



## Effectiveness of learner-centered methods in elevating positive attitudes towards English: Meta-analysis study

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**ABSTRACT** This paper analyzed the effect of learner-centered methods (cooperative learning, drama and project-based learning) on learners' attitudes towards English lesson. Meta-analysis method was used in the study. 24 studies (25 effect sizes) were discovered through literature review. Analyses were done using random effects model. Learner-centered methods in foreign language teaching had a large ( $g=0.925$ , 95% CI [0.642-1.209],  $p<.0.000$ ) effect on learners' attitudes towards English lesson. The publication bias was interpreted both visually through Funnel plot and statistically via Rosenthal Classic fail-safe N and Orwin fail-safe N methods. Year of publication, the place of the research, publication type, the method applied, language skill, teaching level, experimental application duration and sample size were identified as moderators. It was concluded that Q-value for the effect sizes for publication year, language skill and teaching level was statistically meaningful and effective on the heterogeneity of effect sizes. One of the remarkable results was that the longer the experimental application period, the more effective it was in increasing positive attitudes towards the lesson.

**Keywords:** Attitudes, Learner-centered methods, Meta-analysis

## İngilizceye yönelik olumlu tutum geliştirmede öğrenci merkezli yöntemlerin etkililiği: Meta-analiz çalışması

**ÖZ** Bu çalışmada amaç dil öğretiminde öğreneni merkeze alan yöntemlerin öğrenenlerin derse yönelik tutumlarına etkisini inceleyen bireysel çalışmaların ulaştığı sonuçları analiz etmektir. Çalışmada meta-analiz yöntemi kullanılmıştır. Alanyazın taramasında 24 çalışmaya (25 etki büyüklüğü) ulaşılmıştır. Rastgele etkiler modeli kullanılarak analizler gerçekleştirilmiş olup yabancı dil öğretiminde öğrenen merkezli yöntemlerin öğrenenlerin derse yönelik tutumları üzerinde geniş ( $g=0.925$ , %95 GA [0,642-1,209],  $p<.0.000$ ) bir etkiye sahip olduğu ortaya çıkmaktadır. Çalışmada elde edilen etki büyüklüklerinin yayım yanlılığı Huni grafiği, Rosenthal Classic fail-safe N ve Orwin fail-safe N yöntemleriyle hem görsel olarak yorumlanmış hem de istatistiksel olarak test edilmiştir. Sonuç olarak yayım yanlılığı olmadığı tespit edilmiştir. Çalışmada yayım yılı, araştırmanın yürütüldüğü yer, yayım türü, uygulanan yöntem, dil beceri alanı, öğretim kademesi, uygulama süresi ve örneklem büyüklüğünün moderatör değişken olmasına karar verilmiştir. Yapılan analizler sonucunda yayım yılı, dil beceri alanı ve öğretim kademesinin etki büyüklüklerini farklılaştırmada etkili olduğu sonucuna ulaşılmıştır. Çalışmada ortaya çıkan dikkat çekici sonuçlardan biri deneysel uygulama süresi uzadıkça derse yönelik tutumu olumlu yönde artırmada daha etkili olduğu tespit edilmiştir.

**Anahtar Sözcükler:** Meta-analiz, Öğrenen merkezli yöntemler, Tutum

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## INTRODUCTION

The world has witnessed many changes during the last 30-40 years, covering a wide range of areas, from politics to technology, from social changes to cultural changes. These changes have brought about the leading needs of learning a foreign/second language. New businesses and opportunities emerging nationally and internationally, and school exchange programs offer better opportunities to individuals who can speak foreign languages. All of these require qualified individuals who have basic language skills such as reading, writing, speaking and listening, as well as other components of the language such as grammar, vocabulary and pronunciation. In this context, it is seen that countries have made changes in their curriculum over time in order to provide individuals with a better language education.

Keeping in mind the history of education in Türkiye, it can be said that one of the most important changes that can be expressed as radical is the curriculum that was developed in 2004 and put into practice in 2005. This new program has brought changes in the roles that teachers and students must undertake in the education environment. The teacher has moved from the position of directly transmitting information to a position of guiding students and showing them the ways to access the information. The new curriculum requires students to be active and autonomous learners in the learning environment by doing and living, in other words by experiencing and discovering knowledge and taking responsibility for their own learning. In 2012 academic year, with the changes made, foreign language education started to be provided from the 2<sup>nd</sup> grade (Ministry of National Education [MoNE], 2012).

In the Primary School English curriculum updated in 2018, the importance of students' developing a positive attitude towards the language, starting from the early stages, was emphasized. When English teaching curriculums are examined, it is underlined that the language should be taught in an authentic communicative environment, and it is stated that a fun and motivation-increasing learning environment should be provided in which students feel comfortable. As no single language teaching methodology in primary and secondary education is seen as flexible enough to meet students' needs and appeal to different learning styles, it is envisaged to adopt an eclectic mix of teaching techniques based on an action-oriented approach. In the curriculum that encourages learner autonomy, it is emphasized that students should see language as a means of communication. Therefore, authentic materials, drama and role playing, and hands-on activities should be implemented in the program to highlight the communicative nature of English (MoNE, 2018).

The changes made in the new curriculums can be said to have taken the constructivism approach into account, which is based on pragmatist philosophy. Constructivism is based on the philosophy that learners blend new knowledge with the previous one (Bada, 2015). It is the learner's construction of knowledge through both individual experience and social interaction (Candra & Retnawati, 2020). In constructivism, the teacher helps students through problem-solving and inquiry-based learning activities in which students gather and transfer their knowledge in cooperative learning environments. Constructivism transforms the student from a passive recipient of information into an active participant in the learning process (Shah, 2019). In constructivist teaching, the teacher provides a learning process in which students take responsibility for their learning and are encouraged to be autonomous (Barman & Bhattacharyya, 2015). In constructivism, the student shapes and self-regulates the learning and learning process.

The English curriculum, based on constructivism, particularly emphasizes the need for students to put their learning into practice in real life in order to support fluency, proficiency and language retention (MoNE, 2018). Moreover, it puts the learner at the center of the language learning process and adopts a teaching approach according to the learner's interests and needs. At this point, it can be argued that "collaborative learning", "project-based learning" and "drama" are methods that provide the student autonomy recommended in the program within the framework of the constructivist approach and allow the student to take responsibility of his own learning. A lot of evidence in the literature on English language teaching demonstrates that the aforementioned methods are learner-centered. For example, Badjadi (2020, p.9) point out that content-based, task-based, project-based and cooperative and

collaborative language teaching practices are among learner centered English language practices. Also, Khuvasanond (2013, p.15) refers to cooperative learning as one of the techniques often categorized under the learner centered approaches. Kokotsaki et al. (2016, p.1) clearly states that project-based learning is a student-centered instruction and it has such characteristics as providing students' autonomy, constructive investigation and collaboration. According to Fleming (2006), the fact that drama is learner-centered is out of question. Idogho (2016, p.62) asserts that drama in education is learner-centered and it depends on progressivism. Furthermore, he declares that the attention is taken away from teacher via drama and it creates a space for learners. Similarly, Gill (2016, p.241) highlights that being learner centeredness is among many remarkable features of drama such as being communicative, providing learner autonomy, promoting participation-based activities so on. Price-Rom (2008, p.162) underlines that cooperative learning demonstrates to be the most popular among all learner-centered approaches. Sirisrimangkorn (2018, p.14) expresses that both project-based learning and drama are learner-centered and contribute to learners' language learning. Yumurtacı & Mede (2021, p. 116) also states that creative drama ensures learners to be actors of their own learning process. Accordingly, Gonfa (2023, p.51) says that cooperative language learning can be put into effect in order to provide students with a more learner-centered environment in which they can actively participate in language learning.

The use of cooperative learning in teaching English provides a stimulating and supportive interaction environment for students with different levels of language proficiency (Ning, 2010). In cooperative learning environments, the learner makes corrections in the foreign language according to the verbal reactions he receives from his peers. In cooperative learning groups, the necessity of constantly using the target language paves the way for students to practice the language and learn by experience (Apple, 2006). Cooperative learning is among alternative methods and techniques to traditional teaching methods (Pesen & Bakır, 2016). Fried-Booth (2002) states that doing projects within the scope of project-based learning naturally integrates the English language with real life environments. Aryn (2021) asserts that the basic activities used in teaching English, such as role-playing through drama, enacting daily life scenarios, staging or imitating texts and dialogues, will greatly increase students' English speaking skills as well as their self-confidence.

The field of education is one of the areas where many studies are carried out to increase the educational quality. As a consequence of the studies carried out by the researchers in the scientific world, a large number of theses, articles, books and papers are published each day. The more the number of studies, the more necessary is the need for a more comprehensive and systematic synthesis of these studies (Basit & Deniz, 2020, p.102). At this point, it can be said that one of the most effective methods that can be used to synthesize the results of independent studies about the same subject is meta-analysis. According to Yıldız (2002) in any field of study, there are many studies conducted separately on a specific subject. This large number of studies makes it difficult to examine them at the same time and to reach the targeted information in them. Therefore, there is a need for a more detailed and broad research approach to make effective use of this knowledge, to interpret the results of these studies and to result in new studies. It can be argued that meta-analysis is a method that can be used to meet this need. It is thought that meta-analysis will bring together this huge set of accumulated information in the field of social sciences, allowing reliable results and more comprehensive interpretations to be made.

The present study is considered crucial as it allows a synthesis by integrating results of similar individual studies conducted to determine the effect of learner-centered methods on students' attitudes towards the lesson in English language teaching. This meta-analysis study will pave the way for meaningful comments by providing a broader and comprehensive view on the effect of learner-centered approaches in English language teaching on attitude towards the lesson. Determining the effect of learner-centered approaches on students' attitudes towards the lesson compared to traditional teaching methods with the method of meta-analysis will give clearer and more concrete ideas to both other researchers and educators who are practitioners of educational programs in terms of increasing the quality of teaching. It is believed that it can offer them a broader perspective. Thus, it is thought that autonomous learning environments where students are given responsibility for their own learning can be provided.

