Full Length Research Paper

Perceptions of education faculty students on teaching methods and materials

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Individual differences have an influence on a wide range of education fields. These differences can range from organizing teaching environments to the techniques and strategies that the teacher uses. This study focused on individual differences of pre-service teachers and aimed to investigate the perceptions of Education Faculty students on teaching methods and education materials. A descriptive method was utilized for the study. The participants were 691 female and 364 male students from seven different departments of the education faculty. Personal information forms were used to collect data. Teaching method and teaching material preference questionnaires were used to determine the preferences of teaching methods and materials. According to pre-service teachers, the most effective teaching methods are case studies and discussions, and the most effective teaching materials are film demonstrations; however, models, schemas and graphics are also effective. As a result of this study, lecturing, question and answers, group work, individual work, inductive, discussion, case study, problem-solving and presentation methods show significant differences at a 0.01 level, while the points based on schemas, graphics, film demonstrations, computer software (CD-VCD), PowerPoint presentations and over-head projector show significant differences at a 0.01 level. Conversely, books and written materials show significant differences at a 0.05 level.

Key words: Teacher training, teaching methods, teaching materials.

INTRODUCTION

Recently, the field of education has aimed to make a breakthrough not only in people's behavior but also in their perception and ways of thinking. Education provides people with learning environments that makes their own potential emerge and enables them to shape their way during the learning process. Individual differences have an influence on a wide range of education fields, from organizing teaching environments to the techniques and strategies that the teacher would use (Esmer, 2013). Furthermore, the fact that people prefer different ways of learning demonstrates the variety of the human brain and that each brain has a unique structure.

Teachers are currently expected to create learning environments suitable for the individual differences

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mentioned above. This competency, which is expected from the teachers in Turkey, is mentioned under the "Personal and Professional Values" section (regardless of the subject area) in the publication, *General Competencies of Teaching Profession*, prepared by the Ministry of Education (2004). It is especially stated no matter what department the teacher is- under the name of "Individual and Professional Values" (MEB, 2008).

Teachers are a key component in the education system. At this point, their expectations and beliefs have an impact on students' behaviors and, accordingly, on concentration, attitudes and success (Ekici, 2006). When the teacher explores the differences in their own preferences and ways of thinking, it raises awareness of the learning preferences of students. On the other hand, pre-service teacher-education processes aim at enabling teacher candidates to attend to these processes with the skills of a good teacher (Erdem, 2008). In other words, to train qualified teachers, it is highly important to actively include pre-service teachers in teaching processes.

In order for the pre-service teachers to actively participate in teaching processes, proper learning environments should be provided. To achieve this, it should be considered that pre-service teachers may prefer different learning methods and materials. However, studies on learning styles (the individual's preference as to how she/he would learn the information; Zhang & Sternberg, 2006), cognitive styles (the way individuals acquire, process, remember and utilize the information; Kagan and Messick, 1976) and thinking styles (the way individuals prefer to achieve a given task; Sternberg, 2009) have supported this view. In other words, many studies conducted with pre-service teachers have shown that their styles vary and this difference is observed according to gender (Sternberg, 1997; Zhang and Sachs, 1997; Zhang, 2004; Wu and Zhang, 1999; Cilliers and Sternberg, 2001; Buluş, 2005; Dinçer and Saracaloğlu, 2011; Esmer, 2013), academic discipline (Zhang and Sach, 1997; Mert, 2003; Sünbül, 2004; Buluş, 2005; Emir, 2011; Esmer, 2013) and grade level (Zhang and Sachs, 1997; Buluş, 2006; Dinçer, 2009; Dinçer and Saracaloğlu, 2011).

When style is regarded as the way individuals process information and achieve tasks (Zhang and Sternberg, 2005, 2006), it is considered as being associated with individual differences. Each individual has a unique reasoning. For instance, when reading a book, the individual's mind is full of impressions about it. While summarizing the book, the person reasons and transfers the information; as a result, we have some ideas about the book and the person's reasoning (Allport, 1937). At this point, reasoning is the result of processing the information. However, the fact that individuals prefer methods of carrying out the task shows that they have different mental processes and ways of thinking, learning, problem-solving and decision-making (Esmer, 2013). It is

assumed that, in order to train qualified teachers, these differences should also be taken into account in the preferences of teaching methods and education materials within teacher training programs. Consequently, the aim of the present study is to investigate the preferences of pre-service teachers on teaching methods and materials, and to answer these questions: (1) What are the preferences of pre-service teachers on teaching methods and education materials suitable for their own learning? (2) Do pre-service teachers' preferences of teaching methods and education materials differ according to their departments, grade level and gender?

It is thought that this will contribute to the organization of pre-service education settings and therefore to the enhancement of functionality in education.

METHODS

Research model

Since the present study aims to investigate perceptions of education faculty students on teaching methods and materials in terms of its conformity with their own learning, a descriptive method was utilized.

Sample of the study

In the present study, 691 female, 364 male students and 2 students who did not specify their gender were chosen randomly (total sample size of 1057) from freshman, sophomore and junior years in seven different departments, including primary school, science, mathematics, religion culture and moral education, foreign language, social sciences and music teaching.

Research instruments

The research data consisted of personal information forms and Likert-type questionnaires in order to determine the preferences of teaching methods and materials.

Personal information form

The personal information forms included three questions to identify the department, grade level and gender of the participants.

Teaching methods preference questionnaires

A 5-point Likert-type questionnaire (1 = absolutely inappropriate to 5 = absolutely appropriate), consisting of eight items, was utilized for determining the preferences for education faculty students towards teaching methods.

Teaching materials preference questionnaires

A 5-point Likert-type questionnaire (1 = absolutely inappropriate to

Table 1. Findings of normal distribution.

