

Full Length Research Paper

Teachers' attitude toward decision making as a subcategory of learner's control strategy

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The aim of this study was to determine the usage levels of learner's control strategy among teachers according to their field and length of service in using option of decision making covered by learner's control strategy. The participants of this research were 219 teachers teaching in Adana (Turkey) State primary schools in 2010 to 2011 education year. Data were gathered by administering learner's control strategy questionnaire (for teachers) developed by the researcher. The ANOVA results revealed no significant differences between the usage options of making decision which included using learner's control strategy, the fields of the teachers and their length of service.

Key words: Learner's control strategy, decision making, teachers' attitudes, instructional strategies.

INTRODUCTION

Human beings have the ability of thinking, which makes them superior to other living beings in nature; hence they have the ability to decide between what is right or wrong. Information or meanings do not exist independent of individuals outside the world and it is not transferred into another situation in a passive way. Each individual can use different way in considering, comprehending or commenting on the issues connected with his/her own experience (Cunnigham, 1991; Duffy and Jonassen, 1991). In addition, each individual has world view, which is based upon his/her experiences, helping him/her to interpret what is happening around. The traditional methods (especially the methods based on behaviorist approach) have been superseded by the approaches, and methods, which are centralized on learners based instructions. Learning process is not considered as a passive process rather as active in which both teachers and learners are expected to work together. In today's societies, it is vital for individuals not to have only basic knowledge and skills but also have the ability to think, interpret, analyze, evaluate and solve problems when the need arises. Teaching content of micro-level selecting, editing, moving, merging and recommendations with the same level with macro summaries has been developed for this purpose (Reigeluth and Stein, 1983). Some of the

instruction designers state that if learners make selection, teaching strategies and techniques can raise their motivation, which encourage their involvement (Williams, 1996). Learners are not passive recipients in teaching and learning environments. However, in traditional classes, learners are considered as passive recipients, which affect both the teachers' instructional approaches and learners' learning styles. Students should be free in choosing the teaching strategies and ordering the contents in the strategy of learner's control. They should also have the ability of controlling their own learning and studying (Reigeluth, 1987). In such kinds of events, decision making of learner and control of the learning process are factors. Thus, this study is aimed at examining the role of learner's control strategy since it has been pointed out by some researchers; there are still some points that need more research. This is because research parameters are too diverse to allow a generalization, which types of learners should be granted control and under what conditions (Kim, 1992). Therefore, one of the ultimate aims of this study is to know whether there is a significant difference between the fields of the teachers and the usage level of option in decision making contained in learner's control strategy, and the other is whether there is significant difference

between the length of service and the usage level of option in decision making contained in learner's control strategy.

Learner's control and decision making

Every individual has different and unique information structure resulting from the fact that every individual has his/her own information and experience. Every individual perceives, assimilates and makes construction according to his/her own memory. Learner's control strategy helps learners build the cognitive structure, which enables them to comprehend complex situations much easier through either directive or constructivist approach. According to Reigeluth (1987), learner can choose to control the elements of teaching strategy and a macro prescriptive framework for selecting, sequencing, synthesizing and summarizing the content. In addition, learner's control increase learner's performance and can also be used in some levels of teaching (Merrill, 1984). It is not important supplying learner's control strategy; rather using this strategy is more important.

Merrill (1984) categorizes level of student's control as:

1. Content control.
2. Control of pace.
3. Display (strategy) control.
4. Control of internal processing.

Learners develop an internal process triggering their own learning, so they use the meta-cognition approach they are aware of as their own cognitive structure and learning features. Learner's control includes strategy selection and using the selected strategies to fulfill the needs of learners during teaching process, which enable them to perform well. During this process the more the learners can choose, order and improve their ability, the more they control their own learning. Teaching process involves comprehending and improving teaching methods, which in turn help learners control themselves in a possible way during learning process. Learner's control has become an important strategy in computer-assisted learning and student-centered instruction, because individualism is effective for learners in instructions. Computer-assisted learning provides choosing of content, exercise, kind and speed so that individuals may control their own learning process in their own speed with the aid of computers.

Meta-cognition involves learners' awareness of their own internal process about their own success in learning process. Learner's control enables learners to determine the teaching strategies and to decide on cognitive strategies, and they can also gain appropriate strategies and skills during such a process (Merrill, 1984).