It is undeniable that the results of independently conducted studies, which deal with the effects of strategies, methods and techniques that center students, reveal important data for the literature. However, it is important to gather the results of the studies on these issues in different places and time periods and to determine the general trend. Similarly, Marzano et al., (2001) state that the results of one or more studies are not decisive for the effectiveness of a strategy or approach, and that the synthesized results will reveal better data on the effectiveness of the subject. Keeping in mind this point of view, it can be argued that these studies, both in our country and abroad, conducted at different times and by independent researchers on the effectiveness of student-centered methods, strategies and techniques in foreign language teaching will reveal a broader perspective rather than presenting the perspective of a single researcher or research.

There are many individual studies on the attitude towards the lesson in the field of English. In these studies, the effect of different kinds of factors have been investigated and various findings have been revealed. Although these studies have separate contributions to the literature, the number of studies that integrate them and examine the effect sizes is few. In other words, in the literature review covering meta-analysis studies in our country, it was determined that the studies on foreign language teaching and meta-analysis were very limited. During the literature review, only 11 studies by the following author (s) Batdı & Candan (2022), Çelebi (2018), Çelik et al., (2021), Dikmen (2021), Kansızoğlu (2017), Karabulut (2020), Kıymaz (2021), Sur (2022), Şan et al., (2020), Şimşek & Özaslan (2021), Tomakin & Yeşilyurt (2013) were found on this subject. However, it is clear that all of these studies examine the effects of methods and techniques used in language teaching on academic achievement. It was determined that none of these studies examined the attitude towards the lesson. In this respect, it can be stated that this study will make significant contributions to the literature on teaching English in our country. Therefore, meta-analysis of learner-centered studies in English language teaching is thought to be an important and worthwhile subject to search. Another aspect that distinguishes this meta-analysis study from the others is that it reveals the difference between the effectiveness of these methods in our country and abroad by integrating the effectiveness of cooperative learning, project-based learning and drama methods applied in English lessons in Türkiye and abroad. The present meta-analysis study also differs from other meta-analysis studies in that it deals with the learner-centered methods envisaged and highlighted in English language curriculums, integrates individual studies both in Türkiye and abroad, and examines the attitude towards English lesson.

The present study aimed to investigate the effect of learner-centered methods in English language teaching on students' attitudes towards the lesson through meta-analysis. "To what extent do learner-centered methods affect the attitudes of learners towards the lesson in studies on teaching English?" This is the primary question of this meta-analysis study. Within the framework of this basic problem, the following questions constitute the sub-problems of this study.

1. What is the effect size of learner-centered methods in teaching English on attitude towards English lesson?
2. Does the effectiveness level of learner-centered methods in teaching English statistically differ by the publication year, the place where the research is conducted, the publication type, the method applied, language skill areas (listening, speaking, writing, reading, vocabulary, etc.), class level, the length of application, the sample size?

## **METHOD**

### **Research Design**

Meta-analysis method was used in the present study, which aimed to reveal overall effect size by bringing together the results in experimental studies that examined the effect of learner-centered methods on the attitude towards English lesson. There are different definitions of meta-analysis in the literature. According to Glass (1976, p. 4), meta-analysis is a systematic method. Thus, it can be said

that the studies carried out within the scope of meta-analysis help to ensure the objectivity, reproducibility and systematicity of the results obtained in individual studies (Sanchez-Meca & Marin-Martinez, 2010). Previous findings can be brought together and summary statistics can be presented through meta-analysis (Qiu et al., 2023). The results of independent experimental and correlational studies can be combined with statistical methods within the scope of meta-analysis (Rahmati et al., 2021). According to Durlak and Lipsey (1991), meta-analysis is divided into two basic categories and each category consists of two sub-headings. These two main categories are group comparison meta-analysis and correlational relationship meta-analysis. In the present meta-analysis study, treatment effectiveness meta-analysis, which is one of the group comparison meta-analysis types, was used. Looking at the literature, it is seen that there are two statistical models in the meta-analysis method. One of them is the Fixed Effect Model and the other is the Random Effects Model. Random effects model was used in this meta-analysis study. Thalheimer and Cook (2002) effect size classification was taken as reference in the interpretation of effect size. The scope of the classification made by the researchers is wide and consists of 6 categories. Accordingly, the effect size is insignificant in the range of (-)0.15-0.14, small in the range of 0.15-0.39, medium in the range of 0.40-0.74, large in the range of 0.75-1.09. If it is in the range of 1,10-1.44, it is interpreted as very large, and if it is 1.45 and above, it is interpreted as a huge effect.

### **Data Collection Strategy**

It is important that the studies to be included in the meta-analysis don't go beyond the research limits and contain statistically necessary and useful data. However, reaching a large number of studies related to the research subject in the meta-analysis ensures that the most accurate results regarding the reliability and validity of the research are reached. At this point, databases/article sharing platforms were reviewed in detail at regular intervals by using the determined keywords so that no study remained unreachable within the scope of the research. For this purpose, firstly the titles and summaries of the studies to be included in the analysis were examined. Then, the method sections, especially the experimental process steps and the findings sections of the studies that were decided to be within the scope of the research were examined in detail. In the present meta-analysis study, studies conducted between the years 2005-2022 are included.

In this study, which was carried out to examine the effects of student-centered studies in English language teaching on students' attitudes towards English lesson, the keywords determined to reach the studies were used. For this purpose, Council of Higher Education National Thesis Center of Türkiye, Google Scholars, Education Resources Information Center (ERIC), Proquest Digital Dissertations, Elsevier/Science Direct, Emerald, Ulakbilim/EBSCO, Web of Science, Taylor & Francis, Dergipark, JSTOR, Springer, SAGE, Wiley Online Library databases and article sharing sites were searched.

While the literature was being searched, Turkish and English equivalents of keywords such as "cooperative learning", "collaborative learning", "drama", "drama technique", "drama method", "dramatization", "project-based learning" and "English", "English lesson", "English teaching", "English learning", "English language" were used in databases / article sharing sites to reach studies published in Turkish pages such as Council of Higher Education National Thesis Center, Ulakbilim, Dergipark." The search was carried out using AND, double quotes (" "), intitle, and year and subject limitations both in the study titles and in all dimensions of database/article sharing sites.

On the other hand, when searching databases such as ERIC, Elsevier/Science Direct, Web of science, "cooperative learning", "collaborative learning", "dramatization/dramatisation", "drama technique", "teaching with drama", "project based learning", "English language", "English", "English teaching", "English learning", "foreign language learning", "foreign language teaching", "second language learning" keywords were used with AND, double quotes (" "), intitle. It was scanned by making the necessary limitations both in the study titles and in all dimensions of the databases.

## Coding

The reliability of coding process is ensured during data evaluation stage by inter-rater reliability and sensitivity analyses. The data evaluation stage includes coding procedures of the data, determination of the variables to be important moderators and handling of the missing data (Petscher, 2010). The data of the individual studies obtained were coded by creating a coding form in the Excel program. In the coding phase, in addition to researcher, two researchers with Ph.D coded the studies. The Fleiss Kappa coefficient of agreement was calculated to determine how much agreement there was between the researcher and the other coders in total. Şen and Yıldırım (2020, p.24) state that inter-rater reliability can be calculated by using the Fleiss Kappa coefficient for three or more intercoder fit. It was determined that there was 0.968 agreement between coders. This value indicates that there is an almost perfect agreement between the coders according to the Landis and Koch (1977) classification.

## Inclusion criteria

The inclusion criteria of the studies to be used for meta-analysis in this study are given below.

The studies included in the analysis were published between 2005-2022. Literature review started on 10.01.2021 and the last review was conducted on 14.06.2022.

The studies were published in Turkish or English (Apart from these languages, studies whose full texts were published in other languages, but which reported statistical data in English to enable the calculation of the effect size, were also included.)

Pretest-posttest control group design was used in the studies.

One of the methods of cooperative learning, drama, and project-based learning should have been applied in the experimental group, and another method other than these methods should have been used in the control group.

The studies to be analyzed were studies examining students' attitudes towards the lesson in English class. The studies were to be those that would allow the calculation of the effect size, report the sample size (n), arithmetic mean (X) and standard deviation (sd) values of the pretest-posttest data of the experimental and control groups or present the raw data that would enable these values to be calculated. Studies carried out in Türkiye and/or abroad

Studies must be a master's thesis, doctoral dissertations, article, or conference paper.

In the drama method, studies stating that techniques such as creative drama, process drama, role playing and puppetry are used in the title, while in cooperative learning, studies stating that techniques such as think-pair-share, learning rings are applied were also included.

In studies with more than one experimental group, only the data of the experimental group to which the methods within the scope of the study were applied were included.

In studies where motivation, anxiety or foreign language class anxiety scales were used instead of the attitude scale, the data of the attitude sub-dimension towards the English lesson (if any) were also included in the study.

