

Prof. SAFURE BULUT

Personal Information

Office Phone: [+90 0312 210 4058](tel:+9003122104058)

Fax Phone: [+90 0312 210 7971](tel:+9003122107971)

Email: sbulut@metu.edu.tr

Web: <https://avesis.metu.edu.tr/sbulut>

Address: Orta Doğu Teknik Üniversitesi Eğitim Fakültesi Matematik ve Fen Bilimleri Eğitimi Bölümü 06800 Çankaya Ankara

International Researcher IDs

ScholarID: Pr2SKjwAAAAJ

ORCID: 0000-0002-5941-1790

Publons / Web Of Science ResearcherID: AAP-4186-2021

ScopusID: 16644661100

Yoksis Researcher ID: 164432

Education Information

Doctorate, Middle East Technical University, Faculty of Education, Matematik Ve Fen Bilimleri Eğitimi Bölümü, Turkey
1988 - 1994

Postgraduate, Middle East Technical University, Faculty of Education, Matematik Ve Fen Bilimleri Eğitimi Bölümü, Turkey
1986 - 1988

Undergraduate, Middle East Technical University, Faculty of Arts and Sciences, Department of Mathematics, Turkey
1982 - 1986

Foreign Languages

English, C1 Advanced

Research Areas

Teacher Training in Science and Math. at Second. Sch. Lev.

Academic Titles / Tasks

Professor, Middle East Technical University, Faculty of Education, Mathematics and Science Education, 1986 - Continues

Advising Theses

BULUT S., Investigation of the effects of problem solving instruction on fifth grade students' mathematical problem solving performance, Postgraduate, Ö.KANAR(Student), 2022

BULUT S., The effect of metacognitive instructional method on eleventh grade students' metacognitive skill and mathematical procedural and conceptual knowledge, Doctorate, T.ABDUL(Student), 2016

BULUT S., An Integrated use of vectorial approach with analytical and synthetic approaches: a teaching experiment with

eleventh grade students on quadrilaterals, Doctorate, A.İhsan(Student), 2016

BULUT S., The Effect of metacognitive instructional method on eleventh grade students' metacognitive skill and mathematical procedural and conceptual knowledge, Doctorate, T.Abdul(Student), 2016

BULUT S., An integrated use of vectorial approach with analytical and synthetic approaches: a teaching experiment with eleventh grade students on quadrilaterals, Doctorate, A.İHSAN(Student), 2015

BULUT S., The effect of conceptual change based instruction on tenth grade students' understanding of probability concepts, probability achievement and attitudes toward probability, Doctorate, E.TOPBAŞ(Student), 2014

BULUT S., The Effect of conceptual change based instruction on tenth grade students' understanding of probability concepts, probability achievement and attitudes toward probability, Doctorate, E.Topbaş(Student), 2014

ÇAKIROĞLU E., BULUT S., Middle school mathematics teachers' problems in teaching transformational geometry and their suggestions for the solution of these problems, Postgraduate, S.İlaslan(Student), 2013

BULUT S., Pre-service elementary mathematics teachers' conception of derivative from commognition perspective, Doctorate, Ö.Yiğitcan(Student), 2013

BULUT S., Pre-service elementary mathematics teachers' conception of derivative concept from commognition perspective, Doctorate, Ö.YİĞİTCAN(Student), 2013

BULUT S., A study on sixth grade students' understanding of multiplication of fractions using Pirie and Kieren model, Doctorate, N.DÜZENLİ(Student), 2012

BULUT S., A case study of the use of manipulatives in upper elementary mathematics classes in a private school: teachers' and students' views, Doctorate, B.Yıldız(Student), 2012

BULUT S., A case study of the use of manipulatives in upper elementary mathematics classes in a private school: Teachers' and students' views, Doctorate, B.TUNCAY(Student), 2012

