Computer Programming Students' Attitudes in Distance Education

Mustafa Of
Kocaeli University, Kocaeli Vocational School, Kocaeli, Turkey
mustafaof@gmail.com

Kazım Kahraman
Kocaeli University, Kocaeli Vocational School, Kocaeli, Turkey
kazim_kahraman@hotmail.com

Mustafa Kudu*
Erzincan University, Science and Art Faculty, Erzincan, Turkey
mustafakd3@yahoo.com

Abstract
Distance education or distance learning is the education of students who may not always be physically present at a school or a classroom. By the period that universities add the use of distance education and training in their education systems, education researchers need to discover how to make this educational method more attractive for students.

In this research, it is examined the opinions held by students, with respect to technology and its application to education. None of the students had any experience with online coursework. Q-methodology was used to identify opinions, shared among students, on issues they considered important about the application of technology to course instruction. The result suggests that approaches on how an educational program might fine its online delivery for maximum suitability and acceptability to the broadest group of learners in vocational school education.

Keywords: Teaching, Education, distance education, computer programming program.

Introduction
The research literature dealing with student attitudes toward technology and web-based computer- distance learning is growing in last years. Zhang (1999) states that some studies report the actual uses of Internet technologies in combination with other technologies in effective distance learning (Bergen, Kingston, 1999; Neal, Ramsay, Preece, 2007 & Stubbs, Burnham, 1990). Stubbs and Burnham (1990) focused that students' attitudes toward distance education are as important a metric as students' achievements in determining the effectiveness of distance education. In this paper, the main point of the authors for distance education are that online courses and distance education provide greater flexibility and student convenience, interaction with the teachers, better grades and a more positive learning experience. Neal at al. (2007) stated that the collaborative learning environment seems to better manipulate students individually in the learning process. They explained the negative way of this learning way as reduction in face-to-face interaction, an increased time at student workload and much costs to the student.

Positive aspects of the application of technology to distance education: we can abstract the positive ways of this special educational application from the literature (Guernsey,

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**Corresponding author.*Tel: +90 544 456 2808; Fax; +90 262 349 39 97

1999; Richards and Ridley, 1999; Hiltz, 1998; Koch, 1998, Bee, 1999 & Jaffee, 2001) as bellow;

- Limitations on Interactivity: need to be with a "live person"
- Technological Problems: Students new to this way of particular technology
- Increased Workload: it takes much time to learn new software
- Lack of administrative and technical support: course resource materials
- Costs: equipment, online phone charges

Negative aspects of the application of technology to distance education: a short form of the negative aspects of the system resulted from the literature (Richards and Ridley, 1999; Koch, 1998, Bee, 1999; Jaffee, 2001; Barbrow, Jeong and Parks, 1999; Foell and Fritz, 2005 & Mastrian and Mc Gonigle, 2007) is as below;

- Limitations on Interactivity: need to be with a "live person"
- Technological Problems: Students new to a particular technology
- Increased Workload: it takes much time to learn new software
- Lack of administrative and technical support: course resource materials
- Costs: equipment, online phone charges

Methods

Fifty-one students from computer technology distance education program ofKocaeli vocational School participated voluntarily (30 males and 21 females, 58.8% and 41.2%, respectively. All students received the same Q-set developed by Valenta and Wigger (1997) having 23 statements (Appendix A). Q-methodology is used to make clear commonly shared opinions regarding a specific topic (Valenta and Wigger, 1997).The quantitative methods of Q use factor analytic data-reduction and emphasizes the subjective opinion of a population, not how many in the population share the opinion. The instructions for the Q- instrument were given to the participants to read and follow.

By-person factor analysis, Valenta and Wigger (1997) identified three opinion types (factors) that represented three different views regarding the use of distance education;

Factor 1: Time and Structure in Learning

Factor 2: Social Interaction in Learning

Factor 3: Convenience in Learning

Findings

The analyze of the identification of students' opinions based on the similarities and differences by which they sort the statements in the Q-sample is categorized. It was identified three opinion types among our participants that represented three different views regarding the use of web-based instruction.Almost all of the participants were accounted for in the three factors. Table 1 summarizes the rankings among statements for each factor, as generated by the statistical software (SPSS). The classification of participant viewpoints results from the examination of that factor's statements, after ranking ordering the statements from +3 to –3 (Valenta and Wigger, 1997). The three factors were titled: (1) Time and Structure in Learning; (2) Social Interaction in Learning; and (3) Convenience in Learning.

Table 1. Students' points for factors

Statements	Factors[*]		
	Time and Structure	Social Interaction	Convenience
1. Less sense of self-assessment in comparisons to others.	1	0	-3
2. Fewer subtleties in teaching; instructor observation, speech and immediate feedback.	-1	2	0
3. Fewer opportunities to meet new people; social interaction.	1	1	0
4. Less enrichment from other perspectives.	0	3	1

5. Less informal learning; side comments by teacher and students.	0	-1	1
6. Less discussion with participants.	0	2	0
7. Sometimes hard to find quiet time at home or school.	-3	0	-1
8. Sometimes computer time hard to get at home.	-3	-1	0
9. Provides flexible time management.	2	1	3
10. Potential interference with work obligations.	1	3	2
11. Saves travel time.	1	-1	3
12. Can work at home when I want.	3	2	2
13. Trouble getting access to Internet at home.	-3	-2	1
14. Requires basic skills in computer troubleshooting.	1	1	-1
15. Must pay home phone line costs.	-2	-3	-2
16. Access to Internet only through work.	-2	1	-3
17. No set class time.	0	0	-1
18. Requires self-discipline.	3	-3	0
19. Requires active learning and initiative.	2	-3	-1
20. You'll sure learn to use the Internet.	-1	-1	-3
21. Can learn at my own pace.	3	0	2
22. Saves commuting cost.	0	0	-2
23. Can work in your bathrobe.	-1	-2	-1

*Item rankings: -3 = most unimportant; 0 = ambivalent; +3 = most important

Time and Structure in Learning

Web-based education provides flexible time management. It is important to the students that they can work at home when they want to. According to the students, self-discipline and active learning are important. On the other hand, having access to the Internet only through work, paying home phone bills, attaining quiet computer time at home and find quiet time at home or school are unimportant subjects for our students.