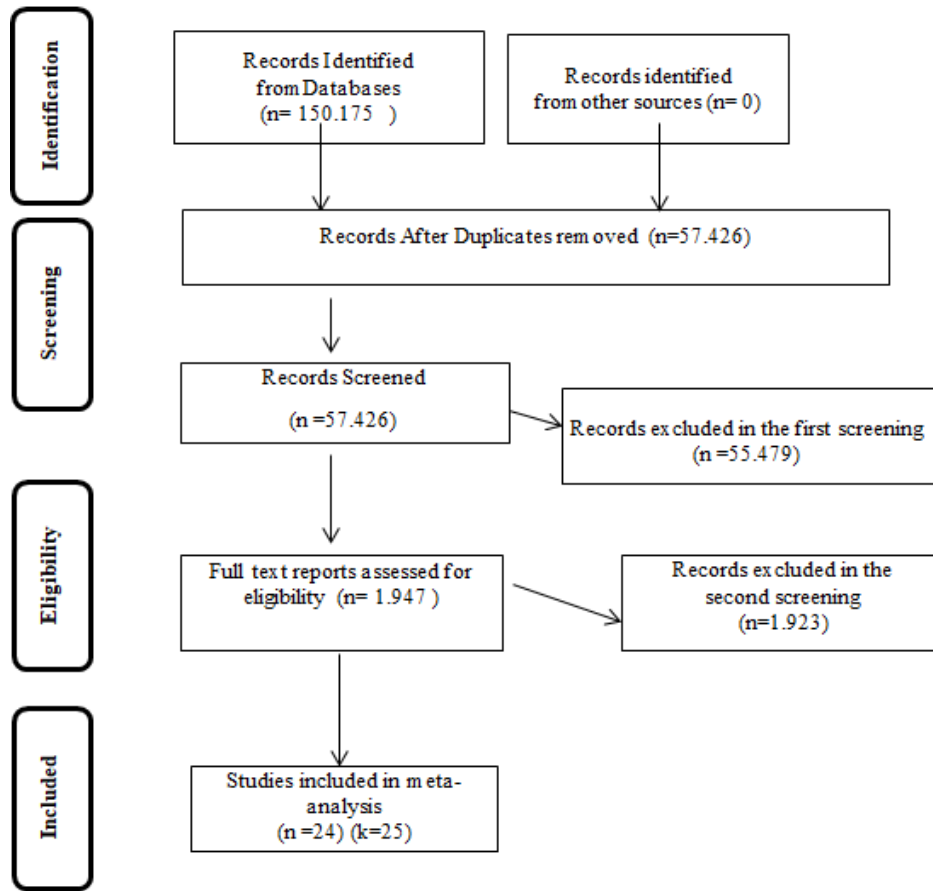
In studies dealing with different language skills (e.g, examining both speaking and listening skills in the same study) in the same studies, each language skill was included in the data set as a separate study.

In studies examining language skills, it has been observed that sometimes data on sub-dimensions of language skills are given separately (for example; in a study examining speaking skill, data on components of speaking skills such as fluency, pronunciation, vocabulary, grammar, and comprehension were reported separately). Such studies were included by combining data of the components of the relevant skill.

For studies with raw data, they were included by calculating the mean and standard deviation using appropriate statistical programs.

The number of studies that were included in the present meta-analysis after detailed review based on inclusion and exclusion criteria are shown in Figure 1. The flow chart in Figure 1 was adapted from the PRISMA guide by Moher et al., (2009).

**Figure 1.**  
PRISMA Flowchart



As seen in Figure 1, 150,175 studies were listed in the first stage as a result of the searches made in databases/article sharing sites using the keywords determined for the literature review. After excluding the common listed studies, 57,426 studies remained. These studies were first examined by scrutinizing their titles and abstracts to determine whether they were within the scope of this meta-analysis study, and studies outside the scope were eliminated. As a result of the review, 1,947 studies remained to be examined in a more elaborate manner. The titles, abstracts, method, and findings sections of these studies were examined in detail again, taking into account the inclusion and exclusion criteria, and a total of 24 studies that could be included for attitude towards the course were identified in the present meta-analysis study. Most of the excluded studies were qualitative (see Abraham, 2018; Costello, 2006; Dimililer & Atamtürk, 2019; Farzaneh & Nejadansari, 2014; Güryay, 2015; Koç, 2018; Thitivesa & Essien, 2013), while others were found to be studies that did not report pretest and/or posttest data and did not have a control group (see Ariffin, 2021; Mejang, 2008; Riswandi, 2018; Shahamat & Mede, 2016). Some studies were written in a different language other than Turkish and English (see Namsoon, 2005; Rofek & Febrianto, 2018) and were taught in a different foreign language class other than English (see Ammar & Hassan, 2018; Dobao, 2012; Landron et al., 2018).

### Dependent and independent variables of the study

The effect sizes obtained from the studies included in the meta-analysis constitute the dependent variables of the present study. These variables are the effect size of student-centered methods in foreign language teaching on students' attitudes towards English lesson.

The independent variables, also called study characteristics, are the study characteristics that emerge during coding, and they also play a role in shaping the sub-problems of the research. The independent variables of the present study are listed below:

Publication Year

Research Place (Türkiye/Abroad)

Method (Cooperative learning, drama and project-based learning)

Publication Type (Journal article, Undergraduate Thesis, MS Thesis, Ph.D Dissertation, Conference Presentation)

Education Level (Primary, secondary, high school, University, Special Course/Language Institute)

Duration of Experimental Application (in week)

Language Skill (reading, writing, speaking, listening, vocabulary, grammar, comprehensive English)

Sample Size.

Based on the literature, it is seen that there are different approaches for categorical sub-variables in moderator analyzes that there should be at least 4 studies (Fu et al., 2011) or 2-8 studies (Pincus et al., 2011) in each subgroup. In the present study, it was decided that there should be at least 2 studies in each sub-group in order to reflect the overall effect size more clearly and to prevent data loss.

### **Publication bias**

In the present study, funnel plot was used only for visual interpretation, and publication bias was tested with statistical methods such as Rosenthal's Fail-safe N and Orwin's Fail-safe N number method.

### **Data Analysis**

In the present study, since the measurement tools used in the primary studies included in the present meta-analysis were different from each other and the experimental and control groups were compared, the treatment effectiveness meta-analysis from the group difference meta-analysis was used. It turns out that the studies included in the present meta-analysis are heterogeneous since they aim to examine different language skills in different countries, at different education levels, by using different measurement tools. Therefore, the statistics were carried out according to the Random Effects Model, since the study is suitable for the Random Effects Model by nature. In addition, the heterogeneity test was also performed for the selection of the effect model. The effect size index has been shown to be biased upward when obtained in small sample sizes, especially samples less than 20 (Hedges, 1981 as cited in Şen & Yıldırım, 2020, p. 36). Hedges presented a correction for this bias and called this formula the "g" index. Thus, Hedge's "g" was used as the effect size value in the study, and Thalheimer and Cook's (2002) effect size classification values were taken into account in the interpretation of the effect size. The Microsoft Excel program was used to calculate the reliability between the encoders, and the SPSS 26.0 package program was used to calculate the Fleiss Kappa value. The analyzes of the overall effect size and the dependent variables of the study were made with the Comprehensive Meta-Analysis (CMA) program. The significance level was chosen as 0.05 in all statistical calculations. In studies where raw data were reported, the internet database <https://standarddeviationcalc.com/> was used to calculate the arithmetic mean and standard deviations of the experimental and control groups. Q and I2 statistics were used for the heterogeneity test.

## **RESULTS AND DISCUSSION**

### **Results Related to the Overall Effect Sizes**

The data obtained from individual studies on attitude towards English lesson were analyzed to calculate the overall effect size, 95% confidence interval values, and Q and p values are given in Table 1.



**Table 1.**

*Overall Effect Sizes and Confidence Interval Lower and Upper Limit Values by Effect Model*

Effects Model	k	Hedge's g	%95 Confidence Interval (CI)		Q-value	p
			Lower Limit	Upper Limit		
Fixed Effect Model (FEM)	25	0.768	0.660	0.876	160.463	0.000
Random Effects Model (REM)	25	0.925	0.642	1.209		

As seen in Table 1, the obtained effect sizes are between 0.876 upper limit and 0.660 lower limit of the 95% confidence interval according to the fixed effect model. Based on Hedges's g effect size calculation, the overall effect size was calculated as  $g=0.768$ . However, according to the results of the heterogeneity test ( $Q=160.463$ ;  $p<.05$ ) performed to determine whether the fixed effect model was suitable for this meta-analysis study, it was concluded that the distribution was not homogeneous but heterogeneous. Therefore, in the present study, the random effects model was preferred instead of the fixed effect model. According to the random effects model, the overall value of the effect sizes was calculated as  $g=0.925$ , with the upper limit of the 95% confidence interval being 1.209 and the lower limit being 0.642. It turns out that the effect size obtained according to the random effects model is a large effect according to the Thalheimer and Cook (2002) classification. Thus, it can be said that learner-centered methods in English language teaching have a large and positive effect on students' attitudes towards English lesson.

Upon reviewing the literature, it is evident that there are studies that examine the effectiveness of student-centered methods and techniques on students' attitudes towards the lesson. For instance, Kural (2020) concluded that the effect size of science teaching based on the theory of multiple intelligences on the attitude towards the lesson was 1.978, which is considered large. Kanadlı (2016) also found the effect of instructional designs based on learning styles on attitudes as  $d=1.113$ . Yağan (2022) discovered that student-centered methods, techniques and strategies had a positive effect on student attitudes at the level of  $g=0.686$ . Similarly, in one dimension of his study, Kaşarcı (2013) determined the effect of project-based learning approach on students' attitudes as  $d=0.730$ . Topan (2013) found in her study that student-centered methods have a positive effect on the attitude towards the mathematics lesson with an effect size level of 0.7427. In another study, Özdemirli (2011) investigated the effect of cooperative learning, which was one of the variables of his study, on the attitude towards mathematics and determined the effect size as  $d=0.16$ , albeit low. Tatal and Yazar (2022) revealed similar results in their study on active learning. The researchers found that active learning promoted positive attitudes towards the course with an overall effect size of  $g=0.757$ . Tatal and Yazar (2021) meta-analytically examined the effect of flipped classroom-one of the student centered methods- on academic achievement, learning retention and attitude towards the course. Based on 17 studies for attitudes, they calculated overall effect size as  $g=0.406$ . In addition, Toraman and Demir (2016) studied the effect of constructivism on attitudes towards lesson. They discovered that the overall effect size obtained from 43 independent studies as  $g=0.728$ . Capar and Tarim (2015) investigated the efficacy of the cooperative learning method on mathematics achievement and attitude. They analyzed 36 effect sizes obtained from 26 independent studies and found out the cooperative learning to have a small but positive effect with an effect size of  $d+=0.16$ . The effect sizes in all these studies can be summarized as large, medium and low. However, it can be said that student-centered alternative methods affect students' attitudes towards English lesson positively, and it can be argued that the findings obtained from these studies support the findings of the present study.