S/N		Skewness	Kurtosis
1.	Lecturing	−.207	−.578
2.	Question–Answer	−.715	.431
3.	Group Work	−.393	−.386
4.	Individual Work	−.739	.117
5.	Deductive Method	−.256	−.374
6.	Inductive Method	−.401	−.361
7.	Brainstorming	−.686	.039
8.	Discussion	−.881	.182
9.	Case Study	−1.257	1.750
10.	Project Method	−.574	−.301
11.	Problem-Solving	−.833	.416
12.	Presentation	−.453	−.605
13.	Drama—Role Play	−.708	−.205
14.	Demonstration	−.746	−.064
15.	Cooperative Learning	−.540	−.289
16.	Research Method	−1.030	.609
17.	Books and Written Materials	−.466	−.617
18.	Illustrations	−.989	1.085
19.	Schemas and Graphics	−.796	.352
20.	Models	−.715	.224
21.	Film demonstrations	−1.191	1.353
22.	Computer Software—CD-VCD	−.519	−.433
23.	PowerPoint	−.453	−.558
24.	Over-head Projector	−.310	−.675

5 = absolutely appropriate), consisting of eight items, was utilized for determining the preferences of education faculty students towards teaching materials.

Data collection and analysis

Using the personal information form, teaching method preference and teaching material preference questionnaires was developed by researchers, the study was conducted with 1057 education faculty students. In the process of questionnaire development, the opinions of 12 experts in the educational sciences field were taken. In order to determine the clarity of the questions, a pilot study was conducted with ten pre-service teachers and necessary adjustments were made according to their opinions.

A normality test was first conducted for data analysis; and skewness and kurtosis values of data were calculated. According to Tabachnick and Fidell (2013), the acceptable range of skewness and kurtosis values for normal distribution of data is between +1.5 and −1.5, while according to George and Mallert (2010), it is between +2 and −2. Therefore, it can be accepted that data collected for the study show normal distribution as seen Table 1.

Descriptive statistics techniques were utilized for analyzing the data and independent samples t-tests were used for analyzing the differences of teaching method and material preference according to gender. One-way ANOVA was used to investigate the differences of teaching method and material preference in terms of grade level and department.

FINDINGS

Tables 2 and 3 indicate the evaluations of education faculty students from different departments on teaching method and materials suitable for their own learning.

As a result, case study (x = 4.31) and discussion method (x = 4.02) were regarded as the most effective methods by pre-service teachers. However, group work, deductive and lecturing methods were considered as the least effective methods.

Tables 4 and 5 indicate the evaluations of education faculty students from different departments on teaching methods and materials suitable for their own learning. As a result, film demonstrations (x = 4.31) was regarded as the most effective material, followed by models, (x = 4.04), schemas and graphics (x = 4.01) and illustrations (x = 4.00). Over-head projector (x = 3.35), books and written materials (x = 3.53), PowerPoint demonstration (x = 3.64) and computer software (x = 3.83) had values below 4 points and were found to be less effective materials.

Table 6 indicates differences in perceptions of students on teaching methods suitable for their own learning in terms of their department. As a result, lecturing, question-

Table 2. Descriptive statistics of students' perceptions on teaching methods suitable for their own learning.

Teaching method and techniques	n	Min	Max	X	ss
Case Study	1054	1	5	4.31	0.822
Discussion	1055	1	5	4.02	0.989
Research Method	1054	1	5	3.97	1.067
Problem-Solving	1055	1	5	3.91	0.987
Demonstration	1055	1	5	3.90	1.052
Brainstorming	1055	1	5	3.88	0.99
Drama—Role Play	1055	1	5	3.83	1.097
Individual Work	1055	1	5	3.82	1.012
Question-Answer	1055	1	5	3.70	0.951
Project Method	1055	1	5	3.69	1.102
Inductive Method	1055	1	5	3.67	0.991
Presentation	1055	1	5	3.57	1.159
Cooperative Learning	1055	1	5	3.57	1.117
Group Work	1055	1	5	3.44	1.055
Deductive Method	1055	1	5	3.38	1.026
Lecturing	1055	1	5	3.23	1.048

answer, group work, individual work, inductive, discussion, case study, problem-solving and presentation methods have shown significant differences at 0.01 level according to the students' departments. Deductive, drama, demonstration and cooperative learning methods have shown significant differences at the 0.05 level according to students' departments. However, brainstorming, project and research methods have shown no significant differences.

The results from LSD analysis concerning source of variants have been summarized below. All the students evaluated lecturing method at below 4.00 points on average. It has been seen that the lowest point has been awarded by primary school teaching students. Although, all students evaluated question-answer method below 4.00 points on average, significant differences were found among all the departments. All the students evaluated group work method to be below 4.00 points. The least points were awarded by mathematics teaching students. Individual work method gained the highest points from science and music teaching students, whereas other students evaluated it to be below 4.00 points on the average.

All the students have deductive method to be below 4.00 points on the average. It was shown that the lowest points were awarded by primary school and mathematics teaching students. All the students evaluated inductive method to be below 4.00 points on the average. The lowest points were awarded by primary school and social studies teaching students. However, discussion method is one of the methods considered to be the most positive. Most of the departments evaluated it to be over 4.00 points on the average. The highest points were awarded by English teaching students whereas the lowest points were awarded by mathematics teaching students. Case study method was also considered as quite a positive method. The average of points awarded by all the students is over 4.00 points. In other words, case study method was evaluated as the most effective method. The highest points were awarded by English, music, and religion culture and moral education teaching students. Science and mathematics teaching students awarded the highest point to problem-solving, whereas the average points awarded by all other students were below 4.00.