BULUT S., Effects of a mathematics instruction enriched with portfolio activities on seventh grade students' achievement, motivation and learning strategies, Doctorate, S.ÖZDEMİR(Student), 2012

BULUT S., Strategies and difficulties in solving spatial visualization problems: A case study with adults, Doctorate, E.BANU(Student), 2012

BULUT S., Seventh grade students' attitudes toward mathematics in terms of cognitive, affective and behavioral components: a modeling study, Doctorate, Ö.Gün(Student), 2011

BULUT S., Seventh grade students' attitudes toward mathematics in terms of cognitive, affective and behavioral components: A modeling study, Doctorate, Ö.GÜN(Student), 2011

BULUT S., The roles of affective, socioeconomic status and school factors on mathematics achievement: A structural equation modeling study, Doctorate, Ö.MERT(Student), 2010

BULUT S., ÇAKIROĞLU E., Investigation of pre-service elementary mathematics teachers' self-efficacy beliefs about using concrete models in teaching mathematics, Postgraduate, M.PIŞKİN(Student), 2010

BULUT S., The effect of instruction with concrete models on eighth grade students' probability achievement and attitudes toward probability, Postgraduate, F.YAĞCI(Student), 2010

BULUT S., The effect of instruction with concrete materials on fourth grade students' geometry achievement, Postgraduate, S.SARI(Student), 2010

BULUT S., Türev konusunda matematiksel modelleme yönteminin ortaöğretim öğrencilerinin akademik başarıları ve öz-düzenleme becerilerine etkisi, Doctorate, M.ÖZTURAN(Student), 2010

BULUT S., The effects of problem solving on the topic of functions on problem solving performance, attitude toward problem solving and mathematics, Postgraduate, B.EGE(Student), 2010

BULUT S., Ortaöğretim matematik öğretmen adaylarının problem çözme durumlarındaki matematiksel yaratıcılıkları üzerine nitel bir araştırma, Doctorate, Y.KIYMAZ(Student), 2009

BULUT S., An investigation of seventh grade students' computational estimation strategies and factors associated with them, Doctorate, B.BOZ(Student), 2009

BULUT S., The effects of problem-based learning method on 9th grade students' achievement in geometry, Postgraduate, M.APAÇIK(Student), 2009

BULUT S., The effects of problem solving approaches on students' performance and self-regulated learning in mathematics, Doctorate, Z.SONAY(Student), 2009

BULUT S., Impact of 5E learning cycle on sixth grade students' mathematics achievement on and attitudes toward mathematics, Postgraduate, S.PULAT(Student), 2009

BULUT S., Predicting 9th grade students' geometry achievement: ontributions of cognitive style, spatial ability and attitude toward geometry, Postgraduate, E.İŞİK(Student), 2008

BULUT S., Matematik öğretmen adaylarının üstbilişsel davranışlarının gelişimine yönelik tasarlanan eğitim durumlarının etkililiği, Doctorate, H.DEMİRCİOĞLU(Student), 2008

BULUT S., Predicting 9th grade students' geometry achievement: contributions of cognitive style, spatial ability and attitude toward geometry, Postgraduate, E.İşık(Student), 2008

BULUT S., Ortaöğretim matematik öğretmen adaylarının matematiksel modelleme yapabilme becerilerinin geliştirilmesi üzerine bir araştırma, Doctorate, Ö.ÖZER(Student), 2008

BULUT S., Investigation of effect of visual treatment on elementary school student's spatial ability and attitude toward spatial ability problems, Postgraduate, M.EMRE(Student), 2008

BULUT S., Investigation of self-regulated learning and motivational beliefs in mathematics achievement, Postgraduate, G.ERGÖZ(Student), 2008

BULUT S., Contributions of self-confidence, actual work effort and perceived importance of work effort to eight grade students' mathematics achievement, Postgraduate, S.AÇIKGÖZ(Student), 2006

BULUT S., İlköğretim 4. ve 5. sınıf öğrencilerinin matematiğin doğası ve matematik öğretimi hakkındaki inançları, Postgraduate, A.KAYAASLAN(Student), 2006