### **Results Related to the Homogeneity and Heterogeneity Test**

In the present meta-analysis study, an analysis was made to determine whether the effect size values calculated for individual studies related to the attitude towards English lesson were homogeneously distributed, and the Q value, degree of freedom (df), p value and I2 value of the findings obtained are given in Table 2.

**Table 2.**  
Heterogeneity Test

Q-value	df (Q)	p	I-squared
160.463	24	0.000	85.043

As a result of the heterogeneity test performed in Table 2, the statistical value of Q was calculated as 160.463. From the  $\chi^2$  table, at 95% significance level, 24 degrees of freedom were found to be 36.415. This value showed that the p-value at 24 degrees of freedom at the  $\alpha=0.05$  level was .00001. This indicated that the result was statistically significant at the 0.05 level. In addition to the heterogeneity result obtained from the Q-statistic, the I2 statistics was also used. According to the I2 formula, the I2 value was  $160.463 - (25-1)/160,463 \times 100 = 85.043\%$  in the present study. This demonstrated a high level of heterogeneity. According to both Q-statistics and I2-statistics, there was a statistically significant heterogeneity in the data set regarding the attitude towards English lesson. Thus, further analysis can be done to reveal the source of this heterogeneity, that's moderator or sub-group analysis, and the analysis can be done using random effects model.

### Results Related to the Publication Bias

In the present meta-analysis study, funnel plot analysis was first performed to visually test the possibility of publication bias of the effect sizes obtained from individual studies on attitude towards the lesson. The funnel plot in Figure 2 showed 25 effect sizes obtained from 24 individual studies.

**Figure 2.**  
Funnel Plot

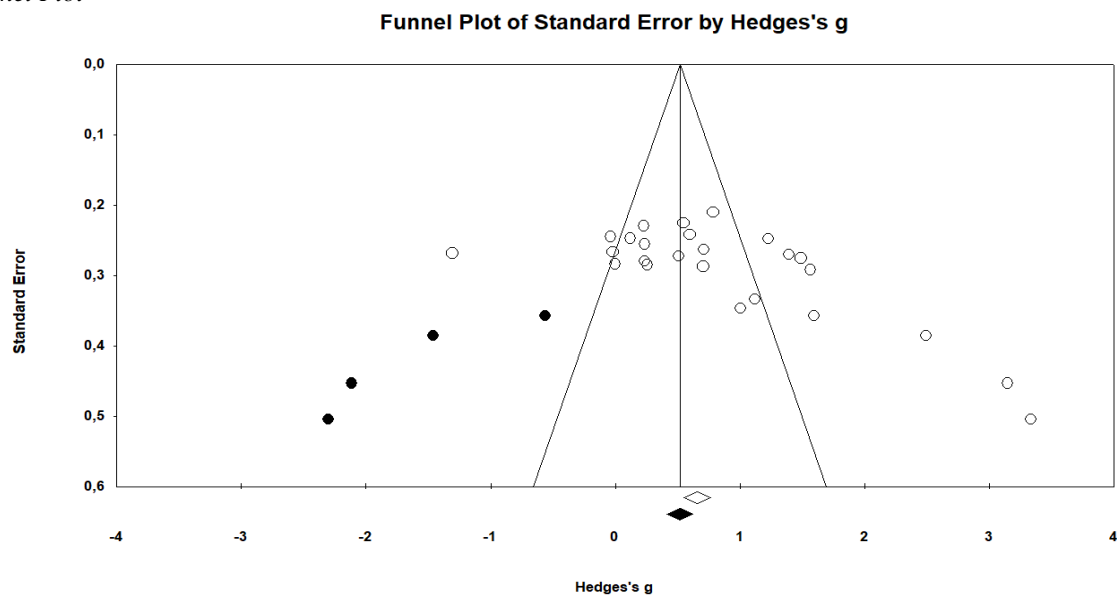


Figure 2 illustrated that the studies were generally within the lines of the funnel plot and were distributed to the right and left of the vertical line of the funnel plot. Some studies were spread outside the funnel, indicating a relatively asymmetrical funnel. Four dark colored, virtual studies were added to correct the publication bias. However, the study's overall effect size (represented by the hollow diamond) and the general effect size after trimming and filling (represented by the filled diamond) were very similar. Thus, further statistical analysis was conducted to test publication bias. So, Rosenthal's Fail-safe N and Orwin's Fail-safe N methods were also used to statistically test this visual interpretation. Table 3 showed the findings regarding the Rosenthal's Fail-safe N.

**Table 3.**

*Rosenthal Classic Fail-Safe N Result*

Rosenthal Classic fail –safe N	
Z-value for observed studies	15.24675
p-value for observed studies	0.0000
Alpha	0.05
Tails	2
Z-value for alpha	1.95996
Number of observed studies	25
Number of missing studies that would bring p-value to > alpha	1488

Rosenthal Fail-safe N results in Table 3 showed that the z value obtained from the 25 effect sizes included was 15.24675 and the p value was 0.000. Number of missing studies that would bring p-value to > alpha was 1488. This meant that 1488 studies with 0 or negative directions were needed to invalidate the effect of learner-centered methods on learners' attitudes towards the English lesson. The fact that the number of studies included in the meta-analysis was much smaller than the Fail-safe Number indicated that there was no publication bias. Another statistical method used to test publication bias was Orwin's Fail-safe Number. The findings regarding this statistic were shown in Table 4.

**Table 4.**

*Orwin Fail-Safe N Result*

Orwin fail –safe N	
Hedges's g in observed studies	0.76785
Criterion for 'trivial' Hedges's g	0.01
Mean Hedges's g in missing studies	0.000
Number of missing studies needed to bring Hedges's g under 0,01	9592

The study found that it would require 9592 studies with 0 or negative effect size to reduce the overall effect size observed in Table 4 from 0.76785 to 0.01. This number is approximately 384 times higher than the total number of effect sizes (25) and is practically unattainable. Therefore, the results suggest that there is no publication bias.

As a result of the analysis of the data obtained from the individual studies, the forest plot (see Figure 3) was also examined in order to see the effect sizes of the studies. 25 effect size values, standard error, variance, lower and upper limit values in the 95% confidence interval, z and p values obtained from 24 studies related to attitude towards the lesson were included in the forest plot. In the present study, the effect sizes varied between -0.034 and 3.339 according to the forest plot obtained for the attitude towards the lesson. The findings regarding the negative and positive effect sizes in the forest plot were shown in Table 5.

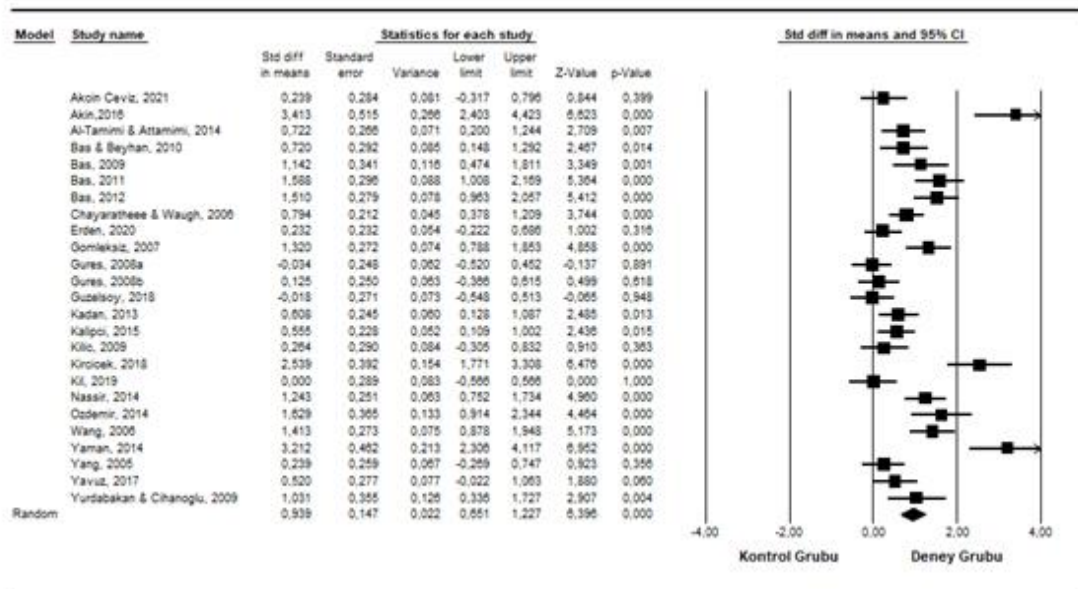
**Table 5.**

*The Distribution of Effect Sizes According to Effect Size Direction*

Effect Size Direction	Number Of Effect Size (f)
Positive (+)	23
Zero/Neutral (0)	0
Negative (-)	2
Total	25

Table 5 showed that two effect sizes were negative. From this point of view, it can be stated that in negative studies in which learner-centered methods were used, the experimental process revealed a result against the experimental group students' attitudes towards the lesson. The Forest plot showing the effect sizes is shown in Figure 3.

**Figure 3.**  
Forest Plot



When examining individual studies that determined negative effect sizes, it can be concluded that this outcome may have resulted from two factors. The first factor might be due to the fact that the teachers in the experimental and control groups were different during the experimental process. As a matter of fact, when the study by Güreş (2008) was examined, it was discovered that the same teacher handled the experimental process in all the experimental groups and in one of the control groups, and in the remaining control group a different teacher carried out the teaching process. The second factor may have been due to the fact that the groups could not be selected randomly and the control group students witnessed this while the experimental application environment was being prepared, and they might have been more motivated against the experimental group. When examining the study by Güzelsoy (2018), this situation arose. The remaining 23 effect sizes were found to be positive. Based on these findings, it can be said that learner-centered methods were more fruitful than the traditional methods in positively changing the learners' attitudes towards English language learning.

