

INVESTIGATING THE RELATIONSHIPS AMONG STUDENTS' CHEMISTRY MOTIVATIONS, ACHIEVEMENT GOAL ORIENTATION, CLASSROOM ENGAGEMENT, GENDER, CLASS AND POSITIVE TEACHER BEHAVIOURS THROUGH STRUCTURAL EQUATION MODELING

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The study aimed to investigate how high school students' achievement goal orientation, positive teacher behaviour, classroom engagement, gender and class perceptions are related to chemistry motivation. The research was designed using relational survey model. The sample consisted of 688 high school students. Chemistry motivation questionnaire, achievement goal orientations scale, positive teacher behaviours scale and classroom engagement inventory were used as data collection tools. The correlations between the variables were examined using Structural Equation Modeling (SEM). Results showed that there were positive and significant correlations between chemistry motivation and achievement goal orientations, achievement goal orientations and positive teacher behaviours, classroom engagement and positive teacher behaviours. Negative and significant correlations were also found to exist between achievement goal orientation and classroom engagement, positive teacher behaviours and chemistry motivation. Achievement goal orientations and positive teacher behaviours were also found to be significantly related to class engagement.

KEYWORDS: Chemistry Motivations, Achievement Goal Orientations, Classroom Engagement, Positive Teacher Behaviours, Structural Equation Modeling

INTRODUCTION

In the learning process, students may have different personal perspectives that affect their cognitive, affective and behavioural responses. These are motivation, orientation, anxiety, behaviour etc. Motivation is something that is needed for individuals to mobilize cognitively. Goal orientation enables individuals to uncover their mental process, realize their proficiency, and identify cognitive, affective and psychomotor behaviours during the learning process. Achievement goal orientation is the processes that the individual performs in his or her mind and the ability to conclude these operations. Achievement goal orientation realizes the abilities of the individual, reveals his or her mental skills (DeShon, & Gillespie, 2005). Positive teaching behaviours can be defined as all of the behaviours that will affect students' cognitive and affective behaviours, and that will affect student success with the positive classroom environment created by using love, respect and discipline elements. The positive attitudes and behaviours of the teacher will not only increase the success levels of the students but also will have an impact on the permanence of the learning (Taşpınar, 2002). Teachers have many duties such as raising individuals, ensuring peace in the society, protecting social peace, socializing individuals and preparing them for social life (Karagözoğlu, 2003). In student-teacher interaction, the behaviours revealed by teachers in the classroom affect the academic success of the student on the one hand, and on the other hand affects the student's learning attitude and social behaviour (Güzel, 2017). Class engagement includes activities such as making the student interested in the lesson, performing meaningful learning in the lesson and asking questions in the lesson. Active participation of students in learning activities in the classroom is defined as classroom engagement (Christenson, Reschly, & Wylie, 2012). Classroom engagement is considered cognitively, affectively, and behaviourally (Wang, Bergin, & Bergin, 2014).

REVIEW OF RELATED LITERATURE

Studies Related to Chemistry Motivation

Ferrell, Phillips and Barbera, (2016) examined academic motivation of university students in chemistry class. In the research, academic motivation was evaluated with self-efficacy, interest and effort belief. According to the research results, chemistry motivation is closely related with course performance. A teacher cannot control the beliefs of the students he/she attends, but he/she can develop his/her students' motivations and beliefs by choosing appropriate teaching strategies while teaching. This is also the case with chemistry.

Wang, Chow, Degol, and Eccles, (2017) examined the effect of motivational beliefs on science such as physics and chemistry. Motivational beliefs are very important to achieve positive results in education. The secondary school period

is a critical period for interest in science such as physics and chemistry and for the development of academic self-concept. While it is determined that students' motivational beliefs about physics and chemistry are in a positive relationship with their self-concept and task values, it is reported that young people should be interested in these lessons at an early age and see them at school in order to have high motivation in these sciences and to develop their competencies.

Núñez, and León, (2018) discussed the hierarchical model of intrinsic and extrinsic motivation to examine individual motivation in their study. Data were collected using global motivation, academic motivational, situational motivation scales and self-determination index in their studies with university students. The research shows that there is a reciprocal relationship and link between the global, contextual, and situational motivation of first year university students. In addition, situational motivation predicts changes in contextual motivation, contextual motivation provides change in global motivation over time.