Santiago and Okey (1992) emphasized that learner's control is effective in the control of content, control of

pace, control of strategy, control of internal processing (meta-cognition), control of decision, exercise, kind, time and amount with a little or completely alternative installation of the responsibility in the scope of instructional design. In addition, learner's control is a strategy learners use to make decisions about teaching process with which they can control their own learning process (Cook, 2001).

Hypotheses

The major aim of this study is to determine the attitude of teachers on the level of using decision making contained in learner's control strategy, so that the following hypothesis can be resolved.

1. Is there any significant difference between the fields of the teachers and the usage level of option of decision making contained by learner's control strategy?
2. Is there any significant difference between the length of service and the usage level of option of decision making contained by learner's control strategy?

METHODOLOGY

A correlation research design is used in this study. Both quantitative and qualitative methods of descriptive data collection were administered. The levels of usage of the teachers' course and the length of service of the teachers in relation to option of decision making covered by learner's control strategy were studied. Frequency, percentage and one-way ANOVA results were taken into consideration in the analysis of data, using SPSS for Windows 11.5.

Instruments

Learner's control strategy questionnaire divided into seven sections (sub-scales) and consisting of twenty eight questions were used for data collection. It was developed and applied in Turkish language to the teachers by the researcher. The questionnaire was used in this study to investigate the factor analysis and for constructing related validity and reliability, the Cronbach alpha was used to test for internal consistency. According to Kaiser Meyer Olkin statistics, 0.50 to 0.70 means mid level, 0.80 to 0.90 means very good and 0.90 and above means excellent (Field, 2002). Factor analysis and Cronbach alpha were tested using the trial form of the questionnaire and Cronbach alpha was found as 0.88; Kaiser-Meyer-Olkin (KMO) measure was 0.82; Bartlett test was 1188.515. The result of Bartlett test found at 0.00 levels was meaningful.

Data collection and analysis

The researcher visiting the schools collected the data on his own for one month. Obtained data from the questionnaire were analyzed by one-way ANOVA and determined with frequency and percentage using SPSS for Windows 11.5.

Participants

The participants were 219 state primary school teachers teaching in

Adana (Turkey) State primary schools located in the center of Adana. They were chosen randomly.

The frequency and percentage values of teachers are presented in Table 1. 91 men and 128 women teachers participated in this research. In addition, 123 class teachers, 20 Turkish teachers, 20 English teachers, 16 Math teachers, 15 Science teachers, 11 Social Sciences teachers, 9 Religion and Morals teachers, 5 Computer and Technology teachers participated in this research. The number of teachers whose length of service ranged between 1 and 5 years was 22 teachers; between 6 and 10 years was 28 teachers; between 11 and 15 years was 27 teachers; between 16 and 20 years was 42 teachers; between 21 and 25 years was 41 teachers; between 26 and 30 years was 29 teachers; between 31 and 35 years was 26 teachers; 36 years and above was 4 teachers. The group whose length of service ranged between 16 and 20 years was the most crowded teacher group in this research. The work experience of the second most crowded teacher group was between 21 and 25 years. The third group was between 26 to 30 years, and the least crowded (group) was 36 years and above. The percentages of the teachers fields are: 56.2% Class teachers, 9.1% Turkish teachers, 9.1% English teachers, 7.3% Math teachers, 6.8% Science teachers, 5.0% Social sciences teachers, 4.1% Religion and Morals teacher, 2.3% computer and technology teachers. The percentages show that the most crowded teacher group was class teacher.

FINDINGS

Tables 2, 3, 4, 5, 6 and 7 show the ANOVA results of the teachers' fields according to learner's option of decision making covered by learner's control strategy. Item 3: students were asked to express their views and opinions on whether they need prerequisites of the lesson. Item 4: students were asked to express their views and opinions on whether they need examples. Item 5: students were asked to express their views and opinions on whether they need more exercises. Item 6: students were asked to express their views and opinions on whether they need a summary of the lesson. Item 7: students were asked to express their views and opinions on whether they need any repetition during presentation. Item 20: students' awareness of their learning responsibilities was examined. These items seek answers to decision making as a component of learner's control strategy. The results of factor analysis indicate that items 3, 4, 5, 6, 7 and 20 were correlated with decision making as a component of learner's control strategy.

Table 2 displays the analysis results of one-way-ANOVA related to teachers' field on item 3 (usage option of decision making covered by learner's control strategy). $F_{(7-211)} = 2.093$; significant p-value = 0.046 ($P > 0.01$). As seen, there is no significant difference between the fields of teachers and item 3 (usage option of decision making covered by learner's control strategy).