All the students evaluated presentation method to be below 4.00 points on the average. English and social studies teaching students, in general, have reported average higher points than other students. Points awarded to drama were, in general, below 4.00 points on the average. The lowest point was by religion culture and moral education teaching students. The highest point for presentation method was awarded by music and primary school teaching students. However, the lowest point has been given by mathematics teaching students. All students evaluated cooperative learning to be below 4.00 points on the average. The lowest point was awarded by mathematics teaching students. The highest point for research method, however, was reported by music, religion culture and social studies teaching students. The lowest point was awarded by English teaching students. The points for brainstorming and project methods are below 4.00 points on the average within all departments. Furthermore, the preference level of both methods showed no significant difference according to department. Table 7 indicates differences in perceptions of students on teaching materials suitable for their own learning in

Table 3. Perceptions of students on teaching methods suitable for their own learning.

Variables		Absolutely inappropriate	Slightly appropriate	Appropriate	Strongly appropriate	Absolutely appropriate	Missing	Total
Case study	f	9	27	109	397	512	3	1057
	%	0.90	2.60	10.30	37.60	48.40	0.30	100.00
Discussion	f	16	79	173	389	398	2	1057
	%	1.50	7.50	16.40	36.80	37.70	0.20	100.00
Research Method	f	45	53	187	373	396	3	1057
	%	4.30	5.00	17.70	35.30	37.50	0.30	100.00
Problem-solving	f	28	57	223	416	331	2	1057
	%	2.60	5.40	21.10	39.40	31.30	0.20	100.00
Demonstration	f	30	72	243	335	375	2	1057
	%	2.80	6.80	23.00	31.70	35.50	0.20	100.00
Brainstorming	f	23	67	251	390	324	2	1057
	%	2.20	6.30	23.70	36.90	30.70	0.20	100.00
Drama—Role Play	f	39	86	247	326	357	2	1057
	%	3.70	8.10	23.40	30.80	33.80	0.20	100.00
Individual Work	f	29	83	226	424	293	2	1057
	%	2.70	7.90	21.40	40.10	27.70	0.20	100.00
Question- Answer	f	32	75	266	487	195	2	1057
	%	3.00	7.10	25.20	46.10	18.40	0.20	100.00
Project Method	f	48	93	290	335	289	2	1057
	%	4.50	8.80	27.40	31.70	27.30	0.20	100.00
Inductive Method	f	21	105	311	386	232	2	1057
	%	2.00	9.90	29.40	36.50	21.90	0.20	100.00
Presentation	f	59	129	290	304	273	2	1057
	%	5.60	12.20	27.40	28.80	25.80	0.20	100.00
Cooperative Learning	f	64	96	308	347	240	2	1057
	%	6.10	9.10	29.10	32.80	22.70	0.20	100.00
Group work	f	50	142	321	377	165	2	1057
	%	4.70	13.40	30.40	35.70	15.60	0.20	100.00
Deductive Method	f	45	144	379	336	151	2	1057
	%	4.30	13.60	35.90	31.80	14.30	0.20	100.00
Lecturing	f	57	204	342	342	110	2	1057
	%	5.40	19.30	32.40	32.40	10.40	0.20	100.00

terms of their departments. As a result, the points concerning schema and graphics, film demonstrations, computer software (CD-DVD), PowerPoint and over-head projector have shown significant difference at 0.01, whereas books and written materials showed significant difference at 0.05. The points concerning illustrations and

Table 4. Descriptive statistic of students' perceptions on teaching materials suitable for their own learning.

Teaching materials	n	Min	Max	x	ss
Film Demonstrations	1055	1	5	4.31	0.814
Models	1055	1	5	4.04	0.883
Schema and Graphics	1055	1	5	4.01	0.894
Illustrations	1055	1	5	4.00	0.906
Computer Software—CD-VCD	1055	1	5	3.83	0.997
PowerPoint	1055	1	5	3.64	1.096
Books and Written Materials	1055	1	5	3.53	1.088
Over-head Projector	1055	1	5	3.35	1.164

Table 5. Perceptions of students on teaching materials suitable for their own learning.

Variables		Absolutely inappropriate	Slightly appropriate	Appropriate	Strongly appropriate	Absolutely appropriate	Neutral	Total
Film demonstrations	f	6	29	113	389	518	2	1057
	%	0.60	2.70	10.70	36.80	49.00	0.20	100.00
Models	f	10	36	221	420	368	2	1057
	%	0.90	3.40	20.90	39.70	34.80	0.20	100.00
Schema and Graphics	f	9	62	178	470	336	2	1057
	%	0.90	5.90	16.80	44.50	31.80	0.20	100.00
Illustrations	f	20	48	167	493	327	2	1057
	%	1.90	4.50	15.80	46.60	30.90	0.20	100.00
Computer Software—CD-VCD	f	14	94	262	371	314	2	1057
	%	1.30	8.90	24.80	35.10	29.70	0.20	100.00
PowerPoint	f	37	130	279	338	271	2	1057
	%	3.50	12.30	26.40	32.00	25.60	0.20	100.00
Books and Written Materials	f	38	180	216	422	199	2	1057
	%	3.60	17.00	20.40	39.90	18.80	0.20	100.00
Over-head Projector	f	82	158	316	309	190	2	1057
	%	7.80	14.90	29.90	29.20	18.00	0.20	100.00

models have shown no significant difference according to the students' departments.

The results from LSD analysis concerning source of variants have been summarized below. The average points awarded to books and written materials are below 4.00 points. The lowest points were awarded by English and primary school teaching students. The ones who have the most positive opinions on schema and graphics are science, social studies and primary school teaching students; the ones who have the most negative opinions are religion culture and English teaching students. Film demonstrations had over 4.00 points within all the departments; accordingly, it is assumed that film demonstrations are one of the most preferred teaching materials. Among the departments, music and social studies teaching students garnered the most positive opinions. Generally, the fact that film demonstrations are regarded as a positive material is an expected result. Music and social studies teaching students had the most positive opinions on computer software, however, all other departments evaluated is below 4.00 points. As is considered that students are very interested in computers,

Table 6. Perceptions of students on teaching methods suitable for their own learning according to their   departments.