Studies on Achievement Goal Orientation

Tuominen-Soini, Salmela-Aro, and Niemivirta (2008) examined the connections between achievement goal orientation and subjective well-being. In this study, students were grouped according to their goal orientation and it was investigated whether these groups differ in terms of subjective well-being. Subjective well-being is positively associated with self-improvement and growth goal orientations. While evaluating the role of achievement goal orientations in learning and academic achievement, subjective well-being information should also be taken into consideration.

Kaplan and Flum (2010) aimed to reveal the relationship between individuals' achievement goal orientation and identity formation process in their studies. Students use achievement goal orientations to deal with issues related to identity formation. In line with this result, it is revealed that there is a relationship between achievement goal orientation and identity formation process. While determining the goals of the education, the answers to the questions of what we want and expect from students should be determined with priority. In addition, the role of schools and teachers in providing motivation and motivation development should also be examined.

Tian, Yu, and Huebner (2017) examined the relationship between high school students' achievement goal orientation and subjective well-being in terms of academic social comparison. As a result of the analysis of the data obtained from 883 high school students, it was determined that achievement goal orientation has a positive significant relationship between learning goal orientation and performance approach orientation and subjective well-being, and there is a negative significant relationship between performance avoidance orientation and subjective well-being.

Studies Related to Classroom Engagement

Sever, Ulubey, Toraman, and Türe (2014) discussed the relationship between high school students' attitudes towards school and classroom engagement in terms of various variables in their study. In their study with 705 high school students, the links between variables such as gender, course success, and course type and attitude and classroom engagement were examined. As a result of the research, it was determined that students with high course success attend to classes more, women attend to classes more than men, and participation in social lessons is higher than participation in numerical based lessons such as mathematics. In line with the results of the research, suggestions were made to teachers to increase the participation of students in classes.

In a study, Cıvabaş (2019) tried to determine the effect of primary school students' communication with their teachers in English lesson on classroom engagement and success. As a result of the research, it has been shown that students perceive their teachers as helpful, friendly and with leadership behaviour. In addition, students reported that their interpersonal communication with their teachers ensured their cognitive, affective, behavioural and active participation in the lesson and was also in relation with their success.

Núñez, and León, (2019) aimed to reveal the effect of autonomy-enhancing behaviours exhibited by teachers on students' autonomy and its effect on classroom engagement. For this purpose, a study was carried out with university students studying in social, primary and childhood education programs at a state university in Spain. The autonomy support provided to university students as a result of the research improves students' autonomy on the one hand and affects classroom engagement on the other. There are particularly strong correlations between affective involvement and the need for autonomy.

Studies on Positive Teacher Behaviours

Tilfarlıoğlu, and Akıl (2012) planned a study to determine positive teacher behaviours. The positive teachers' behaviour in a relationship with students' success. In the study conducted with university students, it was noticed that the teachers who showed effective teacher behaviour students got higher course success grades scores. While cognitive engagement is moderate, the rate of behavioural engagement is higher. Academic achievement increases as affective engagement increases. Vijayan, Chakravarthi, and Philips (2016) examined the connection between teacher behaviour, practical strategies and rules at primary school level. At the end of the research it was revealed that the relationships that teachers build with their students shall have a huge impact on their academic achievement as well as the way in which they behave.

Cinches, Russell, Chavez, and Ortiz (2017) stated in their study that the qualifications of teachers are the most important feature that determines the participation and qualifications of students. Teacher effectiveness and teacher participation ensures student participation. According to the results of the research, teacher effectiveness is an important predictor of student participation. In order to ensure student participation, teachers have a great responsibility to design the learning environment in a suitable way for the student. Varga (2017) conducted a study with high school students in which he/she investigated the teachers/students relationship in schools in depth. Positive teacher behaviours were found to be effective in improving the behaviour of students who do not take duties and responsibilities in the classroom. In this way, students' classroom behaviour can be improved.

Çelik, Örenoğlu Toraman, and Çelik, (2018) examined the relationship between student achievement, classroom engagement and teacher closeness. As a result of the research conducted with high school students, a positive relationship was determined between teacher affinity, academic achievement and classroom engagement. According to Leoanak, & Amalo, (2018), the aim of education should be to raise individuals with well-developed minds and characters rather than raising individuals who score high in exams. In a study conducted for this purpose, the effect of the behaviours exhibited by the teacher in classroom interaction on students' motivation was examined. When weak relationships occur with the teacher in the classroom, students may have difficulties in learning the lesson, and the teacher may have problems motivating students to the lesson.