Table 3 displays the analysis results of one-way-ANOVA related to teachers' field on item 4 (usage option of decision making covered by learner's control strategy). $F_{(7-211)} = 0.280$; significant p-value = 0.961 ($P > 0.01$). There is no significant difference between the fields of

Table 1. Personal information about teachers.

Variable	Frequency	Percentage
Gender		
Man	91	41.6
Woman	128	58.4
Field of the teacher		
Class teacher	123	56.2
Turkish Teacher	20	9.1
Math Teacher	16	7.3
Science Teacher	15	6.8
Social Sciences Teacher	11	5.0
Religious and Morals Teacher	9	4.1
English Teacher	20	9.1
Computer and Tech. Teacher	5	2.3
Duty period		
1 to 5	22	10
6 to10	28	12.7
11 to15	27	12.4
16 to 20	42	19.2
21 to 25	41	18.7
26 to 30	29	13.2
31 to 35	26	10.6
36 and above	4	1.9

teachers and item 4 (usage option of decision making covered by learner's control strategy).

Table 4 displays the analysis results of one-way-ANOVA related to teachers' field on item 5 (usage option of decision making covered by learner's control strategy). $F_{(7-211)} = 1.095$; significant p-value = 0.368 ($P > 0.01$). These results display that there is no significant difference between the fields of teachers and item 5 (usage option of decision making covered by learner's control strategy).

Table 5 displays the analysis results of one-way-ANOVA related to teachers' field on item 6 (usage option of decision making covered by learner's control strategy). $F_{(7-211)} = 0.649$; significant p-value = 0.715 ($P > 0.01$). These results display that there is no significant difference between the fields of teachers and item 6 (usage option of decision making covered by learner's control strategy).

Table 6 displays the analysis results of one-way-ANOVA related to teachers' field on item 7 (usage option of decision making covered by learner's control strategy). $F_{(7-211)} = 0.974$; significant p-value = 0.451 ($P > 0.01$). These results display that there is no significant difference between the fields of teachers and item 7 (usage option of decision making covered by learner's control strategy).

Table 2. ANOVA results of the teachers' fields according to usage about option of decision making covered by learner control strategy about item 3.

Source of variance	Sum of squares	df	Mean Square	F	Sig. (P)	Significant differences
Between groups	15.623	7	2.232	2.093	0.046	-
Within groups	225.044	211	1.067			
Total	240.667	218				

Table 3. ANOVA results of the teachers' fields according to usage about option of decision making covered by learner control strategy about item 4.

Source of variance	Sum of squares	df	Mean Square	F	Sig.(P)	Significant differences
Between groups	1.737	7	0.248	0.280	0.961	-
Within groups	186.984	211	0.886			
Total	188.721	218				

Table 4. ANOVA results of the teachers' fields according to usage about option of decision making covered by learner control strategy about item 5.

Source of variance	Sum of squares	df	Mean Square	F	Sig.(P)	Significant differences
Between groups	6.765	7	0.966	1.095	0.368	-
Within groups	186.231	211	0.883			
Total	192.995	218				

Table 5. ANOVA results of the teachers' fields according to usage about option of decision making covered by learner control strategy about item 6.

Source of variance	Sum of squares	df	Mean Square	F	Sig.(P)	Significant differences
Between groups	6.170	7	0.881	0.649	0.715	-
Within groups	286.488	211	1.358			
Total	292.658	218				

Table 6. ANOVA results of the teachers' fields according to usage about option of decision making covered by learner control strategy about item 7.

Source of variance	Sum of squares	df	Mean Square	F	Sig.(P)	Significant differences
Between groups	6.698	7	0.957	0.974	0.451	-
Within groups	207.284	211	0.982			
Total	213.982	218				

Table 7. ANOVA results of the teachers' fields according to usage about option of decision making covered by learner control strategy about item 20.

Source of variance	Sum of squares	df	Mean Square	F	Sig.(P)	Significant differences
Between groups	9.528	7	1.361	1.251	0.276	-
Within groups	229.577	211	1.088			
Total	239.105	218				

Table 7 displays the analysis results of one-way-ANOVA related to teachers' field on item 20 (usage option of decision making covered by learner's control strategy). $F_{(7-211)} = 1.251$; significant p-value = 0.276 ($P > 0.01$). These results display that there is no significant difference between the fields of teachers and item 20 (usage option of decision making covered by learner's control strategy).

