected. One admitted saying, 'I and my friends share the same room. We share the equipment. Everybody is responsible for the equipment and they do what they are supposed to do and I'm happy about it' explained T: 1. T: 3 had the same views as T: 1 saying that they are very careful with the equipment in every aspect, so they do not experience problems. T: 4 added that they share a lot and do not face problems. All the equipment is given utmost care in their use and they warn and follow the students about the use of the equipment. T: 7, too, said, 'Utmost care is taken by teachers to prevent any damage to the equipment'. In this respect, it sounds clear that the participants are careful about the equipment, have the responsibility, thus they do not face problems.

a. Views about the support in need of information in the use of equipment in class

Table 6. Support in need of information in the use of equipment

Themes				Per cent %	
	Stated	Not stated	Total	Stated	Not stated
Technical knowledge of computer teachers	5	5	10	50	50
Efforts by computer teachers to solve problems	2	8	10	20	80

Ten teachers were questioned on the above (c). Their views are given in Table 6. 50% said the computer teachers did not have technological knowledge. T: 1 explained views saying, '*I face problems from time to time when I use the equipment. I ask for help from the computer teachers, but they cannot help me with my problems. We cannot easily reach the technicians for help*'. T: 5 raised the same worries saying, *'We cannot get help from other colleagues, because they are not good at working with the equipment. Then, I ask for help from outsiders. Computer teachers do not have technical knowledge*'. 'We try to get help from the computer teachers, but they cannot help us much' said T: 8. To the same question, T: 9 responded and said, '*The teachers always refer to the computer teachers when they have a problem with the equipment. They help us as much as they can'.* From these views it may be understood that lack of technical knowledge among the teachers hinders the use of technology in class.

20% of the participants agreed that computer teachers try to help with problems. T: 2 admitted saying that he got help from the computer teachers. T: 7 answered as, '*The computer teachers try* to *help as much as they can'.* We can come to the conclusion that a number of teachers ask for help and get it mainly from computer teachers. This means that there is collaboration among teachers, but there are still constraints in the teaching process.

Dimension III: Teachers' views about the maintenance of the equipment

Table 7. Views about maintenance

Themes				Per cent %	
	Stated	Not stated	Total	Stated	Not stated
Irregular maintenance of the equipment	6	4	10	60	40
Inadequate anti-virus programs	3	7	10	30	70

The answers received from 10 participants are given in Table 7. To the question to do with the maintenance of the equipment in their classrooms, 60% gave a positive answer saying that the equipment was not regularly maintained. T: 2 agreed with this view and said, *'The equipment is not regularly maintained. The director responds our demands and calls technicians, but it takes a long time. There is a serious infrastructure problem, such as missing cables or broken plugs and these are still prevailing problems'. 'As long as no one complains, there is no maintenance. In case of a problem, the director tries to solve it*' explained T: 3. '*Technical help is provided from outside, but not much care is shown*' added T: 5. One other (T: 6) complained about the electronic boards. '*The electronic boars open late and close late which causes loss of time. This is because there isn't regular maintenance'.* T: 8 had another complaint and said, '*The director provides technical help, but the process is very slow. We can see that there isn't regular maintenance and the teachers themselves try to solve the problem'.* In this respect, most of the participants are not satisfied with the maintenance of the equipment and the technical service provided. This, naturally, demotivates the teachers who want to use equipment while teaching.

30% of the participants expressed dissatisfaction with insufficient anti-virus programs. 'We do not want to use personal USPs because there aren't anti-virus programs installed' said T: 1. 'There is a wide spread of viruses on computers and on the electronic boards. Some of the licensed programs have expired, so they should buy valid programs. At the moment, we cannot use the programs' complained T: 8. T: 9 warned saying that teachers spread viruses through their personal UPSs. These statements reflect the constraints the teachers experience because of insufficient anti-virus programs.

5. Findings and recommendations

Dimension I: Attitudes by the directors, teachers and servants towards in-class technology use

a. School directors' attitudes

The majority of the participants agreed that school directors do their best to help with in-class technology use. Some admitted the reality that the directors, from time to time, feel hopeless in providing help due to the overall inconveniences to do with the Internet power constraints in the country. Some teachers related the failure to the lack of sufficient financial conditions in which the directors are unable to solve the problems. Wayne, Shore and Liden (1997) emphasise and say that all kinds of support and extra resources increase performance in schools. To maintain such support is the responsibility of the school director. He can inform the Ministry about financial needs, demand necessary equipment or organise social activities through which he can meet some needs. Failure in these requirements can be a negative reflection for a school director. Hasselbring et al (2000), pointed out that in schools where the directors are well aware of the situation and support the staff the use of technology is very effective (Macaulay, 2009).

b. Teachers' attitudes

The majority of the participants said that many teachers did not make use of technology in class. The biggest reason they pointed out is the spread of viruses on the computers. Although, they insist that it is easy to solve the virus issue, nothing has been done to investigate the problem.

Another important issue is the rush to cover the syllabus. Because of overcrowded classrooms, the use of technology seems to be ineffective. In their study, Gur, Ozoglu and Baser (2010) supported these findings. They pointed out that with overcrowded groups and with the material in a foreign language, the worry of falling behind the syllabus hinders the teachers to use the technology in class.

c. Servants' attitudes

Some of the participants argued that the servants did not know much about the equipment and how to deal with maintenance. It was found out that because of lack of knowledge about the equipment, they were harmed a lot during maintenance. This shows the necessity for an organisational training of all the involved. As Alas and Vadi (2003) emphasise, in order to keep a lasting and radical organisational change, all the involved in that organisation should be willing to adapt new behavioural changes.

Dimension II: Teachers' views about sharing the equipment and collaboration, responsibility and supportive information

a. Participants' view about sharing the equipment and collaboration among colleagues

Nearly half of the participants agreed that teachers shared everything related to material and other equipment and worked in collaboration to reach their target. Working in collaboration and help leads to better performance and facilitates the whole procedure (Lynch, Eisenberger & Armeli, 1999). On the other hand, the other half of the participants argued that they did not share anything because their colleagues did not know much about the use of technology in class, they were in a rush to cover the syllabus, and they could not reach any material easily. Therefore, to end such inconveniences, it is recommended that the Ministry of Education—a commission—is set in advance to prepare all the necessary material and send them to schools before the season starts.

b. Participants' views about responsibility awareness among colleagues

Related to sharing the equipment, the other half of the participants argued that their colleagues left the equipment switched on even when they did not use them, they spread viruses around through their own USPs, which caused a slow-down in the whole procedure, and forgot locking the electronic boards and all these came up because of lack of feeling of responsibility. Kahn and Katz (1977) assume

that these norms as anticipated and approved by the organisation and relate them to the lack of responsibility norm in the organisation.

c. Participants' views about informative support

Half of the participants admitted receiving support from computer teachers, who did not have all the skills required. It can be said that teachers' lack information in the use of technology in class causes ambiguity and the equipment cannot be used effectively. Cure and Ozdemir (2008) found out that teachers could not put technology in use and they were not aware of the benefits of technology in class.

Dimension III: Participants' views about maintenance of the equipment

Most participants complained that the equipment was not maintained regularly. They added that many plugs were broken, cables were missing and the technicians arrived very late when needed. Can (2008) emphasises that the directors should provide the teachers the opportunity to use technology in class. Can also points out the responsibility of the Ministry of Education for informing school administrations about the importance and the use of technology in schools.

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