AIM OF THE STUDY

The aim of this study is to investigate how high school students' chemistry motivation, achievement goal orientation, positive teacher behaviours, classroom engagement, gender and class perceptions are related to chemistry motivation. The proposed model is summarized in Figure 1.

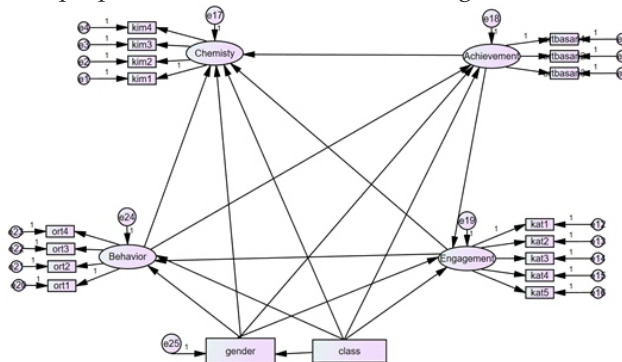


Figure 1. The Hypothesized Model

RESEARCH METHODOLOGY

The study was designed as per the relational survey model. Relational survey is a model that enables to examine the relationship of two or more variables with one another (Fraenkel, Wallen & Hyun, 2012). The aim of this study was to determine the achievement goal orientations and chemistry motivations of high school students', examine the relationship between these variables and evaluate their associations with gender and class variables as well.

SAMPLE OF THE STUDY

The sample of the study consists of 688 high school students in Turkey. 55.1% of the students were female, 44.9% were male. The students who participated in the research were attending either Anatolian high schools, high school or vocational high schools. Also, their classes were classified as "9. Class, 10. Class, 11. Class and 12. Class". The characteristics of the sample are given in Table 1.

Table 1

Characteristics of the Sample.

		f	%
Gender	Female	379	55.1
	Male	309	44.9
School type	Anatolian high school	183	26.6
	High school	434	63.1
	Vocational high school	71	10.3
Class	9. class	191	27.8
	10. class	197	28.6
	11. class	190	27.6
	12. class	110	16.0

TOOLS FOR DATA COLLECTION

In the research, chemistry motivation questionnaire, scale of evaluating student views on the effect of positive teacher behaviours on student success, achievement orientation scale and classroom engagement inventory were used as data collection tools.

Achievement Goal Orientations Scale: Achievement goal orientations scale was developed by Midgley, Kaplan, Middleton, Maehr, Urdan and Hicks-Anderman, (1998) and adapted to Turkish by Akin and Çetin (2007). The scale consisted of 17 statements in a 5-point Likert Type. The scale has three dimensions. These dimensions are mastery goals, performance-approach goals and performance-avoidance goals. The Cronbach Alpha reliability coefficient of learning orientation was 0.77, performance-approach orientation was 0.79 and performance-avoidance orientation was 0.78. The Cronbach Alpha reliability coefficient obtained from the sample data was 0.916 and for the sub-scales was 0.877; 0.867; 0.792 and 0.785.

Chemistry Motivation Questionnaire: Chemistry motivation questionnaire was developed by Glynn, Taasoobshirazi and Brickman (2009) and adapted to Turkish by İlhan, Yıldırım and Sadi Yılmaz (2012). The questionnaire consisted of 22 statements in a 5-point Likert Type scale. The scale consists of internal motivation-personal convenience, external motivation, self-determination-self-sufficiency and anxiety of evaluation sub-dimensions. The Cronbach Alpha reliability coefficient of the whole scale was 0.82 and of the sub-dimensions was 0.81, 0.74, and 0.62. The Cronbach Alpha reliability coefficient acquired from the sample data was 0.785 and for the sub-scales was 0.815, 0.544, 0.777 and 0.603.

Scale of Evaluating Student Views on the Effect of Positive Teacher Behaviours: Scale was developed by Soydal (2006). It consisted of 34 statements in a 5-point Likert Type scale. The scale has four dimensions. These dimensions are planning behaviours, application behaviours, consolidation behaviours, and evaluation behaviours. The scale consists of two stages. At the first stage, the students answer the scale items whether the positive teacher behaviours are shown or not in the classroom, by marking one of "yes" and "no" options. In the second stage, students indicate the degree of positive teacher behaviours affecting their success by marking one of "never", "rarely" "occasionally", "often" and "always" options. The Cronbach Alpha reliability coefficient of the whole scale was 0.91 and of the sub-dimensions was 0.78, 0.81, 0.87, and 0.67. The Cronbach Alpha reliability coefficient obtained from the sample data was 0.962 and for the sub-scales was 0.814, 0.915, 0.931 and 0.750.