BULUT S., The effect of instruction with analogy-enhanced model on ninth grade students' function achievement and attitudes toward mathematics, Postgraduate, C.Akman(Student), 2005

BULUT S., The effect of instruction with problem posing on tenth grade students' probability achievement and attitudes toward probability, Postgraduate, B.BURÇİN(Student), 2005

BULUT S., Investigation of high school students' spatial ability, Postgraduate, E.BANU(Student), 2005

BULUT S., The effects of instruction with analogy-enhanced model on ninth grade students' function achievement and attitudes toward mathematics, Postgraduate, C.AKMAN(Student), 2005

BULUT S., Investigation of estimation ability of high school students, Postgraduate, B.BOZ(Student), 2004

BULUT S., High school students' beliefs about mathematics and the teaching of mathematics, Postgraduate, Ö.MERT(Student), 2004

BULUT S., The effect on instruction with concrete models on eighth grade students' geometry achievement and attitudes toward geometry, Postgraduate, S.Bayram(Student), 2004

BULUT S., İnvestigation of secondary school students' performance on proof and attitude towards proof in geometry, Postgraduate, İ.ÇİÇEK(Student), 2004

BULUT S., The effect of instruction with concrete models on eighth grade students' geometry achievement and attitudes toward geometry, Postgraduate, S.BAYRAM(Student), 2004

BULUT S., Factors affecting preservice mathematics teachers' decisions on probability teaching, Postgraduate, E.ÖZAYTABAK(Student), 2004

BULUT S., Investigation of effects of school type, gender and grade level on students' attitudes toward technology, Postgraduate, M.Çatak(Student), 2003

BULUT S., Investigation of the effects of school type, gender, and grade level on students' attitudes toward technology, Postgraduate, M.ÇATAK(Student), 2003

BULUT S., Investigation of students probabilistic misconceptions, Postgraduate, A.İHSAN(Student), 2003

BULUT S., Relationships among self-regulated learning components, motivational beliefs and mathematics achievement, Postgraduate, B.ÖZTÜRK(Student), 2003

BULUT S., Investigation of tenth grade students' problem solving strategies in geometry., Postgraduate, S.ÖZKAYA(Student), 2000

BULUT S., Reciprocal relationship between attitudes toward mathematics and achievement in mathematics, Postgraduate, Ş.TAĞ(Student), 2000

BULUT S., Beliefs of preservice mathematics teachers at the Middle East Technical University and the Gazi University about the nature of mathematics and the teaching of mathematics, Postgraduate, S.CENAP(Student), 2000

BULUT S., The Effect of different teaching methods on mathematical problem solving performance., Postgraduate, Y.KOÇ(Student), 1998