Methods	Departments	n	x	ss	F	p	Resource of variants
Lecturing	Primary School Teaching	257	2.91	1.070	7.089	0.000	*Among Primary School and Science, Mathematics, Religion Culture, Music, Social Studies, English *Between Mathematics and Music *Among Music and Social Studies, English
	Science	126	3.37	1.009			
	Mathematics	125	3.21	0.970			
	Religion Culture	163	3.36	0.880			
	Music	103	3.59	0.954			
	Social Studies	150	3.28	1.094			
	English	130	3.26	1.178			
	Total	1054	3.23	1.048			
Question-Answer	Primary School Teaching	257	3.56	1.014	6.610	0.00	*Among Primary School Teaching and Science, Religion Culture, Music, Social Studies *Among Science and Mathematics, English *Among Mathematics and Religion Culture, Music, Social Studies, English *Between Religion Culture and English *Between Music and English
	Science	126	3.89	0.896			
	Mathematics	125	3.37	1.020			
	Religion Culture	163	3.85	0.848			
	Music	103	3.93	0.757			
	Social Studies	150	3.80	0.927			
	English	130	3.62	0.976			
	Total	1054	3.70	0.951			
Group work	Primary School Teaching	257	3.33	1.058	4.825	0.000	* Between Primary School Teaching and Music *Between Science and Music *Between Mathematics and Music *Between Religion Culture and Music *Among Music and Social Studies, English, Music
	Science	126	3.33	1.095			
	Mathematics	125	3.28	0.997			
	Religion Culture	163	3.43	1.048			
	Music	103	3.90	0.823			
	Social Studies	150	3.47	1.139			
	English	130	3.55	1.050			
	Total	1054	3.44	1.056			
Individual Work	Primary School Teaching	257	3.75	1.026	3.596	0.002	*Between Primary School Teaching and Music *Among Science and Mathematics, Social Studies, English *Between Music and English
	Science	126	4.09	0.912			
	Mathematics	125	3.76	0.902			
	Religion Culture	163	3.88	1.021			
	Music	103	4.00	0.950			
	Social Studies	150	3.80	1.003			
	English	130	3.58	1.153			
	Total	1054	3.82	1.012			
Deductive Method	Primary School Teaching	257	3.25	0.964	2.591	0.017	*Among Primary School Teaching and Science, Social Studies *Among Science and Mathematics, Religion Culture
	Science	126	3.62	0.995			
	Mathematics	125	3.29	0.914			
	Religion Culture	163	3.33	1.083			
	Music	103	3.47	0.927			
	Social Studies	150	3.51	1.060			
	English	130	3.37	1.189			
	Total	1054	3.38	1.026			
Inductive Method	Primary School Teaching	257	3.49	0.985	2.868	.009	*Among Primary School Teaching and Science, Religion Culture, Music, English *Between Science and Social Studies
	Science	126	3.90	1.003			
	Mathematics	125	3.67	0.914			
	Religion Culture	163	3.71	0.986			

Table 6. Cont'd.

	Music	103	3.78	0.885			
	Social Studies	150	3.62	1.014			
	English	130	3.70	1.076			
	Total	1054	3.67	0.991			
Brainstorming	Primary School Teaching	257	3.89	0.926	0.519	0.794	
	Science	126	3.84	1.091			
	Mathematics	125	3.82	0.970			
	Religion Culture	163	3.94	0.914			
	Music	103	3.79	1.160			
	Social Studies	150	3.87	0.981			
	English	130	3.96	0.999			
	Total	1054	3.88	0.991			
Discussion	Primary School Teaching	257	4.02	.964	4.810	0.000	*Between Primary School Teaching and Mathematics
	Science	126	3.83	1.174			*Among Science and Religion Culture, Social Studies, English
	Mathematics	125	3.70	1.078			*Among Mathematics and Religion Culture, Music, Social Studies, English
	Religion Culture	163	4.18	0.818			
	Music	103	3.99	0.965			
	Social Studies	150	4.11	0.938			
	English	130	4.21	0.938			
	Total	1054	4.02	0.989			
Case Study	Primary School Teaching	256	4.35	.783	4.299	0.000	*Among Primary School Teaching and Science, Mathematics
	Science	126	4.04	1.054			*Among Science and Religion Culture, Music, Social Studies, English
	Mathematics	125	4.16	.745			*Among Mathematics and Religion Culture, Music, English
	Religion Culture	163	4.40	.759			
	Music	103	4.42	.846			
	Social Studies	150	4.29	.805			
	English	130	4.43	.715			
	Total	1053	4.31	.821			
Project Method	Primary School Teaching	257	3.57	1.095	1.795	0.097	*Among Primary School Teaching and Religion Culture, Music
	Science	126	3.64	1.196			*Between Mathematics and Religion Culture
	Mathematics	125	3.57	1.042			
	Religion Culture	163	3.83	1.032			
	Music	103	3.83	1.086			
	Social Studies	150	3.79	1.027			
	English	130	3.66	1.230			
	Total	1054	3.69	1.102			
Problem-solving	Primary School Teaching	257	3.87	0.955	3.073	0.005	*Among Primary School Teaching and Science, Mathematics
	Science	126	4.14	0.969			*Among Science and Music, Social Studies, English
	Mathematics	125	4.12	0.848			*Among Mathematics and Music, Social Studies, English
	Religion Culture	163	3.93	0.985			
	Music	103	3.83	1.043			
	Social Studies	150	3.76	1.008			
	English	130	3.83	1.072			
	Total	1054	3.92	0.987			

Table 6. Cont'd.