Classroom Engagement Inventory: Classroom engagement inventory was developed by Wang, Bergin and Bergin (2014) and was adapted to Turkish by Sever (2014). Inventory consisted of 23 statements and five sub-dimensions. These are affective engagement, behavioural engagement-effortful classroom participation, behavioural engagement-compliance, disengagement and cognitive engagement. The Cronbach Alpha reliability coefficient of the whole

scale was 0.930 and of the sub-dimensions was 0.877, 0.827, 0.746, 0.890 and 0.697. The Cronbach Alpha reliability coefficient obtained from the sample data was 0.897 and for the sub-scales was 0.859, 0.811, 0.713, 0.796 and 0.767.

RESULTS OF THE STUDY

All assumptions required for SEM were justified before analyzing the data. The analysis of results are given in Table 2.

Table 2
Descriptive Statistics for the Observed Variables.

Observed Variables	Mean	5% Trimmed Mean	SD	Min	Max	Skew.	Kurt.
Internal Motivation -Personal Convenience (1)	3.26	3.27	.93	1.00	5.00	-.171	-.045
External Motivation (2)	3.45	3.48	.87	1.00	5.00	-.531	.697
Self-determination -Self-Sufficiency (3)	3.56	3.62	1.03	1.00	5.00	-.555	-.049
Anxiety of Evaluation (4)	3.37	3.39	.94	1.00	5.00	-.253	-.294
Mastery Goals (5)	3.22	3.24	.85	1.00	5.00	-.358	.447
Performance -Approach Goals (6)	3.54	3.59	.98	1.00	5.00	-.664	.167
Performance -Avoidance Goals (7)	2.76	2.74	1.01	1.00	5.00	.215	-.495
Planning Behaviour s (8)	3.07	3.07	1.07	1.00	5.00	.061	-.825
Application Behaviour s (9)	2.99	3.99	1.09	1.00	5.00	-.064	-.906
Consolidation Behaviour s (10)	3.03	3.03	1.17	1.00	5.00	-.297	-.920
Evaluation Behaviour s (11)	3.04	3.04	1.17	1.00	5.00	.011	-1.048
Affective Engagement (12)	3.01	3.01	.95	1.00	5.00	-.038	-.321
Behavioural Engagement -Effortful Classroom Participation (13)	3.24	3.25	.88	1.00	5.00	-.274	.069
Behavioural Engagement - Compliance (14)	3.55	3.59	.98	1.00	5.00	-.599	-.043
Disengagement (15)	2.65	2.62	1.06	1.00	5.00	.425	-.516
Cognitive Engagement (16)	3.39	3.43	.91	1.00	5.00	-.443	.190
Gender	1.44	1.43	.49	1.00	2.00	.233	-1.952
Class	10.29	10.27	1.04	9.00	12.00	.194	-1.144

Note: Skew. = Skewness; Kurt. = Kurtosis.

Whether the data conforms to the normal distribution was checked with kurtosis and skewness values. These values were within accepted limits and data was normally distributed (Tabachnick, & Fidell, 2013). To observe whether there are multivariate normality and extreme values, the mean and the trimmed mean were compared. In these data set a few outliers were observed when means were compared to 5% trimmed means. The

Mahalanobis distance value was also examined. In the data file, outliers whose Mahalanobis distance is above the critical value were excluded from the data set. In order to meet the multivariate normality assumption, these data were excluded from the analysis and the remaining 677 data met the multivariate normality assumption.

To examine the relationship between the latent variables of achievement goal orientations, chemistry motivation, classroom engagement and positive teacher behaviours Structural Equation Modeling (SEM) has been used. SEM is used to establish the model of relationships between these variables. Correlation analysis is used to determine the level of relationship between variables, whereas regression analysis is used for functional explanations. Obtained findings are presented in Table 3.

In Table 3, the correlations between all variables are given. From this table we can say that some correlations are significant, some are negatively related, and others are not significant. The model which was obtained from SEM is given in Figure 2.