### Results Related to the Effectiveness Level of Effect Sizes by Publication Year

When examining the years of individual studies that have looked at the effect of learner-centred methods on attitudes towards English teaching, it was found that only one study was conducted in some years. Therefore, the data obtained for moderator analysis were grouped according to year intervals. As a result of this grouping, the year ranges were divided into 3 groups, namely 2005-2010, 2011-2016 and 2017-2021. Although this meta-analysis study covered the first half of 2022, no studies on the subject were found in 2022. The results of the analysis performed to determine whether the effectiveness level differed according to the publication year in terms of attitude towards English lesson were given in Table 6.

**Table 6.**  
Effectiveness Level of Effect Sizes by Publication Year

Publication Year	k	Hedges's g	95% CI		Heterogeneity		
			Lower Limit	Upper Limit	Q-value	df (Q)	p
2005-2010 years interval	10	0.676	0.351	1.001			
2011-2016 years interval	9	1.494	0.973	2.014			
2017-2021 years interval	6	0.536	-0.058	1.129			
Total Between					8.034	2	0.018

According to the results of the analysis given in Table 6, it was seen that the highest effect size belonged to the studies conducted between 2011 and 2016 with a value of  $g=1.494$ . This effect size value turned out to be an enormous effect size. It can be said that the effect sizes of the studies conducted between 2005-2010 ( $g=0.676$ ) and 2017-2021 ( $g=0.536$ ) were medium-level effect sizes. However, the data obtained from the heterogeneity test were evaluated to determine whether the results obtained revealed a statistically significant difference between the groups. It was seen that the obtained  $Q=8.034$  value exceeds the critical value of 5.991 with 2 degrees of freedom in the  $X^2$  table, and the p value was less than .05. It was striking that the distribution was heterogeneous according to the publication year, and there was a statistically significant difference between the groups in terms of effect sizes ( $Q=8.034$ ;  $p<.05$ ). The statistically significant p-value indicated statistically significant heterogeneity in effect sizes between subgroups.

It is noteworthy that the number of studies on attitude towards English lessons has decreased steadily over the years. Therefore, it can be inferred that future studies will likely not focus on examining attitudes towards English lessons.

### Results Related to the Effectiveness Level of Effect Sizes by Place of the Research

Individual studies were divided into two groups as studies conducted in Türkiye and abroad. It was determined that the majority of the attitude studies towards English lesson were carried out in Türkiye. It was tested whether the effect sizes differed according to the place variable where the experimental application was conducted. The effect size, 95% confidence interval values and heterogeneity test results were given in Table 7.

**Table 7.**

*Effectiveness Level of Effect Sizes by Place of the Research*

Research Place	k	Hedges's g	95% CI		Heterogeneity		
			Lower Limit	Upper Limit	Q-value	df(Q)	p
Türkiye	20	0.951	0.599	1.304			
Abroad	5	0.869	0.483	1.254			
Total Between					0.096	1	0.757

Table 7 shows that learner-centered methods applied in both Türkiye and abroad had a significant impact on attitudes towards English lessons. The studies that were conducted abroad were carried in the following countries: Yemen ( $n=1$ ), Thailand ( $n=1$ ), Taiwan ( $n=2$ ) and Palestine ( $n=1$ ). However, it was clear that the effect size of the studies conducted in Türkiye ( $g=0.951$ ) was larger than the effect size of the studies conducted abroad ( $g=0.869$ ). It is still possible to state that learner-centered methods had a large and positive effect on learners' attitudes towards English lesson, regardless of the place where the research was conducted. Heterogeneity test results were examined to determine whether there was a significant difference between the groups. According to these results, the value of  $Q=0.096$  was well below the critical value of 3.841 with 1 degree of freedom in the  $X^2$  table, and the p-value was greater than .05. From this point of view, it can be argued that there was no significant difference between the groups in terms of the place where the research was conducted ( $Q=0.096$ ;  $p>.05$ ). The moderator analysis showed that the combined effect size values across research place were not statistically significantly different. Thus, it was determined that the variance between research place was insignificant.

### Results Related to the Effectiveness Level of Effect Sizes by Publication Type

Primary studies reached for this meta-analysis study were grouped as article, MS thesis, Ph.D Dissertation and conference paper to calculate the effect size according to the publication type moderator. However, only 1 study was found in the conference publication type. Since no comparison can be made with only 1 study and the study will only reflect the current situation, the conference paper

was excluded while conducting the moderator analysis. It was tested whether the effect sizes differed according to the publication type variable. The effect size, 95% confidence interval values, heterogeneity test results were given in Table 8.

**Table 8.**  
*Effectiveness Level of Effect Sizes by Publication Type*

Publication Type	k	Hedges's g	95% CI		Heterogeneity		
			Lower Limit	Upper Limit	Q-value	df(Q)	p
Ph.D Dissertations	3	1.551	0.114	2.988			
Journal Article	7	1.132	0.863	1.400			
MS Thesis	14	0.724	0.335	1.112			
Total Between					3.422	2	0.181

According to the results of the analysis given in Table 8, it was evident that the highest effect level was obtained from the studies conducted in Ph.D Dissertations with a value of  $g=1.551$ . This effect value was a large effect size. At this point, it is noteworthy that all three of the Ph.D Dissertations were applied at tertiary level. It turned out that the effect size obtained from the journal article publication type also had a very large effect size with a value of  $g=1.132$ . The effect size of MS theses was a medium level effect with a value of  $g=0.724$ . When the MS theses included in the present analysis were examined, it was considered remarkable that 7 of the 14 studies, that's half of them, were conducted at the high school level. Despite the large number of master's thesis studies, the effect size was relatively lower compared to other publication types. There could be a number of reasons for this result. First, the students at high school level might not yet have fully adapted to the education level they were in due to the fact that they had just come from the secondary school level. Second, the students at this level were preparing for the university entrance exam, which was a higher education level. However, despite all this, it can be argued that, regardless of the publication type, learner-centered methods generally affected learners' attitudes towards English lesson in a large and positive way. According to these results, the value of  $Q=3.422$  was below the critical value of 5.991 with 2 degrees of freedom in the  $X^2$  table, and the p value was greater than .05. From this point of view, it can be said that there was no statistically significant difference between the groups in terms of publication type ( $Q=3.422$ ;  $p>.05$ ). The moderator analysis showed that the combined effect size values across publication type were not statistically significantly different. Thus, it can be argued that students' attitudes towards English lesson don't change according to publication type.

The findings in study by Demirel and Dağyar (2016) can said to be in line with the findings in the present study. The researchers examined the effects of problem based-learning on attitude. They included 47 independent studies through literature review. They classified their studies as published and unpublished studies, which was one of the moderators of their study. They found that type of study moderator was not statistically significant in differentiating the effect sizes ( $Q= 0.03$ ;  $p=0.85$ ). However, there are studies in the literature that have contradictory results with this finding. Bakioğlu and Göktaş (2019) found that the effect sizes obtained from the publication type moderator resulted in a significant difference between the groups.

### Results Related to the Effectiveness Level of Effect Sizes by Method

In order to determine whether the effect size values differ according to the method applied in the experimental group, a moderator analysis was performed and the obtained effect sizes, 95% confidence interval values, and the findings of the heterogeneity test were presented in Table 9.

**Table 9.**  
*Effectiveness Level of Effect Sizes by Method*

Method	k	Hedges's g	95% CI		Heterogeneity		
			Lower Limit	Upper Limit	Q-value	df (Q)	p
Cooperative Learning	15	0.695	0.413	0.977			
Drama	6	1.129	0.319	1.940			
Project Based Learning	4	1.601	0.793	2.408			
Total Between					4.900	2	0.086

As seen in Table 9, the method with the largest effect size was the project-based learning method with a value of  $g=1.601$ , and this value was an enormous effect size. It can be stated that drama method had a large effect size ( $g=1.129$ ) in changing the attitude towards the lesson in a positive way. At this point, the fact that all of the studies in which drama method was applied were MS theses was considered to be remarkable. Furthermore, it is noteworthy that the use of drama was not limited to primary school levels. The studies reviewed included four at high school level, one at secondary school level, and one at tertiary level. This indicates that drama-based activities were enjoyed by adolescent and young adult students, which helped foster a positive attitude towards English. Although it was seen that the cooperative learning method had a relatively lower effect than the other two methods, this effect size ( $g=0.695$ ) was a medium level effect size and was effective in developing a positive attitude towards English. Based on these findings, it is obvious that all three methods affected students' attitudes towards English lesson positively.

According to these results, the value of  $Q=4.900$  was below the critical value of 5.991 with 2 degrees of freedom in the  $X^2$  table, and the p value was greater than .05. From this point of view, it can be said that there was no significant difference between the groups in terms of the method applied ( $Q=4.900$ ;  $p>.05$ ). The moderator analysis showed that the combined effect size values across three methods were not statistically significantly different. Therefore, it can be said that the difference in the effect sizes of the primary studies is not explained by the method moderator.

Similar results were observed in other studies in literature. For example, Bakioğlu and Göktaş (2019) investigated the effect of cooperative learning method on attitude. In their study, they found that cooperative learning affects attitude at the level of  $g=0.445$ . Similarly, Kyndt et al., (2013) found that face-to-face cooperative learning had a low but positive effect on the attitude towards the lesson. In the study conducted by Toraman and Ulubey (2016), it was found that creative drama method had a positive effect on the attitude towards lesson with an effect level of 0.433. In the study conducted by Ayaz and Söylemez (2016), it was determined that project-based learning had an effect size of 0.997 on the attitude towards science lesson. Karakuş and Öztürk (2016) found that cooperative learning had a small but positive effect ( $d=0.210$ ) on students' attitudes in science teaching. Turgut (2018) also calculated the effect of cooperative learning on mathematics attitude as  $g=0.490$ . It can be said that the effect sizes obtained from these studies on attitudes conducted in different lessons were generally at a medium level.