Presentation	Primary School Teaching	257	3.58	1.153	3.558	.002	*Between Primary School Teaching and English
	Science	126	3.42	1.105			*Among Science and Social Studies, English
	Mathematics	125	3.39	1.039			*Among Mathematics and Social Studies, English
	Religion Culture	163	3.42	1.181			*Among Religion Culture and Social Studies, English
	Music	103	3.53	1.327			*Between Music and English
	Social Studies	150	3.74	1.102			
	English	130	3.89	1.163			
	Total	1054	3.57	1.160			
Drama–Role Play	Primary School Teaching	257	3.96	1.064	2.747	.012	*Among Primary School Teaching and Science, Mathematics, Religion Culture
	Science	126	3.62	1.151			*Among Science and Music, Social Studies, English
	Mathematics	125	3.63	1.067			*Among Mathematics and Music, English
	Religion Culture	163	3.74	1.121			
	Music	103	3.94	1.056			
	Social Studies	150	3.89	1.000			
	English	130	3.94	1.199			
	Total	1054	3.83	1.097			
Demonstration	Primary School Teaching	257	4.00	1.021	2.182	0.042	*Between Primary School Teaching and Mathematics
	Science	126	3.81	1.122			*Between Science and Music
	Mathematics	125	3.72	1.075			*Among Mathematics and Music, Social Studies
	Religion Culture	163	3.83	1.067			*Between Music and English
	Music	103	4.09	1.156			
	Social Studies	150	3.99	0.930			
	English	130	3.82	1.018			
	Total	1054	3.90	1.052			
Cooperative Leaning	Primary School Teaching	257	3.49	0.993	2.359	0.029	*Between Primary School Teaching and Music
	Science	126	3.48	1.269			*Between Science and Music
	Mathematics	125	3.43	0.970			*Between Mathematics and Music
	Religion Culture	163	3.52	1.135			*Between Religion Culture and Music
	Music	103	3.84	1.100			
	Social Studies	150	3.69	1.147			
	English	130	3.68	1.239			
	Total	1054	3.57	1.117			
Research Method	Primary School Teaching	257	3.94	1.029	1.726	0.112	*Between Religion Culture and English
	Science	126	3.99	1.062			*Between Music and English
	Mathematics	125	3.92	0.955			
	Religion Culture	162	4.10	0.941			
	Music	103	4.12	1.231			
	Social Studies	150	4.00	1.036			
	English	130	3.75	1.258			
	Total	1053	3.97	1.067			

this result may be regarded as remarkable.

Music and social studies teaching students awarded the highest points for PowerPoint demonstrations, but the average points from other departments was below 4.00 points. This result shows consistency with the results for computer software. It is understood that music and social studies teaching students are more interested in computer-based programs and software. Music teaching

Table 7. Perceptions of students on teaching materials suitable for their own learning according to their departments.

Methods	Departments	n	x	ss	F	p	Source of variants
Books and Written Materials	Primary School Teaching	257	3.39	1.066	2.644	0.015	*Among Primary School Teaching and Music. Social Studies *Between Science and Music *Between Religion Culture and English *Between Music and English *Between Social Studies and English
	Science	126	3.69	1.113			
	Mathematics	125	3.58	1.010			
	Religion Culture	163	3.58	0.967			
	Music	103	3.69	1.020			
	Social Studies	150	3.64	1.101			
	English	130	3.33	1.302			
	Total	1054	3.54	1.089			
Illustrations	Primary School Teaching	257	4.07	.775	1.589	0.147	*Between Primary School Teaching and Mathematics *Between Mathematics and Social Studies
	Science	126	4.02	0.942			
	Mathematics	125	3.82	0.853			
	Religion Culture	163	4.02	0.850			
	Music	103	3.96	1.066			
	Social Studies	150	4.11	0.973			
	English	130	3.93	0.998			
	Total	1054	4.00	0.906			
Schema and Graphics	Primary School Teaching	257	4.02	0.815	3.581	0.002	*Between Primary School Teaching and Science *Among Science and Mathematics. Religion Culture. Music. English *Between Religion Culture and Social Studies *Between Social Studies and English
	Science	126	4.23	0.841			
	Mathematics	125	3.99	0.746			
	Religion Culture	163	3.85	0.985			
	Music	103	3.94	1.092			
	Social Studies	150	4.16	0.852			
	English	130	3.87	0.927			
	Total	1054	4.01	0.894			
Models	Primary School Teaching	257	4.05	.823	1.434	0.198	*Between Mathematics and Music
	Science	126	4.13	0.898			
	Mathematics	125	3.92	0.809			
	Religion Culture	163	3.97	0.878			
	Music	103	4.17	0.984			
	Social Studies	150	4.11	0.876			
	English	130	3.98	0.964			
	Total	1054	4.04	0.882			
Film demonstrations	Primary School Teaching	257	4.33	0.753	3.936	0.001	*Between Primary School Teaching and Mathematics *Among Science and Music. Social Studies *Among Mathematics and Religion Culture. Music. Social Studies. English
	Science	126	4.21	0.900			
	Mathematics	125	4.04	0.807			
	Religion Culture	163	4.32	0.887			
	Music	103	4.46	0.838			
	Social Studies	150	4.43	0.781			
	English	130	4.37	0.706			
	Total	1054	4.31	0.813			
Computer Software— CD-VCD	Primary School Teaching	257	3.68	1.053	7.817	0.000	*Among Primary School Teaching and Music. Social Studies *Among Science and Music. Social Studies *Among Mathematics Music. Social
	Science	126	3.73	0.983			
	Mathematics	125	3.60	0.889			
	Religion Culture	163	3.77	0.983			

Table 7. Cont'd.