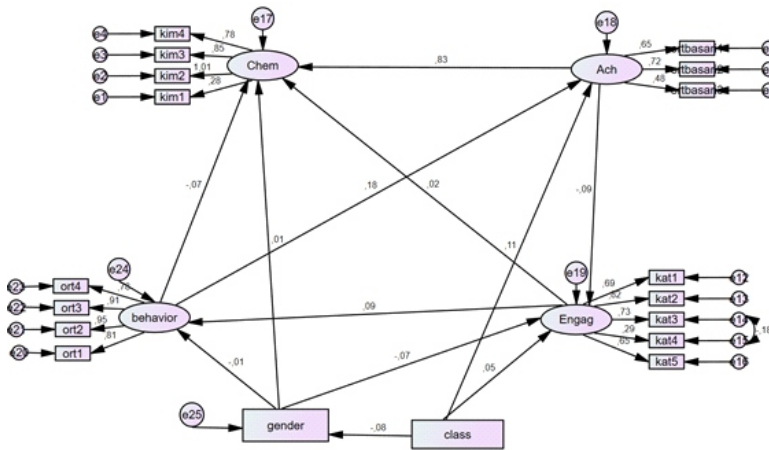


Figure 2. The SEM Model for Variables.

As can be seen in Figure 2, there were no significant correlations between chemistry motivation and gender, gender and classroom engagement and class and positive teacher behaviours. These insignificant correlations were removed from the model and a new model was created. According to new model the fit indices are given in Table 4.

Table 3
Correlation Between Sub-Dimensions.

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	Gender	Class
1	1	,292(**)	,243(**)	,286(**)	,354(**)	,226(**)	,156(**)	,016	,076	,056	,025	-,045	-,015	,003	-,067	,021	,006	,072
2		1	,857(**)	,785(**)	,530(**)	,604(**)	,384(**)	,034	,093(*)	,097(*)	,026	-,089(*)	-,023	-,005	,003	-,008	,002	,102(**)
3			1	,620(**)	,456(**)	,602(**)	,244(**)	-,020	,040	,054	,001	-,066	-,022	-,013	-,012	-,037	-,009	,083(*)
4				1	,387(**)	,463(**)	,316(**)	,026	,067	,059	,018	-,061	,011	-,013	,012	,012	,035	,075
5					1	,462(**)	,354(**)	,069	,107(**)	,107(**)	,081(*)	-,045	-,048	,067	-,067	,019	-,021	,050
6						1	,319(**)	,037	,117(**)	,149(**)	,069	-,125(**)	-,046	-,046	-,015	-,047	,001	,106(**)
7							1	,106(**)	,144(**)	,159(**)	,097(*)	-,048	-,022	,079(*)	,030	,037	-,012	,120(**)
8								1	,788(**)	,723(**)	,589(**)	,055	,051	,022	,138(**)	,094(*)	-,012	,176(**)
9									1	,864(**)	,737(**)	,031	,039	,037	,162(**)	,107(**)	-,014	,183(**)
10										1	,748(**)	-,003	,004	,005	,136(**)	,055	-,022	,172(**)
11											1	,044	,063	,037	,135(**)	,057	-,011	,147(**)
12												1	,587(**)	,512(**)	,182(**)	,394(**)	-,052	,039
13													1	,578(**)	,226(**)	,533(**)	-,056	,032
14														1	,091(*)	,497(**)	-,097(*)	,010
15															1	,219(**)	,040	,089(*)
Gender																1	-,025	-,007
Class																	1	-,076

**Correlation is significant at the 0.01 level (2-tailed)

Table 4**Criteria of SEM.**

	Well Fitness	Acceptable Fitness	Result
χ^2/df	$0 \leq \chi^2/df \leq 3$	$3 \leq \chi^2/df \leq 5$	2.544 Well
RMSEA	$0 < RMSEA < 0.05$	$0.05 < RMSEA < 0.08$	0.048 Well
NFI	$0.95 \leq NFI \leq 1$	$0.90 \leq NFI \leq 0.95$	0.95 Well
NNFI	$0.97 \leq NNFI \leq 1$	$0.95 \leq NNFI \leq 0.97$	0.97 Well
CFI	$0.97 \leq CFI \leq 1$	$0.95 \leq CFI \leq 0.97$	0.97 Well
GFI	$0.95 \leq GFI \leq 1$	$0.90 \leq GFI \leq 0.95$	0.95 Well
AGFI	$0.90 \leq AGFI \leq 1$	$0.85 \leq AGFI \leq 0.90$	0.93 Well

Note: Adapted from Schermelleh-Engel, Moosbrugger, and Muller (2003).