Tables 2, 3, 4, 5, 6 and 7 show the results of one way ANOVA testing the usage option of decision making covered by learner's control strategy according to the fields of the teacher. There are no meaningful differences between the usage option of decision making and teachers' fields. The results of one-way ANOVA display that there are no significant differences between the teachers' field and the usage option of decision making that contained learner's control strategy.

Tables 8, 9, 10, 11, 12 and 13 display ANOVA results of the teachers' length of service (working period) according to usage option of decision making covered by learner's control strategy. Item 3: students were asked to express their views and opinions on whether they need prerequisites of the lesson. Item 4: students were asked to express their views and opinions on whether they need examples. Item 5: students were asked to express their views and opinions on whether they need more exercises. Item 6: students were asked to express their views and opinions on whether they need a summary of the lesson. Item 7: students were asked to express their views and opinions on whether they need any repetition during presentation. Item 20: students' awareness of their learning responsibilities was examined. These items include option of decision making as a component of learner's control strategy. The questionnaire's result of factor analysis indicates that items 3, 4, 5, 6, 7 and 20 contained option making decision as a component of learner's control strategy.

Table 8 displays the analysis results of one-way-ANOVA related to teachers' length of service (working period) on item 3 (usage option of decision making covered by learner's control strategy). $F_{(7-211)} = 0.533$; significant p-value = 0.809 ($P > 0.01$). These results display that there is no significant difference between the teachers' length of service and item 3 (usage option of decision making covered by learner's control strategy).

Table 9 displays the analysis results of one-way-ANOVA related to teachers' length of service on item 4 (usage option of decision making covered by learner's control strategy). $F_{(7-211)} = 1.063$; significant p-value = 0.389 ($P > 0.01$). These results display that there is no significant difference between the teachers' length of service and item 4 (usage option of decision making covered by learner's control strategy).

Table 10 displays the analysis results of one-way-ANOVA related to teachers' length of service on item 5 (usage option of decision making covered by learner's

control strategy). $F_{(7-211)} = 1.458$; significant p-value = 0.184 ($P > 0.01$). These results display that there is no significant difference between the teachers' length of service and item 5 (usage option of decision making covered by learner's control strategy).

Table 11 displays the analysis results of one-way-ANOVA related to teachers' length of service on item 6 (usage option of decision making covered by learner's control strategy). $F_{(7-211)} = 0.893$; significant p-value = 0.513 ($P > 0.01$). These results display that there is no significant difference between the teachers' length of service and item 6 (usage option of decision making covered by learner's control strategy).

Table 12 displays the analysis results of one-way-ANOVA related to teachers' length of service on item 7 (usage option of making decision covered by learner's control strategy). $F_{(7-211)} = 1.071$; significant p-value = 0.383 ($P > 0.01$). These results display that there is no significant difference between the teachers' length of service and item 7 (usage option of decision making covered by learner's control strategy).

Table 13 displays the analysis results of one-way-ANOVA related to teachers' length of service on item 20 (usage option of decision making covered by learner control strategy). $F_{(7-211)} = 1.397$; significant p-value = 0.208 ($P > 0.01$). These results display that there is no significant difference between the teachers' length of service and item 20 (usage option of decision making covered by learner's control strategy).

Tables 8, 9, 10, 11, 12 and 13 show the results of one way ANOVA related to usage option of decision making covered by learner's control strategy according to teachers' length of service. There are no meaningful differences between the usage option of decision making and their length of service. The results of one-way ANOVA display that there are no significant differences between the teachers' duty period and the usage option of decision making that contained learner's control strategy.

DISCUSSION

When the responses of the teachers obtained with the help of learner's control strategy questionnaire (for teachers) were considered, the ANOVA results revealed no significant differences between the usage option of the decision making that included using learner's control strategy and the fields of the teachers and their work experience. We assume that the option of decision making component of learner's control strategy is used in the schools by the teachers. In addition, the analyzed data on using decision making subcategory of learner's control strategy revealed that teachers working in state primary schools are employing learner's control strategy in class. This implies that decision making that contained

Table 8. ANOVA results of the teachers' length of service according to usage option of making decision covered by learner control strategy about item 3.