Articles Published in Other Journals

- I. **Experimental Study on Mathematical Problem Solving Approach with Pre-service Elementary Teachers**
AY Z. S., BULUT S.
PAMUKKALE UNIVERSİTESİ EĞİTİM FAKÜLTESİ DERGİSİ-PAMUKKALE UNIVERSITY JOURNAL OF EDUCATION, vol.36, pp.45-57, 2014 (Peer-Reviewed Journal)
- II. **A Case Study about Computational Estimation Strategies of Seventh Graders İlköğretim Online, 11(4), 979-994, 2012**
BULUT S., BOZ YAMAN B.
ELEMENTARY EDUCATION ONLINE, vol.11, no.4, pp.979-994, 2012 (Peer-Reviewed Journal)
- III. **Öğretmenlerin matematiğin doğası ve öğretimi ile ilgili inançlarının matematik eğitimindeki önemi**
Baydar C., BULUT S.
Hacettepe Üniversitesi Eğitim Fakültesi Dergisi-Hacettepe University Journal Of Education, vol.23, pp.62-66, 2002 (Peer-Reviewed Journal)
- IV. **Matematik öğretmen adaylarının olasılık başarısı, olasılık ve matematiğe yönelik tutumlarının cinsiyete göre incelenmesi**
BULUT S., YETKİN ÖZDEMİR İ. E., KAZAK S.
Hacettepe Üniversitesi Eğitim Fakültesi Dergisi, vol.22, pp.21-28, 2002 (Peer-Reviewed Journal)
- V. **Matematik öğretmen adaylarının olasılık başarısı olasılık ve matematiğe yönelik tutumlarının cinsiyete göre incelenmesi**
BULUT S., Yetkin İ. E., KAZAK S.
HACETTEPE ÜNİVERSİTESİ EĞİTİM FAKÜLTESİ DERGİSİ / HACETTEPE UNIV., JOURNAL OF FACULTY OF EDUCATION, vol.22, 2002 (Peer-Reviewed Journal)
- VI. **Geometriye Yönelik Bir Tutum Ölçeği**
BULUT S., Ekici C., İşeri İ. A., Helvacı E.
Eğitim ve Bilim, vol.27, no.126, pp.3-9, 2002 (Peer-Reviewed Journal)
- VII. **EFFECTS OF COOPERATIVE AND INDIVIDUALISTIC PROBLEM SOLVING METHODS ON MATHEMATICAL PROBLEM SOLVING PERFORMANCE**
Koç Y., BULUT S.
Hacettepe Üniversitesi Eğitim Fakültesi Dergisi, vol.22, pp.82-90, 2002 (Peer-Reviewed Journal)
- VIII. **Investigation of performances of prospective mathematics teachers on probability**
BULUT S.
Hacettepe Üniversitesi Eğitim Fakültesi Dergisi, vol.20, pp.33-39, 2001 (Peer-Reviewed Journal)
- IX. **Öğretmen Adaylarına Verilecek Bilgisayar Okuryazarlığı Dersinin İçeriği ve Adayların Ders Hakkındaki Görüşleri**
GÜRBÜZ T., ERYILMAZ A., BULUT S.
Buca Eğitim Fakültesi Dergisi, vol.11, pp.46-55, 2000 (Peer-Reviewed Journal)
- X. **Onbirinci sınıf öğrencilerinin ve matematik öğretmen adaylarının uzaysal yeteneklerinin incelenmesi**
BULUT S., Köroğlu S.
Hacettepe Üniversitesi Eğitim Fakültesi Dergisi, vol.18, pp.56-61, 2000 (Peer-Reviewed Journal)

Books & Book Chapters

- I. **Geometrik Düşünme Sürecinde Ölçmede Tahmin Becerisi**
Kandil Şivka S., Kaplan Can G., Karagöz Akar G., Bulut S.
in: Geometri Öğretiminde Bilişsel Süreçler, Akkuş Recai, Toluk-Uçar Zülbiye, Duatepe-Paksu Asuman, Boz-Yaman Burçak, Bulut Safure, Editor, vizetek, Ankara, pp.525-559, 2023
- II. **Geometri Öğretiminde SOLO Taksonomisi**
KAYHAN ALTAY M., BULUT S.

in: Geometri Öğretiminde Bilişsel Süreçler, Doç. Dr. Recai Akkuş, Prof. Dr. Zülbiye Toluk-Uçar, Prof. Dr. Asuman Duatepe-Paksu, Doç. Dr. Burçak Boz-Yaman, Prof. Dr. Safure Bulut, Editor, Vizetek, Ankara, pp.439-465, 2023

III. Geometri Öğretim Bilgisine Giriş

DUATEPE PAKSU A., TOLUK UÇAR Z., AKKUŞ R., BOZ YAMAN B., BULUT S.

in: Geometri Öğretim Bilgisi, Toluk Uçar Zülbiye, Akkuş Recai, Boz Yaman Burçak, Duatepe-Paksu Asuman, Bulut Safure, Editor, PEGEM, Ankara, pp.1-10, 2022

