Information Age Qualities of Principles, Teachers and Students in Turkish Vocational High Schools: A Systemic Change View

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Abstract

This study is interested in information age qualities of principles, teachers and students in Turkish Vocational High Schools. A readiness to systemic change survey was used as the measuring tool for the information age qualities. The survey was implemented to 7 schools and there was a total participation of 29 teachers and 282 students. The data obtained from the administration of the measuring instrument was analyzed by using both descriptive and inferential statistics. Findings of the readiness survey indicated that teachers' perceptions and relationship with the principal mean scores are higher than students. When the data were analyzed using Analysis of Variance between groups (ANOVA), the results indicate that there were significant differences in how the two stakeholder groups perceives principals, teachers and students information-age quality measures.

Introduction

Turkey is a fast developing country in the edge of passing from the societal and educational needs of the industrial age to the needs of information age. The more the society and jobs rely on information and information processing, the needs of the Turkish educational system increases and changes rapidly. This is a serious situation that needs to be taken into account since societies still valuing industrial age qualities expect that jobs need manual labor. But the current information age jobs require knowledge work based on solid information age qualities and . While during the industrial age, a comfortable middle-class life was possible without much education, whereas in this age of global competition and digital technologies, considerably higher levels of education are needed to have a comfortable life. As Turkey becomes more and more close to information age, the business, societal and educational needs are getting more and more complex. The way we work, the way we learn, the way we play are becoming more and more complex every day. Even the way we socialize by using the new tools of the Internet and web technologies are becoming more complex. It is interesting that the means and solutions to handle this complexities by using technology-based tools create further complex job areas. Spiro (2006) refers to these new technologies as "Post-Gutenberg technologies" and points on the need for drastic changes in goals and means of education for the development of a different style of thinking, through "prefigurative schemas" (schemas for the development of schemas) so as to deal with this complexity.

Solutions provided in Turkish educational system to meet the needs in Industry in terms of workforce that can deal with the complexity of the workplace knowledge needs to be carried out for all times. General approach is to focus on the measurement, evaluation and placement issues. There have been changes in the way how students are measured, evaluated and placed on to educational tracks starting from elementary school and going up to post-graduate levels. Focusing on the examination is a narrow view to the problem of quality of education. The solution for the growing low educational quality crisis is hard to solve with piecemeal change. Making changes in the curriculum by increasing or decreasing class hours of some courses does not add to the solution but even creates more dramatic problems such as placement of students and teachers to the educational programs. What we need to recognize is that dramatic changes in educational needs require changes in the fundamental structure and organization of schools. Schlechty points on the need to reconsider the "rules, roles, and relationships" for the ways we use "time, talent, and technology" in schools (Schlechty, 1990). A typical example for this is the way we use time in our educational system. When the curriculum is developed or renewed we require all students to learn the same amount of content in the same amount of time. On the other hand, we know that students do not learn at the same pace.

Turkey, with a high population of young people needs to educate more and more students that can potentially deal with the knowledge requirements of the information age. In the current system students have to go through classes based on pre-determined time periods. The use of time has to be reconsidered and redesigned so it is not a typical constant of students' achievement anymore. A dramatic change as referred by Schlechty (1990) would

to redesign schools without class periods and grade levels. This type of change would also affect teachers and students qualities in learning and communication and the use of instructional technologies in the schools (Schlechty, 2002). As it is stated by Reigeluth (1999), the new structure would require fundamental shifts in structure and qualities like from standardization to customization, from control to empowerment, from compliance to initiative, and from uniformity to diversity.

Purpose of the Study

It is important to build new knowledge about how to start a successful systemic transformation process. The information age qualities investigated of the principals, teachers and students as evaluated by teachers and students will provide an initial measure of how ready Turkish vocational schools are to a dramatic systemic change. The study has two purposes. The first is to descriptively present the current information age qualities of principles, teacher, and students. The second purpose is to examine if there are statistically significant mean differences between the students and teachers in perceived information age qualities.

The research questions that guide this study are listed below:

1.   What are the perceived information age qualities of principals, students and teachers in Turkish vocational schools?