### Results Related to the Effectiveness Level of Effect Sizes by Language Skills

Data obtained from individual studies on attitude towards the lesson were grouped according to language skill areas. Since there was just 1 study on writing skills, this study was not included in the moderator analysis. On the other hand, studies that examined variables such as critical thinking and reflective thinking skills rather than language skill areas were also excluded from the analysis. It was analyzed whether learner-centered methods generated a significant difference in affecting English language skills in terms of attitude. The obtained effect size values, 95% confidence interval values and heterogeneity test results were shown in Table 10.

**Table 10.**  
*Effectiveness Level of Effect Sizes by Language Skills*

Language Skill	k	Hedges's g	95% CI		Heterogeneity		
			Lower Limit	Upper Limit	Q-value	df(Q)	p
Grammar	4	0.976	0.210	1.742			
Comprehensive English	7	0.998	0.687	1.308			
Vocabulary	2	-0.009	-0.390	0.372			
Speaking	4	1.029	0.025	2.032			
Reading	3	0.793	0.072	1.514			
Total Between					17.691	4	0.001

Table 10 showed that learner-centered methods were effective on the attitude towards speaking skill with the highest effect size value ( $g=1.029$ ) in English lesson. When the methods applied in primary studies examining speaking skill were examined, it was determined that all three methods within the scope of this meta-analysis study were applied. So, it can be stated that these learner-centered methods affected learners' attitudes towards lesson in a large and positive way. Although the effect size of grammar ( $g=0.976$ ), comprehensive English ( $g=0.998$ ) and reading ( $g=0.793$ ) skills were relatively lower compared to speaking skill, the effect size of these skills was also large. The striking effect size in the table was the effect size obtained for the vocabulary skill. According to the data obtained, the effect size of the vocabulary skill was  $g= -0.009$ , which was an insignificant effect size according to the Thalheimer and Cook (2002) classification. Moreover, the finding of the effect size of the vocabulary skill showed that the experimental intervention resulted in a negative result for the students in the experimental group on the students' attitudes towards learning vocabulary. Scrutinizing the individual studies examining the vocabulary skill, it was discovered that in one study, the groups were assigned by the researcher with a random method, and in the other study, the groups were assigned by the school administration, and therefore the equivalence of the experimental and control groups could not be ensured. Moreover, in this study, during the preparation of the classroom environment where the experimental intervention was going to be carried out, some student desks were moved to the school corridor, so it is estimated that the control group students who saw this might have been more motivated against the experimental group. It can be stated that these two points caused results against the experimental group in the mentioned study. However, despite all this, it can be argued that learner-centered methods had a large and positive effect on language skills in terms of attitude towards English lesson.

According to these results, it was determined that the value of  $Q=17.691$  exceeded the critical value of 9.488 with 4 degrees of freedom in the  $X^2$  table and the p value was less than .05. From this point of view, it can be said that there was a significant difference between the groups in terms of language skill area ( $Q=17.691$ ;  $p<.05$ ). The moderator analysis showed that the combined effect size values across language skills were statistically significantly different and there is a high heterogeneity between effect sizes. Thus, it was determined that the variance between language skills was significant.

### Results Related to the Effectiveness Level of Effect Sizes by Education Level

It was analyzed whether learner-centered methods constituted a significant difference in terms of attitude at the teaching level. The obtained effect size values, 95% confidence interval values and heterogeneity test results were shown in Table 11.



**Table 11.**  
*Effectiveness Level of Effect Sizes by Education Level*

Education Level	k	Hedges's g	95% CI		Heterogeneity		
			Lower Limit	Upper Limit	Q-value	df(Q)	p
Primary School	3	0.244	-0.177	0.665			
Secondary School	5	0.793	0.332	1.253			
High School	9	1.125	0.526	1.724			
University	8	0.083	0.056	1.606			
Total Between					8.623	3	0.035

Table 11 demonstrated that the education level in which learner-centered methods were most effective in developing positive attitudes towards the English lesson was high school with  $g=1.125$ , and this effect size was a very large effect. It was seen that the studies had a large effect ( $g=0.793$ ) on the attitudes of the students towards the lesson at the secondary school level. On the other hand, the effect size obtained for primary school level was positive but a small effect ( $g=0.244$ ). At the university level, learner-centered methods had the lowest effect size ( $g=0.083$ ) in increasing students' attitudes towards the lesson. Although the effect size was positive, it was not significant.

The result of the heterogeneity test was estimated in order to determine whether the effect sizes obtained created a statistically significant difference between the groups. Accordingly, the value of  $Q=8.623$  exceeded the critical value of 7.815 at 3 degrees of freedom in the  $X^2$  table, and the p value was less than .05. Therefore, there was a significant difference between the groups ( $Q=8.623$ ;  $p<.05$ ). Based on this finding, it can be argued that Q-value for the effect sizes for education level variable was statistically meaningful and effective on the heterogeneity of effect sizes. Similarly, in Ayaz and Söylemez's (2016) studies, it was found that project-based learning was effective in differentiating effect sizes between subgroups for the variable of education level ( $p=.009$ ).

In this study, it was determined that the learner-centered methods among the education levels had the highest effect at high school level. In the meta-analysis conducted by Topan (2013) in the related literature, the attitude of student-centered methods towards the mathematics lesson was effective on the participants in the secondary education level (1.1539) with the highest number of effect sizes.

### Results Related to the Effectiveness Level of Effect Sizes by Duration of the Experimental Application

In individual studies, it was determined that experimental intervention times were expressed in different ways such as month, week, term, academic term, academic year, session. Taking into account the literature and the fact that the experimental implementation period was mostly stated in weeks in the studies, it was thought that expressing these periods with a common time expression would be more appropriate and more useful for analysis. Therefore, the application period was specified in weeks. Moderator analysis was carried out to determine whether the effect size values differed significantly in terms of the duration of the experimental application. The findings regarding the effect size, 95% confidence interval and heterogeneity test were given in Table 12.

**Table 12.**  
*Effectiveness Level of Effect Sizes by Duration of the Experimental Application*

Duration of the Experimental Application	k	Hedges's g	95% CI		Heterogeneity		
			Lower Limit	Upper Limit	Q-value	df(Q)	p
4-7 weeks	13	0.806	0.487	1.126			
8-10 weeks	7	0.982	0.241	1.722			
12-18 weeks	5	1.232	0.584	1.881			
Total Between					1.384	2	0.501

Table 12 showed that learner-centered methods were effective on the attitude towards the lesson with the highest effect size value ( $g=1.232$ ) in terms of application duration between 12-18 weeks and this effect size value had a very large effect size. Considering these studies, it was noteworthy that 4 out of 5 studies were applied at the university level. From this point of view, two points could be underlined. The first was that when learner-centered methods were applied at the university level, learners' attitudes towards the English lesson positively changed. Secondly, such affective characteristics as attitudes that are resistant to change, do not change in a short time, and longer experimental applications should be planned to change them. As a matter of fact, when the effect sizes between 4-7 weeks ( $g=0.806$ ) and between 8-10 weeks ( $g=0.982$ ) were examined, it was determined that they had a smaller effect size compared to the period between 12-18 weeks. Experimental interventions lasting 4-7 weeks seemed to have the least effect size.

The result of the heterogeneity test was evaluated in order to determine whether the effect sizes obtained created a significant difference between the groups. Accordingly, the  $Q=1.384$  value was well below the critical value of 5,991 at 2 degrees of freedom in the  $X^2$  table, and the p value was greater than .05. Therefore, there was no significant difference between the groups ( $Q=1.384$ ;  $p>.05$ ). The moderator analysis showed that the combined effect size values across duration of the experimental application were not statistically significantly different. Just as Delen and Sen (2023) expressed, statistically non-significant result may occur due to unevenly distributed cells.

In the present meta-analysis, it was tested whether the attitude towards the lesson changed according to the length and shortness of the experimental procedure. It was determined that keeping the experimental application period longer would be more effective in changing a characteristic resistant to change, such as attitude. However, there was a study in the literature that contradicted this. Topan (2013) revealed in her study that a very short period of time, such as 2-4 weeks, affected the attitude towards the lesson with an effect size level of 1.4565. It was understood that this finding in Topan (2013) study was also in contrast to the finding in Bakioğlu and Göktaş (2019) studies. In the studies of Bakioğlu and Göktaş (2019), it is revealed that the studies with an experimental application period of 0-4 weeks have a small effect on the attitude towards the lesson with an effect size of 0.121. Based on the findings obtained from the literature and the present meta-analysis study, it can be said that when the experimental application period was long, it was more effective on the attitude towards English lesson.

### Results Related to the Effectiveness Level of Effect Sizes by Duration of the Experimental Application

The study participants were grouped to ensure data integrity and facilitate moderator analysis. For this purpose, the participants were divided into four groups. A moderator analysis was performed to determine whether the effect size values differed significantly in terms of sample size, and the obtained effect sizes, 95% confidence intervals and heterogeneity test results are given in Table 13.

**Table 13.**  
*Effectiveness Level of Effect Sizes by Sample Size*

Sample Size	k	Hedges's g	95% CI		Heterogeneity		
			Lower Limit	Upper Limit	Q-value	df(Q)	p
1-20 participants	4	1.704	0.831	2.577			
21-30 participants	11	0.848	0.352	1.344			
31-40 participants	8	0.824	0.414	1.234			
41 and above participants	2	0.516	-0.029	1.062			
Total Between					5.115	3	0.164

Table 13 showed that learner-centered methods were more effective on the attitude towards the lesson in sample groups between 1-20 with the largest effect size of  $g=1.704$ . This effect size turned out to be an enormous effect. Considering which method was applied with a sample size of 1-20, it was determined that three of the 4 studies had a cooperative learning method. From this point of view, it

could be argued that when the cooperative learning method was applied in small sample groups, it had a greater effect on the attitude towards the lesson. When the other sample groups were examined, it became obvious that learner-centered methods had a large effect on the attitude towards the lesson in groups with samples between 21-30 and 31-40. In the sample groups of 41 and above, it was discovered that the learner-centered methods were moderately effective on the attitude towards the lesson with an effect size of  $g=0.516$ . This effect size value was a slightly lower effect size when compared to other sample groups. Looking at the method applied in this sample group, it was evident the cooperative learning method was applied and in one study the sample was divided into 4 groups of 12 people and in the other study the sample was divided into groups of 3 or 4 people. From this point of view, the fact that the large groups in the first study and the large number of groups in the other study may have made it difficult to control all the learners during the experimental intervention process and the practitioners may have had difficulty in providing feedback and reinforcement to the learners, therefore, it could be argued that a relatively lower effect size may have emerged in such a large sample group. Considering all these, learner-centered methods could be said to be more effective in changing learners' attitudes towards English lesson.