	Music	103	4.27	0.842			Studies and English
	Social Studies	150	4.09	0.944			*Among Religion Culture and Music. Social Studies and English
	English	130	3.88	1.034			*Between Music and English
	Total	1054	3.83	0.997			
PowerPoint Demonstration	Primary School Teaching	257	3.49	1.068	11.042	0.000	*Among Primary School Teaching and Science. Music. Social Studies. English
	Science	126	3.23	1.140			*Among Science and Religion Culture. Music. Social Studies. English
	Mathematics	125	3.45	1.012			*Between Mathematics and Music. Social Studies. English
	Religion Culture	163	3.64	1.052			*Among Religion Culture and Music. Social Studies
	Music	103	4.08	1.073			*Between Music and English
	Social Studies	150	4.03	0.958			*Between Social Studies and English
	English	130	3.72	1.168			
	Total	1054	3.64	1.097			
Over-head Projector	Primary School Teaching	257	2.98	1.202	12.633	0.000	*Among Primary School Teaching and Science. Mathematics. Religion Culture. Music. Social Studies
	Science	126	3.37	1.171			*Between Science and Music
	Mathematics	125	3.26	0.999			*Among Mathematics and Music. Social Studies
	Religion Culture	163	3.43	1.111			*Between Religion Culture and Music
	Music	103	4.03	0.880			*Among Music and Social Studies. English
	Social Studies	150	3.60	1.135			*Between Social Studies and English
	English	130	3.20	1.229			
	Total	1054	3.35	1.164			

is the only department evaluated to be over-head projector of over 4.00 points on average; all other departments had below 4.00 points. As it is considered that the music department is more practice-based, this result is remarkable. However, the lowest points were awarded by primary school teaching students.

In light of these findings, it is, however, noted here that one of the department which shows the most significant difference is primary school teaching. If 4.00 points is taken as criteria, it was seen that primary school teaching students mostly prefer illustrations, schema and graphics, models and film demonstrations; Science teaching students mostly prefer illustrations, schema and graphics, models and film demonstrations; Mathematics teaching students mostly prefer film demonstrations; Religion Culture mostly prefer illustrations and film demonstrations; Music teaching students mostly prefer models, film demonstrations, computer software, PowerPoint presentations and over-head projectors; Social Studies teaching students mostly prefer illustrations, schema and graphics, models, film demonstrations, computer software and PowerPoint presentations; English teaching students mostly prefer film demonstrations.

According to Table 8, some teaching method preferences of education faculty students show differences in terms of gender whereas others do not. In light of the findings, the preferences of case study, individual work and inductive methods show a significant difference at the 0.01 level in terms of gender and are favored by female students. The preferences of demonstration and research methods show significant differences at the 0.05 level and is favored by female students.

According to Table 9, some teaching material preferences of education faculty students show differences in terms of gender, whereas others do not. In light of the findings, students' perception on models show significant differences at the 0.01 level in terms of gender and are favored by female students. Students' perceptions on film demonstrations show significant differences at the 0.05 level in terms of gender, which is favored by female students. However, perceptions on books and written materials, illustrations, schema and graphics, computer software, PowerPoint demonstrations, and over-head projectors show no significant difference in terms of gender.

According to Table 10, some teaching material preferences of education faculty students show differences in terms of grade level, however, others do not. In light of the findings, students' perceptions of group

Table 8. Perceptions of students on teaching methods suitable for their own learning according to their gender.

	Gender	n	x	ss	t	sd	p
Lecturing	Female	691	3.22	1.033	−0.297	1053	0.766
	Male	364	3.24	1.077			
Question–Answer	Female	691	3.73	0.957	1.269	1053	0.205
	Male	364	3.65	0.940			
Group Work	Female	691	3.43	1.051	−0.341	1053	0.733
	Male	364	3.46	1.066			
Individual Work	Female	691	3.89	0.974	3.008	1053	**0.003**
	Male	364	3.70	1.069			
Deductive Method	Female	691	3.42	0.985	1.414	1053	0.158
	Male	364	3.32	1.098			
Inductive Method	Female	691	3.74	0.981	3.121	1053	**0.002**
	Male	364	3.54	0.997			
Brainstorming	Female	691	3.90	0.980	1.056	1053	0.291
	Male	364	3.83	1.011			
Discussion Method	Female	691	4.00	1.009	−1.012	1053	0.312
	Male	364	4.06	0.949			
Case Study	Female	690	4.36	0.800	3.022	1052	**0.003**
	Male	364	4.20	0.853			
Project Method	Female	691	3.73	1.072	1.753	1053	0.080
	Male	364	3.60	1.154			
Problem-solving	Female	691	3.93	0.976	0.718	1053	0.473
	Male	364	3.88	1.008			
Presentation	Female	691	3.59	1.165	0.673	1053	0.501
	Male	364	3.54	1.148			
Drama	Female	691	3.87	1.092	1.432	1053	0.153
	Male	364	3.76	1.106			
Demonstration	Female	691	3.95	1.023	2.147	1053	**0.032**
	Male	364	3.81	1.099			
Cooperative Learning	Female	691	3.55	1.089	−0.867	1053	0.386
	Male	364	3.61	1.167			
Research Method	Female	690	4.03	1.032	2.431	1052	**0.015**
	Male	364	3.86	1.123			

work method were evaluated to be below 4.00 points on average in terms of grade level. The perceptions of students show significant differences at the 0.05 level in terms of grade level. According to pairwise comparisons, freshmen have more positive opinions than sophomores.

The individual work method has been evaluated to be below 4.00 points on average by all grade levels. The points related to the level of preference of the methods show significant differences at the 0.05 level in terms of grade level.

Table 9. Perceptions of students on teaching materials suitable for their own learning according to their gender.

	Gender	N	X	Ss	T	Sd	P
Books and Written Materials	Female	691	3.58	1.061	1.942	1053	0.052
	Male	364	3.45	1.135			
Illustrations	Female	691	4.06	0.888	2.895	1053	0.004
	Male	364	3.89	0.931			
Schema and Graphics	Female	691	4.02	0.921	0.682	1053	0.496
	Male	364	3.98	0.841			
Models	Female	691	4.1	0.860	2.762	1053	**0.006**
	Male	364	3.94	0.916			
Film Demonstrations	Female	691	4.35	0.791	2.193	1053	**0.029**
	Male	364	4.24	0.852			
Computer Software—CD-VCD	Female	691	3.82	1.000	−0.481	1053	0.630
	Male	364	3.85	0.993			
PowerPoint Demonstrations	Female	691	3.65	1.091	0.25	1053	0.803
	Male	364	3.63	1.107			
Over-head Projector	Female	691	3.31	1.162	−1.413	1053	0.158

Table 10. Perceptions of students on teaching methods suitable for their own learning according to grade level.