2. Are there any differences in the perceived information-age qualities between the teachers and the students?
Sub Questions: Are there any differences in perceived:
2.1 Principals information-age qualities?
2.2. Teacher Information-Age qualities?
2.3. Relationships with the principal?
2.4. Student readiness for assuming responsibility for their own learning?

Methods

To answer the research a question, a survey research was conducted in 7 vocational schools. A total of 29 Teachers and 282 students in Turkey participated to the study.

Design of the Study

This study used a survey research design, along with inferential statistics to compare readiness levels of students and teachers in vocational schools. There were one independent variable (IV) and 5 dependent variables (DVs). The DVs are divided into two groups: Information-Age Qualities and Relationships. Table 1 summarizes the characteristics of these variables.

Table 1- Identification of the Variables

TYPE OF VARIABLE	NAME	TYPE OF VALUE	TYPE OF SCALE
IV	Stakeholder Group (Teacher and Students)	Discrete	Nominal
Information Age Qualities			
DV	Principal Qualities	Continuous	Interval
DV	Teacher Qualities	Continuous	Interval
DV	Student Readiness	Continuous	Interval
Relationships			
DV	Teachers and Students with Principal	Continuous	Interval
DV	Students with Teachers	Continuous	Interval

Survey Instruments

For this study, two different versions of one measure, the Readiness Survey, were used. These versions were the (1) Readiness Survey for Teachers and the (2) Readiness Survey for Students. The surveys were adapted from an earlier version that was developed by the systemic change research group in Indiana University to be used in Decatur district Systemic change efforts guided by Richter and Reigeluth (2006). Table 2 shows the items that were included in each survey. There were minor differences among the two versions of the survey, taking into account the demographic differences between the groups. There were five dimensions in each version of the survey. The response scale for the items in each dimension was a 5-point likert scale. The dimensions were:

- Principal's Information-Age Qualities
- Teacher Information-Age Qualities
- Relationship with the Principle
- Relationship with the Teachers
- Student Readiness for Assuming Responsibility for their Own Learning

Table 2- Items Included in Different Versions of the Readiness Survey

	Teachers	Students
Principal's Qualities		
Style of leadership	✔	✔
Mindset about education	✔	✔
Willingness to try new ideas	✔	✔
Ability to inspire people through adversity	✔	✔
Teachers' Qualities		
Mindset about education	✔	✔
Experience with learner-centered instruction	✔	
Willingness to try new ideas	✔	✔
Desire for innovation	✔	✔
Relationships with Principal		
Trust	✔	✔
Respect	✔	✔
Cooperation	✔	✔
Collaboration	✔	✔
Relationships with the Teachers		
Trust		✔
Respect		✔
Cooperation		✔
Collaboration		✔
Student Readiness		
Readiness of your students to assume more responsibility for their own learning	✔	✔

Reliability: Reliability of the survey instrument is based on the internal consistency of the items. The internal reliability coefficient was obtained for each readiness dimension and for the overall survey by using the Cronbach alpha coefficient. Readiness Survey for Teachers and the Readiness Survey for Students have a high level of reliability (0.83 and 0.82 respectively).

Validity: In research studies where data are collected via surveys, validity is a big concern. In this study, the data collection instrument went through a detailed development phase. For validity concerns, the readiness surveys were adapted from an earlier version that was developed by the systemic change research group in Indiana University in Decatur Systemic change efforts of Richter and Reigeluth (2006).

Participants and Context

The participants of the study consisted of 29 teachers and 282 students responding to the surveys. It is important to point that the study had the normal limitations of a survey research in that only present results for teachers and students who chose to participate in the survey could be included. The surveys were administered during 2008-2009 school year to 7 vocational schools through the Internet. Teacher from technical branches of the 4 different vocational school types were requested to fill the surveys. The school types that were included in the study are explained below;

1. Vocational High Schools: Intends to provide the labor force in the Industry. The primary aim is not to prepare students for higher education but to join the intermediary work force. These students are offered limited number of science and math courses.

2. Anatolian Vocational High Schools: Intends the same as the vocational schools but the student chooses his/her branch at the beginning in the entry exam made for these types of schools. The students attend a 1 year prep-school to learn a foreign language (majority English, a few German and French offerings are available) before starting their 9th grade. These schools offer limited number of science and math courses.