Results in Table 4 show that the fit indices from the new model are $\chi^2/df=2.544$, $RMSEA=.048$, $NFI=.95$, $NNFI=.97$, $CFI=.97$, $GFI=.95$, and $AGFI=.93$. This indicated well fit indices. Path coefficients of new model are shown in Figure 3. Standardized path coefficients (direct, indirect and total effects) are demonstrated in Table 5.

Table 5**Standardized Direct, Indirect, and Total Effects in the New Model.**

Variables	Chemistry			Engagement			Behaviours			Orientations			Class		
	D.E.	I.E.	T.E.	D.E.	I.E.	T.E.	D.E.	I.E.	T.E.	D.E.	I.E.	T.E.	D.E.	I.E.	T.E.
Engagement	-	-	-	-	-.001	-.001	-	-.008	-.008	-.076	-	-	-	-.006	-.006
Chemistry	-	-	-	-	.003	-	-.019	.044	-	.395	-	-	-	.026	-
Behaviours	-	-	-	.108	-	.107	-	-.001	-.001	-	-.008	-	.158	-.001	.157
Orientations	-	-	-	-	.012	-	.111	-	-	-	-.001	-	.055	.017	-

D.E.: Direct Effect, I.E.: Indirect Effect, T.E.: Total Effect

From Table 5 it can be seen that positive teacher behaviours have a direct effect on classroom engagement ($\beta=.11$), it has also a direct effect on class ($\beta=.16$), chemistry has a direct ($\beta=.02$) and indirect ($\beta=.04$) effect on positive teacher behaviour and it has also a direct effect on achievement goal orientations ($\beta=.40$). It also has indirect effect on class ($\beta=.03$), achievement goal orientations has indirect effect on classroom engagement ($\beta=.01$), it has also a direct effect on positive teacher behaviour ($\beta=.11$) and direct ($\beta=.06$) and indirect ($\beta=.02$) effect on class.

The results show the model did not fit the data very well. Moreover, it indicated that the paths between gender and chemistry, achievement,

behaviour and engagement were not significant. Modification indices were examined, and not significant paths were removed from the model. The new model is given in Figure 3.

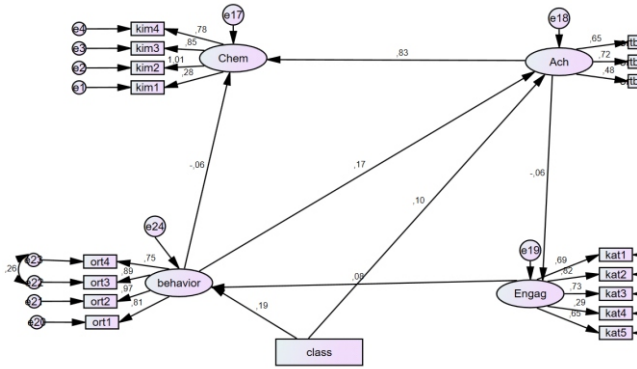


Figure 3. The Alternative SEM Model for Variables.

On examining Figure 3 it can be seen that, there is a positive and significant correlation between achievement goal orientations and chemistry motivation, positive teacher behaviour and achievement goal orientations, class and achievement goal orientations and positive teacher behaviour.

DISCUSSION AND CONCLUSION

The results of the structural equation model indicated that, the fit indices of the model are in well fitness. There are positive and significant relationships between the achievement goal orientation and the chemistry motivation, achievement goal orientation and positive teacher behaviour, class and achievement goal orientation, class and positive teacher behaviour, classroom engagement and positive teacher behaviour. There is a negative and significant relationship between achievement goal orientation and classroom engagement, positive teacher behaviour and chemistry motivation. Another result of the research shows that positive teacher behaviour has direct effect on classroom engagement and class while chemistry has both direct and indirect effect on positive teacher behaviour. It also has direct effect on achievement goal orientations and indirect effect on class while achievement goal orientations have indirect effect on classroom engagement and a direct effect on positive teacher behaviour and class.