The  $Q=5.115$  value obtained according to the heterogeneity test was well below the critical value of 7.815 at 3 degrees of freedom in the  $X^2$  table, and the  $p$  value was greater than .05. Therefore, there was no significant difference between the groups ( $Q=15.115$ ;  $p>.05$ ). The moderator analysis showed that the combined effect size values across sample size were not statistically significantly different. It can be interpreted that there is no variable between the effect sizes other than sampling error at the individual level.

## CONCLUSION AND IMPLICATIONS

The individual studies included in the present meta-analysis study, in which the effect of learner-centered methods in foreign language teaching on learners' attitudes towards the English lesson, includes studies conducted between 2005 and 2022. In order to determine the effect of these studies on the attitude towards the lesson, 25 comparison results were obtained from 24 individual studies based on the inclusion and exclusion criteria. A total of 1478 participants, 769 in the experimental group and 709 in the control group, took part in these studies.

The overall effect of learner-centered methods in English lesson on learners' attitudes towards the lesson was calculated as  $g=0.925$  according to the random effects model. The present meta-analysis and results of previous studies in literature demonstrated that learner-centered methods had a significant effect size on attitude towards English lesson. In literature there are meta-analysis studies on learner-centered practices with similar results. To start with, Lee (2022) carried out a meta-analysis to discover the effects of English language learning. Attitude was one of the variables of the study. It was demonstrated that storytelling had an effect size of  $g=1.277$  which meant a very large effect size and it was concluded that storytelling could be effective in leading to positive attitude towards English learning. On the other hand, there are meta-analysis studies in the literature with relatively medium effect size. For example, Kurnaz and Korkutan (2023) meta-analytically investigated the effect of students-centered practices on reading attitude in Turkish lesson. Creative drama and cooperative learning practices were also within the scope of their study. The overall effect size of students-centered practices on reading attitude was  $g=0.445$ . Ay Emanet and Kezer (2021) also studied the effects of student-centered teaching methods used in mathematics courses on mathematics achievement, attitude, and anxiety. Student-centered teaching methods turned out to have a medium effect size with  $d=0.530$ . Similarly, Yildirim (2022) examined the effect of drama method on academic achievement and attitude, and the effect size of drama method on attitudes was determined as  $d=0.680$  which was a moderate effect size. Batdı (2014) also studied the effect of using the concept-mapping technique and traditional methods on the achievement, retention and attitudes of students. He found that concept-mapping technique had an effect size of 0.714 on students' attitudes. Lastly, Ayaz and Şekerci (2015) attempted to determine the effect of constructivist

approach to attitude. They showed that the constructivist approach had moderate effect size with  $d=0.755$ . To sum up, it can be asserted that marrying learner-centered methods to learning would yield more fruitful results in terms of promoting positive attitudes towards lesson.

As moderator variable in the present meta-analysis, publication year, the place of the research, publication type, method, language skills, education level, duration of the experimental application and sample size were used. Based on the moderator analysis results, while a statistically significant difference was detected in effect sizes of publication year and language skills moderators, statistically no significant difference was found in effect sizes of place of research, publication type, method, education level, duration of experimental application and sample size moderators.

Studies were grouped according to year intervals in order to make moderator analysis according to publication year. Results showed that the studies that had the highest effect on the attitude towards lesson were those conducted between 2011 and 2016. Also important to note, it was discovered that it was effective on the attitude towards speaking skill with the highest effect value ( $g=1.029$ ) in English lesson. It was found that learner-centered methods were effective in differentiating the effect sizes in terms of language skills on the attitude towards the lesson ( $p=.001$ ). Accordingly, it was determined that learner-centered methods had a wide and positive effect on the attitudes of learners towards the English lesson, regardless of the place where the experimental application was conducted.

The data obtained for the attitude towards the lesson from individual studies such as Ph.D dissertations, articles in academic peer-reviewed journals, and MS thesis were subjected to moderator analysis in terms of publication type. According to the results obtained, it was found out that the highest effect was obtained from the Ph.D. Dissertations ( $g=1.551$ ). In their meta-analysis study Karakuş and Öztürk (2016) found out similar results. They examined the effect of cooperation-based method on success and attitudes towards science education. One of their moderator was publication type and they sorted out publication as Ph.D dissertations and master thesis. They showed that Ph.D dissertations had a higher effect size. In a meta-analysis study by Özkaya (2022), it was illustrated that creative drama method which was conducted within the scope of doctoral dissertations had higher effect size than the other publication types with a value of  $d=0.759$ . Based on this result, it can be asserted that Ph.D dissertations were conducted by researchers who were expert in their field, and this led to better results.

It was determined that the effect size values did not cause a significant difference between the groups according to the method applied in the experimental group ( $p=.086$ ). However, it was clear that project-based learning had the largest effect size ( $g=1.601$ ). Sugano and Mamolo (2021) conducted a similar meta-analysis for chemistry lesson. They tried to find out the effectiveness of teaching methodologies on students' attitude and motivation. However, they discovered the effect of project-based learning as  $d=0.452$  which was a medium effect size.

One of the remarkable results of present meta-analysis was that learner-centered methods created a significant difference between the groups in terms of attitude at the education level ( $p=.035$ ). In this sense, the highest effect was at the high school level ( $g=1.125$ ) and the lowest effect was at the primary school level ( $g=0.244$ ). The results reinforce the idea that learner-centered methods are effective in positively changing students' attitudes towards English lesson across all education level.

One of the robust results of the present meta-analysis was found in duration of the experimental application moderator. It was found that the learner-centered methods were effective on the learners' attitudes towards the lesson with the highest effect value ( $g=1.232$ ) in terms of application time between 12-18 weeks and this effect size value had a very large effect size. Based on finding, it was concluded that the implementation period should be kept relatively long while planning experimental studies on attitude towards the lesson in order to positively change affective characteristics such as attitude because such affective characteristics as attitude are resistant to change. In other words, as the experimental application time gets longer, the likelihood of developing positive attitudes towards English lesson gets higher. Yildirim (2022) reached similar results in his study. He found out that the application period

with 6 weeks and over, and 17 hours and over resulted in higher effect sizes with  $d=0.749$  and  $d=0.906$ , respectively. Also, Ayaz (2015) conducted a meta-analysis on the effect of 5E learning model-one of the learner-centered methods-on the attitudes of the students. One of the moderators of his study was application duration and he analyzed it in hours. He found out that when the application duration was 20 hours and above, it showed better results with an effect size of  $ES=0,714$ . He concluded that characteristics of the learners were important in learning process and supporting the learner with adequate and appropriate time had positive results. In addition, it was obvious that the attitude towards the lesson in groups with small samples has changed more positively thanks to the applied methods (sample of 1-20 participants,  $g=1.704$ ). A similar study on the effect of reflective thinking activities on academic achievement, attitude, and permanence by Gürbüzürk and Ünal (2022) revealed that reflective thinking activities proved more effective in sample size with 1-29 participants ( $g=0.793$ ). Similarly, Özdemir et al. (2020) showed that conducting computer-aided mathematics teaching on the student attitudes towards mathematics promoted students' attitudes when carried out with a sample size of 25-40 participants. As attitude is an affective behavior (Atalmış & Köse, 2018, p.394), it can sometimes be difficult to change. However, carrying out learner-centered methods in relatively small sample size give the teacher to pay attention and necessary feedback to all students which makes students feel that they are cared about. This in return promotes positive attitudes towards English lesson.

In the light of the results of the present meta-analysis, it is possible to make the following suggestions: These learner-centered methods can be applied frequently and for longer periods of time in order to make students like a foreign language and to change students' attitudes towards learning a foreign language in a positive way. Studies can be conducted to determine which of the methods and techniques within the scope of learner-centered approaches included in this study is more effective than the other. The present meta-analysis study consists of face-to-face learner-centered approaches. In future studies, it can be investigated which of the approaches that are face-to-face and online/technology supported (e.g. face-to-face cooperative learning and online cooperative teaching) are more effective.

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## TÜRKÇE GENİŞLETİLMİŞ ÖZET

Eğitim-öğretim alanı eğitimin kalitesinin artırılması için birçok çalışmanın yürütüldüğü alanlardan biridir. Bilim insanları tarafından yürütülen çalışmalar sonucunda her gün çok fazla sayıda tez, makale, bildiri ve kitap yayımlanmaktadır. Çalışmaların sayısı artıkça bu çalışmaların daha kapsamlı ve sistematik bir şekilde sentezlenmesi ihtiyacı da artmaktadır (Basit ve Deniz, 2020, s.102). Bu noktada aynı konuda yapılan birbirinden bağımsız çalışmaların ortaya koydukları sonuçların sentezlenmesinde kullanılabilir en etkili yöntemlerden birinin meta-analiz olduğu söylenebilir. Yıldız'a (2002) göre herhangi bir çalışma alanında belirli bir konuda birbirinden ayrı olarak yapılmış sayıca fazla çalışmalar bulunmaktadır. Bu sayıca çok araştırma aynı anda incelenmeyi ve içlerindeki hedeflenen bilgilere ulaşılmasını zorlaştırmaktadır. Bundan dolayı, bu bilgi birikiminden etkin bir şekilde faydalanmak, bu çalışmalardan çıkan sonuçları yorumlamak ve tüm bunların yeni çalışmalarla sonuçlanması için daha detaylı ve geniş bir araştırma yaklaşımına ihtiyaç vardır. Bu ihtiyacın giderilmesi noktasında meta-analizin kullanılabilir bir yöntem olduğu söylenebilir. Meta-analizin sosyal bilimler alanında biriken bu devasa bilgi kümesini bir araya getirerek güvenilir sonuçlara ulaşılmasını ve daha kapsamlı yorumlar yapılmasına imkân sağlayacağı düşünülmektedir. Bu noktadan hareketle, bu meta-analiz çalışması İngilizce öğretim programlarında öngörülen ve ön plana çıkarılan öğrenen merkezli yöntemleri ele alması hem Türkiye hem yurt dışında yapılmış olan bireysel çalışmaları bütünleştirmesi ve derse yönelik tutumu incelemesi bakımından diğer meta-analiz çalışmalarından ayrılmaktadır.