3. Technical High Schools: Intends to provide pre-skilled students to higher education programs or as the intermediary work force to the industry. Students take the science and math course trough out their four year of school grades to have a chance in the University entry exam. At the same time the student take vocation oriented courses. The vocational courses are the same as the vocational schools students take.

4. Anatolian Technical High Schools: Is the same as the Technical schools except that the students are accepted trough the Anatolian High schools entry exam and know their department right from the beginning. The students have to attend the prep-school for one school year to learn English before passing to the 9th grade.

Teachers were contacted trough phone calls and e-mails and encouraged to participate in the study. Those who agreed to participate were requested to ask their students for participating to the study and were provided by survey web-site address. The survey taking date of the students was scheduled for date and time. Teachers were reminded to take their student to computer labs on the date of student survey dates.

Data Analysis Procedures

In order to answer the research questions of the study, two data analysis phases were conducted. The first phase was descriptive statistics, including means, and standard deviations. In this phase, the first research question was addressed.

The second phase used inferential statistics and addressed the second research questions and sub-questions. ANOVA was used to test for statistically significant differences in readiness levels between teachers and students.

Results

The results are provided separately for each research question of the study. In the first part, results on the descriptive research question are presented. Second, results on ANOVA are presented. These results present the differences in the information-age dimensions between teacher and student perceptions.

Descriptive Results

The mean scores for information-age qualities of principals, teachers and students are presented in Table 3. The response scale for the items in each dimension was a 5-point likert scale. Teachers and students evaluated the information age qualities of themselves and of others. While all of the teachers corresponded to all items in the survey, some students did prefer to not respond to some items. The mean score that is higher in comparison is underlined.

Table 3- Means of Perceived Information Age Qualities of Principals, Teachers and Students

	Teachers			Students		
	N1	*Mean 1*	*Std. Dev. 1*	*N2*	*Mean 2*	*Std. Dev. 2*
Principal's Qualities	**29**	**<u>3.72</u>**	**0.59**	**263**	**3.48**	**0.97**
Style of leadership	29	3.62	1.02	270	3.44	1.18
Mindset about education	29	3.62	0.94	275	3.68	1.16
Willingness to try new ideas	29	4.45	0.69	279	3.48	1.22
Ability to inspire people through adversity	29	3.21	0.82	275	3.32	1.25
Teachers' Qualities	**29**	**<u>3.99</u>**	**0.58**	**269**	**3.58**	**0.95**
Mindset about education	29	4.00	0.60	279	3.78	1.11
Experience with learner-centered instruction	29	3.76	0.87			
Willingness to try new ideas	29	4.24	0.64	278	3.49	1.15
Desire for innovation	29	4.21	0.68	272	3.47	1.17
Relationships with Principal	**29**	**<u>3.92</u>**	**0.82**	**276**	**3.49**	**1.20**
Trust	29	3.90	0.98	281	3.33	1.46
Respect	29	3.72	0.10	281	3.89	1.34
Cooperation	29	4.34	0.86	280	3.68	1.43
Collaboration	29	3.69	1.10	279	3.07	1.44
Relationships with the Teachers				**282**	**3.94**	**1.02**
Trust				279	3.91	1.25
Respect				279	4.13	1.12
Cooperation				282	4.00	1.13
Collaboration				244	3.67	1.26
Student Readiness Readiness of students to assume more responsibility for their own learning	**29**	**2.34**	**0.94**	**274**	**<u>4.04</u>**	**1.01**

Differences in the Perceived Information-age Qualities between Teachers and Students

The scores for the readiness dimensions common in both surveys, that is, the teachers and student versions, were compared and the results are presented below. ANOVA was run to understand if there were significant differences in the following dimensions between teacher and student perceptions:
1. Principals' information-Age qualities
2. Teacher s' Information-Age qualities
3. Relationships with the principal
4. Student readiness for assuming responsibility for their own learning

The results of the ANOVA on principles information-age qualities are presented in Table 4.