Source of variance	Sum of squares	df	Mean Square	F	Sig.(P)	Significant differences
Between groups	4.179	7	0.597	0.533	0.809	-
Within groups	236.488	211	1.121			
Total	240.667	218				

Table 9. ANOVA results of the teachers' length of service according to usage about option of decision making covered by learner control strategy about item 4.

Source of variance	Sum of squares	df	Mean square	F	Sig.(P)	Significant differences
Between groups	6.428	7	0.918	1.063	0.389	-
Within groups	182.294	211	0.864			
Total	188.721	218				

Table 10. ANOVA results of the teachers' length of service according to usage about option of decision making covered by learner control strategy about item 5.

Source of variance	Sum of squares	df	Mean square	F	Sig.(P)	Significant differences
Between groups	8.907	7	1.272	1.458	0.184	-
Within groups	184.088	211	0.872			
Total	192.995	218				

Table 11. ANOVA results of the teachers' length of service according to usage about option of decision making covered by learner control strategy about item 6.

Source of variance	Sum of squares	df	Mean Square	F	Sig.(P)	Significant differences
Between groups	8.421	7	1.203	0.893	0.513	-
Within groups	284.236	211	1.347			
Total	292.658	218				

Table 12. ANOVA results of the teachers' length of service according to usage about option of decision making covered by learner control strategy about item 7.

Source of variance	Sum of squares	df	Mean Square	F	Sig.(P)	Significant differences
Between groups	7.342	7	1.049	1.071	0.383	-
Within groups	206.640	211	0.979			
Total	213.982	218				

Table 13. ANOVA results of the teachers' length of service according to usage about option of decision making covered by learner control strategy about item 20.

Source of variance	Sum of squares	df	Mean square	F	Sig.(P)	Significant differences
Between groups	10.588	7	1.513	1.397	0.208	-
Within groups	228.517	211	1.083			
Total	239.105	218				

Learner Control Strategy is a common strategy used by the teachers in learning and teaching process. In addition, teachers seem to be generally sharing several similar beliefs about using learner's control strategy in their courses. There is a great amount of research on learner's control strategy. In Rubincam and Oliver's (1985) research, students were given eight topics and were allowed to control the sequences of objectives within each topic and to decide whether to be instructed before the test or to be given the test without instruction. Students using strategies consistently performed better than those who did not use these strategies. Carrier and Williams (1988) stated that if learners could monitor their current state of knowledge adequately, they are likely to make better use of instructional options provided to them. In addition, Hannafin (1984) and Merrill (1984) stressed the importance of effective learner's strategies used under learner's control. Goetzfried and Hannafin (1985) examined the effects of learner's control in a computer-assisted instruction lesson for learning mathematics rules with three conditions: adaptive control, learner control with advisement treatment and linear control. They studied forty-seven seventh graders in a remedial class.

Furthermore, Klein and Keller (1990) studied ability and learner's control using the instructional program that included advertising concept designed by Carrier et al. (1984). They found that scores on a test of mental ability determined 42% of the variance on the increase in achievement from pretest to posttest. This corresponds with the other researchers who have suggested that learner's control would be a greater benefit to learners with higher levels of prior knowledge or ability (Hannafin, 1984; Lawless and Brown, 1997; Merrill, 1983; Williams, 1996).

Conclusion

The results of ANOVA revealed no significant differences between the usage option of decision making that included using learner's control strategy, the fields of the teachers and their work experience. In addition, the responses to the using of decision making subcategory of learner control strategy indicated that teachers who work at state primary schools were favoring the learner's control strategy in class. We assume that teachers consider the option of decision making subcategory of learner's control strategy as a beneficial strategy for learning and teaching process since they seemed to be sharing common beliefs about using learner's control strategy in their courses.

RECOMMENDATIONS

The results first imply that students should decide on the duration of the lesson since they can get bored or be-

come inattentive. During that time, teacher may recall students attention telling an anecdote or a story about his/her experience. The other implication is that learners should have the chance to choose the course they wish to attend. In the event of such chance, students can take courses they are interested in. It is important that students make decisions about which course they take and teachers should determine the deadline of project and performance of assignment as well as determining a topic, a unit or a part of the unit during the lesson. In addition, students are provided with guidance counseling. Learners should also make decisions about their own learning process. Learners should be active at the lesson, which should be encouraged with differentiated activities. When learners take responsibility in their own learning process, learning becomes easier, more enjoyable and faster. Lastly, individual differences of learners, their prior knowledge and ability should not be ignored in teaching and learning preferences.

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