Bu çalışmada yabancı dil öğretiminde öğrenen merkezli yöntemlerin öğrencilerin derse yönelik tutumlarına etkisinin meta-analiz yoluyla araştırılması amaçlanmaktadır. "İngilizce öğretimi üzerine yapılan araştırmalarda öğrenen merkezli yöntemler öğrenenlerin derse yönelik tutumlarını etkilemekte midir?" bu meta-analiz çalışmasının temel sorudur. Bu temel problem çerçevesinde aşağıdaki sorular bu çalışmanın alt problemlerini oluşturmaktadır.

İngilizce öğretiminde öğrenen merkezli yöntemlerin;

1. Derse yönelik tutum üzerindeki etki büyüklüğü hangi düzeydedir?
2. Etkililik düzeyi derse yönelik tutum bakımından yayım yılına göre farklılaşmakta mıdır?
3. Etkililik düzeyi derse yönelik tutum bakımından araştırmanın yürütüldüğü yere göre farklılaşmakta mıdır?
4. Etkililik düzeyi derse yönelik tutum bakımından yayım türüne göre farklılaşmakta mıdır?
5. Etkililik düzeyi derse yönelik tutum bakımından uygulanan yönteme göre farklılaşmakta mıdır?
6. Etkililik düzeyi derse yönelik tutum bakımından dildeki beceri alanlarına (dinleme, konuşma, yazma, okuma, kelime vb.) göre farklılaşmakta mıdır?
7. Etkililik düzeyi derse yönelik tutum bakımından öğretim kademelerine göre farklılaşmakta mıdır?
8. Etkililik düzeyi derse yönelik tutum bakımından uygulama sürelerine göre farklılaşmakta mıdır?
9. Etkililik düzeyi derse yönelik tutum bakımından örneklem büyüklüklerine göre farklılaşmakta mıdır?

İngilizce dersinde öğrenen merkezli yöntemlerin derse yönelik tutuma etkisini inceleyen deneysel araştırmaların sonuçlarının bir araya getirilerek genel durumun ortaya konulmasının amaçlandığı bu çalışmada meta-analiz yöntemi kullanılmıştır. Bu meta-analiz çalışmasında grup karşılaştırma meta-analizi türlerinden olan işlem etkililiği meta-analizi kullanılmıştır. Bu meta-analiz çalışmasında rastgele etkiler modeli kullanılmıştır. Etki büyüklüğünün yorumlanmasında Thalheimer ve Cook (2002) etki büyüklüğü sınıflaması referans alınmıştır. Bu meta-analiz çalışmasında 2005-2022 yılları arasında yapılan çalışmalara yer verilmiştir. Yabancı dil öğretiminde öğrenci merkezli çalışmaların öğrencilerin derse yönelik tutumlarına etkisini incelemek için gerçekleştirilen bu çalışmada analizi yapılacak çalışmalara ulaşmak için belirlenen anahtar sözcükler kullanılarak YÖK Ulusal Tez Merkezi, Google Scholars, Education Resources Information Center (ERIC), Proquest Digital Dissertations, Elsevier/Science Direct, Emerald, Ulakbilim/EBSCO, Web of Science, Taylor & Francis, Dergipark, JSTOR, Springer, SAGE, Wiley Online Library veri tabanları ve makale paylaşım siteleri taranmıştır. Veri tabanları/makale paylaşım sitelerinde "işbirliğine dayalı öğrenme", "işbirlikli öğrenme", "işbirlikçi

öğrenme”, “kubaşık öğrenme”, “drama”, “drama tekniği”, “drama yöntemi”, “dramatizasyon”, “proje tabanlı öğrenme” ve “İngilizce”, “İngilizce dersi”, “İngilizce öğretimi”, “İngilizce öğrenimi”, “İngiliz dili” gibi anahtar kelimelerin Türkçe ve İngilizce karşılıkları AND, çift tırnak (“ ”), intitle, kullanılarak hem çalışma başlıklarında hem de veri tabanı/makale paylaşım sitelerinin tüm boyutlarında yıl ve konu sınırlamaları yapılarak tarama gerçekleştirilmiştir. Bu çalışmada huni grafiğinden ve orman grafiğinden sadece görsel yorumlama anlamında yararlanılmış olup yayım yanlılığı Rosenthal’ın Korunmalı N sayısı ve Orwin’in Korunmalı N sayısı yöntemi gibi istatistiksel yöntemlerle test edilmiştir. Çalışmada etki büyüklüğü değeri olarak Hedge’s “g” kullanılmıştır. Bütün istatistiksel hesaplamalarda anlamlılık düzeyi için 0,05 olarak seçilmiştir. Ham verilerin rapor edildiği çalışmalarda deney ve kontrol grubunun aritmetik ortalama ve standart sapmalarının hesaplanmasında <https://standarddeviationcalc.com/> internet veri tabanı kullanılmıştır. Homojenlik testi için Q ve I2 istatistikleri kullanılmıştır.

Yabancı dil öğretiminde öğrenen merkezli yöntemlerin derse yönelik tutumları üzerindeki etkisinin incelendiği bu meta-analiz çalışmasına dâhil edilen bireysel çalışmalar 2005-2022 yılları arasında yapılmış çalışmaları kapsamaktadır. Bu çalışmaların derse yönelik tutum üzerindeki etkisini belirleyebilmek için dâhil edilme ve hariç tutulma kriterlerine dayanarak 24 bireysel çalışmadan 25 karşılaştırma sonucu elde edilmiştir. Bu çalışmalarda deney grubunda 769 ve kontrol grubunda 709 olmak üzere toplamda 1478 katılımcı yer almıştır. İngilizce dersinde öğrenen merkezli yöntemlerin öğrenenlerin derse yönelik tutumları üzerindeki genel etkisi rastgele etkiler modeline göre  $g=0,925$  olarak hesaplanmıştır. Etki büyüklüklerinin yorumlanmasında Thalheimer ve Cook’un (2002) etki büyüklüğü sınıflaması kullanılmıştır. Derse yönelik tutum için elde edilen etki büyüklüğünün geniş ve pozitif yönde olduğu sonucu ortaya çıkmaktadır. Çalışmaların etki büyüklüğü yönüne bakıldığında 2 etki büyüklüğünün negatif, 0 etki büyüklüğünün nötr ve 23 etki büyüklüğünün ise deney grubu lehine olmak üzere pozitif yönlü olduğu tespit edilmiştir. Yayım yılına göre moderatör analizi yapabilmek için çalışmalar yıl aralıklarına göre gruplandırılmıştır. Elde edilen sonuçlara göre derse yönelik tutum üzerinde en yüksek etkiye sahip çalışmaların 2011-2016 yılları arasında yapılanlar olduğu bulunmuştur. Bu yıllar arasındaki çalışmaların etki büyüklüğünün  $g=1,494$  ile en yüksek değere sahip olduğu görülmektedir. Elde edilen sonuçlara göre en yüksek etkinin DR tezlerinden elde edildiği görülmektedir ( $g=1,551$ ). Öğrenen merkezli yöntemlerin derse yönelik tutum üzerinde yayım türü bakımından etki büyüklüklerini anlamlı bir şekilde farklılaştırmada etkili olmadığı ortaya çıkmıştır ( $p=,181$ ). Öğrenen merkezli yöntemlerin tutum bakımından İngilizce dil becerilerini etkilemede manidar farklılık oluşturup oluşturmadığı analiz edilmiştir. Elde edilen sonuçlara göre, İngilizce dersinde en yüksek etki değeriyle ( $g=1,029$ ) konuşma becerisine yönelik tutum üzerinde etkili olduğu görülmektedir. En düşük etki değeri ise kelime alanında ve etki büyüklüğü  $g=-0,009$  değeridir ki bu da önemsiz bir etki büyüklüğüdür. Öğrenen merkezli yöntemlerin derse yönelik tutum üzerinde dil beceri alanı bakımından etki büyüklüklerini anlamlı bir şekilde farklılaştırmada etkili olduğu bulunmuştur ( $p=,001$ ). Öğrenen merkezli yöntemlerin tutum bakımından öğretim kademesinde de gruplar arasında manidar farklılık oluşturduğu tespit edilmiştir ( $p=,035$ ). Bu anlamda en yüksek etki lise kademesinde ( $g=1,125$ ) en düşük etki ilkökul kademesindedir ( $g=0,244$ ). Öğrenen merkezli yöntemlerin öğrenenlerin derse yönelik tutumları üzerinde uygulama süresi bakımından en yüksek etki değeriyle ( $g=1,232$ ) 12-18 arası haftalarda etkili olduğu ve bu etki değerinin çok geniş bir etki büyüklüğü olduğu bulunmuştur. küçük örneklemli gruplarda derse yönelik tutumun uygulanan yöntemler sayesinde olumlu yönde daha çok değiştiği görülmektedir (1-20 kişilik örneklem  $g=1,704$ ).