Table 2. Classification of issues from the time and structure important

İmportant	
Can work at home when I want.	3
Requires self-discipline.	3
Can learn at my own pace.	3
Provides flexible time management.	2
Requires active learning and initiative.	2
No-load	
Less enrichment from other perspectives.	0
Less informal learning; side comments by teacher and students.	0
Less discussion with participants.	0
No set class time.	0
Saves commuting cost.	0
Unimportant	
Sometimes hard to find quiet time at home or school.	-3
Sometimes computer time hard to get at home.	-3
Trouble getting access to Internet at home.	-3
Must pay home phone line costs.	-2
Access to Internet only through work.	-2

The statements in the table 2 were sorted on a continuum of −3 most unimportant to +3 most important. The numbers in the right column following each statement is the factor score for that item within this viewpoint of the students.

Social Interaction in Learning

Most important to the Social Interaction group was the potential for less participant discussion and fewer subtleties in teaching. Also, the other important statements were less enrichment from other perspectives and potential interference with work.

Unimportant to this group were being able to work in their bathrobe and learning to use the Internet. They were not concerned about having trouble accessing the Internet from home, paying home phone bills, or their need to be self-disciplined in learning. For this group expressed in a neutral way to statements such as being able to learn at one's own pace and having less of a sense of self-assessment in comparison to others.

Table 3. Classification of issues from social interaction important

İmportant	
Less enrichment from other perspectives	3
Potential interference with work obligations.	3
Fewer subtleties in teaching; instructor observation, speech and immediate feedback.	2
Less discussion with participants.	2
Can work at home when I want.	2
No-load	
Less sense of self-assessment in comparisons to others.	0
Sometimes hard to find quiet time at home or school.	0
Can learn at my own pace.	0
No set class time	0
Saves commuting cost.	0
Unimportant	
Must pay home phone line costs.	-3
Requires self-discipline.	-3
Requires active learning and initiative.	-3
Trouble getting access to Internet at home.	-2
Can work in your bathrobe.	-2

The statements in the table 3 were sorted on a continuum of −3 most unimportant to +3 most important. The numbers in the right column following each statement is the factor score for that item within this viewpoint of the students.

Convenience in Learning

Most important to the Convenience group was that web-based education lets them work at home when they want to and save travel time. It provides flexible time management and learn at their own pace. Least important to this group were self-assessment in comparisons to others and access to Internet only through work. Also unimportant were issues such learning to use the Internetand paying home phone line costs. Neutral reactions were fewer subtleties in teaching as instructor observation, speech and immediate feedback, less discussion with participants, computer time hard to get at home and Requiring self-discipline.

Table 4. Classification of issues from the convenience important

İmportant	
Provides flexible time management.	3
Saves travel time.	3
Potential interference with work obligations.	2

Can work at home when I want.	2
Can learn at my own pace.	2
No-load	
Fewer subtleties in teaching; instructor observation, speech and immediate feedback.	0
Fewer opportunities to meet new people; social interaction.	0
Less discussion with participants.	0
Sometimes computer time hard to get at home.	0
Requires self-discipline.	0
Unimportant	
Less sense of self-assessment in comparisons to others.	-3
Access to Internet only through work.	-3
You'll sure learn to use the Internet.	-3
Must pay home phone line costs.	-2
Saves commuting cost.	-2

The statements in the table 4 were sorted on a continuum of −3 most unimportant to +3 most important. The numbers in the right column following each statement is the factor score for that item within this viewpoint of the students.

Results

In this study, three opinion types were identified: Students who identified with issues of Time and Structure in Learning, Social Interaction and convenience in Learning. These opinions can be used to aid educators in reaching the effectiveness of their online courses. Also, this study is qualitative and confined to Kocaeli University of a vocational high school. The three opinion types identified via this study. All three groups of students, representing the three opinion types, shared a belief in the importance of being able to work at home.

In our distance education system, the students access to course materials, discussion forums, virtual groups and chat, testing, grades, and electronic communication. There is a movement in both education and business to harness the power of the World Wide Web to disseminate information. Researchers must become invested in understanding the interactions of students and computing.

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Appendix A

Q-sample statements
1. Less sense of self-assessment in comparisons to others.
2. Fewer subtleties in teaching; instructor observation, speech and immediate feedback.
3. Fewer opportunities to meet new people; social interaction.
4. Less enrichment from other perspectives.
5. Less informal learning; side comments by teacher and students.
6. Less discussion with participants.
7. Sometimes hard to find quiet time at home or work.
8. Sometimes computer time hard to get at home.
9. Provides flexible time management.
10. Potential interference with work obligations.
11. Saves travel time.
12. Can work at home when I want.
13. Trouble getting access to Internet at home.
14. Requires basic skills in computer troubleshooting.
15. Must pay home phone line costs.
16. Access to Internet only through work.
17. No set class time.
18. Requires self-discipline.
19. Requires active learning and initiative.
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