Table 4- ANOVA Results for perceived principal qualities

		df	F	Sig.
Principal's Information-age Qualities	Between Groups	1	1.765	0.185
	Within Groups	290		
	Total	291		
Principal's Leadership Style	Between Groups	1	0.624	0.430
	Within Groups	297		
	Total	298		
Principal's Mindset about Education	Between Groups	1	0.070	0.791
	Within Groups	302		
	Total	303		
Principal's Willingness to try New Ideas	Between Groups	1	17.730	0.000*
	Within Groups	306		
	Total	307		
Principal's Ability to inspire People through Adversity	Between Groups	1	0.240	0.624
	Within Groups	302		
	Total	303		

* $p<0.05$

As shown in Table 4, there is no significant difference in overall, but significant differences existed in only one of the measures between teachers and students perceptions on principals' information-age qualities. Teachers perceptions on "Principal's Willingness to try New Ideas" was significantly higher, whereas Leadership style, Mindset about Education, and Ability to inspire People through Adversity did not show any significant differences between the two stakeholder groups. The results of the ANOVA on teachers' information-age qualities are presented in Table 5.

Table 5- ANOVA Results for teachers' information-age qualities

		df	F	Sig.
Teachers' Information-age Qualities	Between Groups	1	5.094	0.025*
	Within Groups	296		
	Total	297		
Mindset about education	Between Groups	1	1.053	0.306
	Within Groups	306		
	Total	307		
Willingness to try new ideas	Between Groups	1	12.143	0.001*
	Within Groups	305		
	Total	306		
Desire for innovation	Between Groups	1	10.879	0.001*
	Within Groups	299		
	Total	300		

* $p<0.05$

As shown in Table 5, another significant finding of the study was the difference between perceived information-age qualities of the teachers'. Teachers perceived their information-age qualities significantly higher than how students perceived them. All measures about teacher information- age qualities included in the survey, except mindset about education, was perceived by the teachers significantly different than students. The results of the ANOVA on relationship with the principal are presented in Table 6.

Table 6- ANOVA Results for relationship with the principal

		df	F	Sig.
Relationship with the Principal	Between Groups	1	3.439	0.065*
	Within Groups	303		
	Total	304		
Trust in Principal	Between Groups	1	4.104	0.044*
	Within Groups	308		
	Total	309		
Respect for Principal	Between Groups	1	0.418	0.519
	Within Groups	308		
	Total	309		
Cooperation w/ Principal	Between Groups	1	6.114	0.014*
	Within Groups	307		
	Total	308		
Collaboration w/ principal	Between Groups	1	4.993	0.026*
	Within Groups	306		
	Total	307		

* $p < 0.05$

As shown in Table 6, another significant finding of the study was the difference in relationship with principal between teachers and students. According to the results, all measures of relationship except "Respect for Principal" were significantly different between the groups.

The results of the ANOVA on relationship with students' readiness for assuming responsibility for their own learning are presented in Table 7.

Table 7- ANOVA Results for students' readiness for assuming responsibility for their own learning

	df	F	Sig.
Between Groups	1	75.439	0.000*
Within Groups	301		
Total	302		

* $p < 0.05$

As shown in Table 6, ANOVA result points on significant difference on teachers and students perception on readiness of students assuming responsibility for their own learning. Although students perceive themselves ready to take responsibility teachers don't see them as individuals responsible for their own learning.

Conclusion

Some of the conclusions that can be drawn from the study's findings are as follows. According to the analysis on students' readiness for taking responsibility of their own learning, teachers do not view students as ready for the change. This might be related to the view about the child. Teachers might have a tendency to view students closer to the industrial-age view. There is a possibility that students are perceived as passive learners and as everything the school has turned them into: passive, unmotivated, lacking skills for self-directed learning. This of course, is a speculation for now and needs further empirical studies to talk with more certainty.

Students' relationship with the principal comes up to be weaker than teachers with the principal. This could be due to the organizational hierarchy. Simply stated, teachers interact with principals. and students interact with teachers. There seems to be no direct relationship between students and principal. These scores being low might also be from students viewing principals as the authority in charge of punishment. The industrial-age notion of sending students to principal for punishment might put the principal into a role that makes them naturally less friendly with the student.

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