Teaching methods	Grade level	n	x	ss	F	p	Source of variants
Lecturing	Freshman	343	3.26	1.108	2.524	0.081	
	Sophomore	362	3.30	1.037			
	Junior	350	3.13	0.993			
	Total	1055	3.23	1.048			
Question–Answer	Freshman	343	3.76	0.953	0.964	0.382	
	Sophomore	362	3.67	0.933			
	Junior	350	3.67	0.968			
	Total	1055	3.70	0.951			
Group Work	Freshman	343	3.55	0.990	3.235	**0.040**	Between freshmen and Sophomore levels
	Sophomore	362	3.35	1.166			
	Junior	350	3.43	0.989			
	Total	1055	3.44	1.055			
Individual Work	Freshman	343	3.71	1.041	4.171	**0.016**	Between freshmen and sophomore levels
	Sophomore	362	3.93	0.975			
	Junior	350	3.82	1.011			
	Total	1055	3.82	1.012			
Deductive Method	Freshman	343	3.35	1.037	0.282	0.754	
	Sophomore	362	3.41	1.020			
	Junior	350	3.39	1.023			
	Total	1055	3.38	1.026			

Table 10. Cont'd.

Inductive Method	Freshman	343	3.59	1.044			
	Sophomore	362	3.68	0.997	1.499	0.224	
	Junior	350	3.72	0.927			
	Total	1055	3.67	0.991			
Brain Storming	Freshman	343	3.77	1.033			
	Sophomore	362	3.87	0.986	4.269	**0.0**14	Between freshmen and sophomore levels
	Junior	350	3.99	0.942			
	Total	1055	3.88	0.990			
Discussion Method	Freshmen	343	4.01	1.032			
	Sophomore	362	3.94	0.992	2.714	0.067	
	Junior	350	4.11	0.936			
	Total	1055	4.02	0.989			
Case Study	Freshmen	342	4.30	0.838			
	Sophomore	362	4.28	0.848	0.345	0.708	
	Junior	350	4.33	0.779			
	Total	1054	4.31	0.822			
Project Method	Freshmen	343	3.62	1.096			
	Sophomore	362	3.66	1.123	2.131	0.119	
	Junior	350	3.78	1.081			
	Total	1055	3.69	1.102			
Problem-solving	Freshmen	343	3.91	1.003			
	Sophomore	362	3.90	1.000	0.148	0.862	
	Junior	350	3.94	0.958			
	Total	1055	3.91	0.987			
Presentation	Freshmen	343	3.59	1.123			
	Sophomore	362	3.50	1.210	1.184	0.307	
	Junior	350	3.63	1.140			
	Total	1055	3.57	1.159			
Drama	Freshmen	343	3.80	1.154			
	Sophomore	362	3.75	1.088	2.93	0.054	
	Junior	350	3.94	1.042			
	Total	1055	3.83	1.097			
Demonstration	Freshmen	343	3.94	1.065			
	Sophomore	362	3.84	1.076	0.924	0.397	
	Junior	350	3.93	1.013			
	Total	1055	3.90	1.052			
Cooperative Learning	Freshmen	343	3.66	1.161			
	Sophomore	362	3.56	1.131	1.752	0.174	
	Junior	350	3.50	1.054			
	Total	1055	3.57	1.117			
Research Method	Freshmen	343	3.94	1.104			
	Sophomore	362	3.94	1.041	0.879	0.415	
	Junior	349	4.03	1.057			
	Total	1054	3.97	1.067			

Table 11. Perceptions of students on teaching materials suitable for their own learning according to grade level.

	Grade level	n	x	ss	F	p	Source of variants
Books and written materials	Freshmen	343	3.55	1.127			
	Sophomore	362	3.60	1.074	1.923	0.147	
	Junior	350	3.45	1.060			
	Total	1055	3.53	1.088			
Illustrations	Freshmen	343	3.98	0.955			
	Sophomore	362	3.98	0.920	0.907	0.404	
	Junior	350	4.06	0.841			
	Total	1055	4.00	0.906			
Schema and graphics	Freshmen	343	3.95	0.949			
	Sophomore	362	4.01	0.915	1.37	0.255	
	Junior	350	4.06	0.813			
	Total	1055	4.01	0.894			
Models	Freshmen	343	3.88	0.948			
	Sophomore	362	4.07	0.862	9.495	0.000	Between Freshmen and juniors
	Junior	350	4.17	0.814			
	Total	1055	4.04	0.883			
Film demonstrations	Freshmen	343	4.27	0.819			
	Sophomore	362	4.33	0.806	0.731	0.482	
	Junior	350	4.33	0.818			
	Total	1055	4.31	0.814			
Computer software—CD-VCD	Freshmen	343	3.82	0.983			
	Sophomore	362	3.82	1.021	0.176	0.839	
	Junior	350	3.86	0.988			
	Total	1055	3.83	0.997			
PowerPoint	Freshmen	343	3.71	1.085			
	Sophomore	362	3.58	1.102	1.165	0.312	
	Junior	350	3.63	1.101			
	Total	1055	3.64	1.096			
Over-head projector	Freshmen	343	3.39	1.167			
	Sophomore	362	3.26	1.190	1.587	0.205	
	Junior	350	3.40	1.130			
	Total	1055	3.35	1.164			

According to pairwise comparisons, sophomores have more positive opinions than freshmen. Students' perceptions of brainstorming method are below 4.00 points. The level of preference of the method shows significant differences at the .05 level in terms of grade level. According to pairwise comparisons, juniors have more positive opinions than freshmen. Students' perceptions of lecturing, question-answer, deductive, inductive, discussion, case study, project, problem-solving, presentation, drama, demonstration, cooperative learning and research methods show no significant

difference in terms of grade.