When the literature was examined it was observed that gender was a significant variable for classroom participation (Sever, Ulubey, Toraman, & Türe, 2014). However, no significant results were obtained in our study (You,

Kim, Black, & Min, 2018), and gender has no significant effect with chemistry self-efficacy (Boz, Yerdelen-Damar, Aydemir, & Aydemir 2016). Besides, studies revealing the significant effect of gender are also noteworthy. Classroom engagement variable is associated with achievement goal orientation and positive teacher behaviour. Classroom engagement is considered cognitively, affectively, and behaviourally. It was determined that there was no significant relationship between class, gender, age variables and class participation (Wang, Bergin, & Bergin, 2014). In addition emotional, behavioural and cognitive dimensions are accepted to play an important role in defining student participation. According to the researches, it has been determined that there is a significant relationship of classroom engagement with motivation and academic success (Reeve, & Tseng, 2011).

Motivation support can be obtained to enable passive students to be active in class (Reeve, 2013). To enable students to participate in lessons, teachers should have more information about students to create a positive classroom atmosphere. For example, when the student knows what their level of perception is, it can create a more suitable learning environment for teachers and students (Tuyan, 2017). A teacher cannot control the students' beliefs that he or she has attended the lesson, but he or she can improve their motivations and beliefs by choosing appropriate teaching strategies for his/her students while he/she is teaching (Ferrell, Phillips, & Barbera, 2016). It is related to many variables such as motivation, perseverance and efforts that affect student participation in motivation (Ainley, 2012). The high positive relationship between achievement goal orientation and chemistry motivation can be explained as achievement goal orientation is about motivation. Achievement goal orientation includes knowing and evaluating individuals' competencies (Elliot, & McGregor, 2001). Achievement goal orientation explains why and how individuals participate in an academic task (Vedder-Weiss & Fortus, 2011). Besides the academic self-concept and task values of individuals in physics and chemistry are interrelated and connected (Wang, Chow, Degol, & Eccles, 2017). Chemistry motivation is closely related to course performance. Teachers should pay attention to using detailed learning strategies to engage students and give students more tasks. In the hierarchical model of intrinsic and extrinsic motivation, education is somewhere at the contextual level. Individuals develop a partially determined motivation and social factors such as teacher influence has a significant effect (Núñez, & León, 2018). Teachers make things easier for students depending on the context. Student engagement increases with individual support provided by teachers (Hospel & Galand, 2016). As a result, teachers increase the class participation of students.

In the study, the relationship between positive behaviours and classroom engagement was determined. When the literature was examined, teacher behaviour appears as a determining variable for student motivation, success and achievement goal orientation. Understanding, helpful and friendly behaviours of teachers are perceived immediately by students. These behaviours are positively correlated with students' classroom engagement (Civabaş, 2019). Students stated that the behaviours in a well-organized classroom, where good communication is established and trust is exhibited, and learning-teaching dialogue is engaged, also encourages motivation (Russell, & Slater, 2011). For the formation of positive teaching behaviours, the importance of the examples, situations and attitudes that teachers encounter during their undergraduate education period should not be forgotten (Koçak, & Önen, 2011). The study established that teacher effectiveness significantly influenced student engagement (Cinches, Russell, Chavez, & Ortiz, 2017). With the support of autonomy provided to students by teachers, students' psychological autonomy needs are met, and they are provided to adapt to the classroom environment. The experience of students in the classroom during a semester can be productive and beneficial if they perceive autonomy support from their teachers, satisfy the psychological need for autonomy, and engage during classroom instruction (Jang, Kim, & Reeve, 2016). Student participation has a positive effect on issues such as their academic success, and the persistence of grades and knowledge (Kuh, Cruce, Shoup, & Kinzie, 2008). To enable students to participate in the lesson, to improve their achievement goal orientations and to increase their motivation; in order to ensure the affective participation of students, the effect of autonomy, which is their individual characteristic should not be overlooked (Núñez, & León, 2019). It was stated that interest or motivation to be a mediator for student engagement and performance (Gonzalez, & Paoloni, 2015). These features should be taken into account. In order to enable students to participate in the lesson, teachers should turn to appropriate learning methods for students (Ünal, 2008). In this way, students can participate in the course cognitively. In order to ensure affective participation, there must be an affective relationship between the student and the teacher. Indeed, this research has revealed similar results. There is a positive and meaningful relationship between students' trust in their teachers and attendance to the class (Menteş, 2011). In later studies, the exchange of these variables with other variables can be examined, the levels of teacher candidates can be determined, and the effect of appropriate methods and techniques on these variables can be ascertained.

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