According to Table 11, the findings concerning differences in students' preferences of teaching materials in terms of grade level are summarized below. The perceptions of students of models of the teaching materials show significant differences at the 0.01 level in terms of grade level. According to pairwise comparisons, juniors have more positive opinions than freshmen. Although freshmen evaluated it to be below 4.00 points on average, sophomores and juniors evaluated it to be over 4.00 points on the average. The perceptions of

students on books and written materials, illustrations, schema and graphics, film demonstrations, computer software, PowerPoint and over-head projectors show no significant differences in terms of grade level.

DISCUSSION

That lecturing method was evaluated as the most ineffective method is an expected result. The common opinion that lecturing method is ineffective in terms of learning due to students' being passive during learning and teaching processes, the inability to provide them with the learning environment in which they are able to express their perceptions and insufficient feedback related to their learning level, is also shared by education faculty students. That case study and discussion methods are the most effective methods which may be interpreted as an indicator of students' desire to be actively involved in learning processes. Conversely, case studies are regarded as an effective method that allows pre-service teachers deal with some difficulties they may encounter within their profession during their inservice training (Şahin et al., 2010). In style research, memorization, considered to be a part of lecturing method, is more associated with conservative style as it has been expected that, as in traditional schools for a long time, a great deal of information is absorbed and repeated. In other words, a rote learning (memorization) approach will improve conservative style preference (Sternberg, 1997). Lecturing method supports a rote learning approach by its nature of evaluation (Esmer, 2013). However, this approach definitely, does not conform to constructivist teaching programs, carried out in Turkey since 2005. Constructivism, broadly speaking, is based on; (1) the nature of reality (knowledge belongs to the world), (2) the nature of knowledge (knowledge is shaped in human mind), (3) the nature of human (meanings are shared), (4) the nature of science (meanings are shaped thanks to humans' active participation) (Wilson, 1997; Erdem and Demirel, 2002).

As a reflection of constructivist learning approach, the main alteration in the view of learning- teaching seems to inevitably affect teacher education and teacher training programs in our country (Arslan, 2007). Therefore, it is assumed that the teachers who are trained to be guides in constructivist learning environments are expected to have grown up in a constructivist learning environment themselves. As a result, discussion and case study methods are assumed to be the most popular methods among education faculty students. However, the methods of lecturing, question-answer, group work, deductive and inductive methods, individual work, and project method have been regarded as the least preferred methods.

Although, the most effective material is film demonstrations, it is clear that over-head projector is the most ineffective method. To some extent, students find it more effective to see the topics that they will learn through a film scenario; this can be evaluated as a natural result. Films appeal to all senses due to the scenarios, visuality and musical backgrounds, and they also stimulate feelings. Therefore, this highlights the importance of film demonstrations to education (İşcan, 2011). Films are also considered to help teachers develop teaching skills and deal with the problems they encounter. On the contrary, computer software (CD-VCD) materials are, broadly speaking, effective but not as much as films. It is understood from the research results related to material preferences that the context of the material is as crucial as the material itself. As a result, it is stated that computer software producers should create unique works on the purpose of having the same impression as film producers.

In summary, it is stated that, to students, the most popular and engaging materials are film demonstrations, illustrations and models and, then, schema and graphics, computer software, and PowerPoint presentations. Among the least interesting materials are books and written materials and over-head projectors. Both visual and audio environments involve film machines, animations, television and videos. This sort of learning environment consists of more than one kind of data as they appeal to more than one sense, and therefore they are called multimedia (Akkoyunlu and Yılmaz, 2005). It was shown that pre-service teachers prefer multimedia learning environments. The fact that multimedia learning environments have become prevalent in classroom activities both increases interest among pre-service teachers toward these materials and also requires them to have the necessary knowledge and skills about this kind of educational technologies (Yılmaz, 2007).

In light of the findings, it is possible to state that there is a difference in teaching method preferences by department. According to arithmetic mean, if 4.00 points is taken as a criteria, primary-school teaching students mostly prefer discussion, case study and demonstration methods; Science teaching students mostly prefer individual work, case study, and problem-solving methods; Mathematics teaching students mostly prefer case study, and problem-solving methods; religion culture teaching students mostly prefer discussion, case study, and research methods; Music teaching students mostly prefer individual work, discussion, and case study, research methods; Social studies teaching students mostly prefer discussion and case study methods; English teaching students mostly prefer discussion and case study methods.

The education faculty students' preferences related to individual work, inductive method, case study, demonstration, and research methods show differences in terms of gender; conversely, question-answer, group work, deductive method, brainstorming, discussion,

project method, problem-solving, presentation, drama, cooperative learning, and research methods show no difference. If the methods for which students have different perceptions are considered, it was seen that female students awarded more points. It is open to question whether this result is based on culture or learning processes as well as gender.

In light of findings related to differences in the perceptions of students in terms of grade level, it has been emphasized that group work, individual work and brainstorming methods show differences, although other methods do not. Group work preference decreases but individual work preference seems to increase while moving to the sophomore level. The average points related to brainstorming method show that the higher the interest, the higher the grade. It appears that when the students move to a higher grade, they tend to prefer methods that allow them to actively participate in the process individually.

Based on the findings mentioned above, it can be said that learning settings in teacher's training should be structured by taking individual differences into account. Therefore, it can be suggested that academicians in the teacher education field should use different methods and techniques in the courses they teach. Additionally, experimental research should be carried out to examine the effectiveness of learning settings organized in line with individual differences.

Conflict of Interests

The authors have not declared any conflicts of interest.

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