IV. Süslemelerin Öğretimi: Şerit süslemeler ve kaplamalar

ALTINIŞIK E., KANDİL S., YAVUZ F. D., AKKUŞ R., BULUT S.

in: Geometri Öğretim Bilgisi, Toluk Uçar Zülbiye, Akkuş Recai, Boz Yaman Burçak, Duatepe Paksu, Asuman, Bulut, Safure, Editor, PEGEM AKADEMİ, Ankara, pp.521-558, 2022

V. Süslemelerin Öğretimi: Şerit Süslemeler ve Kaplamalar

ALTINIŞIK E., KANDİL S., YAVUZ F. D., AKKUŞ R., BULUT S.

in: Geometri Öğretimi Bilgisi, Toluk Uçar Zülbiye, Akkuş Recai, Boz Yaman Burçak, Duatepe-Paksu Asuman, Bulut Safure, Editor, PEGEM, Ankara, pp.521-558, 2022

VI. Etkinlik Kavramının Matematik Öğretimindeki Tarihsel Gelişimi

YİĞİTCAN NAYİR Ö., BULUT S.

in: Matematik Eğitiminde Etkinlikler ve Uygulamaları, Yüksel Dede, Muhammed Fatih Doğan, Fatma Aslan-Tutak,, Editor, Pegem Akademi, Ankara, pp.43-73, 2020

Refereed Congress / Symposium Publications in Proceedings

- I. **Lise Öğrencilerinin ve İlköğretim Matematik Öğretmenliği Programı Öğrencilerinin Ortografik ve İzometrik Çizim Becerilerinin İncelenmesi**
BOZ YAMAN B., YİĞİTCAN NAYİR Ö., Kayhan Kırmacı E. B., Fatma Derya Y., BULUT S.
13. Ulusal Fen Bilimleri ve Matematik Eğitimi Kongresi, Turkey, 4 - 06 October 2018
- II. **Lise ve İlköğretim Matematik Öğretmenliği Programı Öğrencilerinin Ortografik ve İzometrik Çizim Becerilerinin İncelenmesi.**
BOZ YAMAN B., YİĞİTCAN NAYİR Ö., Kayhan Kırmacı B., Yavuz F. D., BULUT S.
13. Ulusal Fen Bilimleri ve Matematik Eğitimi Kongresi, Denizli, Turkey, 4 - 06 October 2018
- III. **Üniversite Öğrencilerinin Kurdukları Matematik Problemlerinin Değerler Açısından İncelenmesi**
BULUT S., ŞAHİN B., AKTAŞ F. N.
13. Ulusal Fen Bilimleri ve Matematik Eğitimi Kongresi, Denizli, Turkey, 4 - 06 October 2018
- IV. **Orthographic and Isometric Drawing Ability of 5th Grade Students**
YİĞİTCAN NAYİR Ö., BOZ YAMAN B., Kayhan Kırmacı E. B., Fatma Derya Y., BULUT S.
International Conference on Mathematics and Mathematics Education, 27 - 29 June 2018
- V. **5. Sınıf Matematik Ders Kitaplarında Tahmin Becerisi İşlenişinin Öğretim Programları Açısından Değerlendirilmesi**
BOZ YAMAN B., BULUT S.
Eğitimde Gelecek Konferansı, İstanbul, Turkey, 11 - 12 November 2017
- VI. **Comparison of Elementary School Mathematics Curricula with respect to Values Education**
BULUT S., ŞAHİN B., YAVUZ F. D.
International Conference on Mathematics and Mathematics Education(ICMME-2017), Urfa, 11 - 13 May 2017, pp.857-858
- VII. **Comparisons of Instructional Approaches of Elementary School Mathematics Curricula of 1998 and 2009**
BULUT S., YAVUZ F. D., ŞAHİN B.
International Conference on Mathematics and Mathematics Education, Urfa, Turkey, 11 - 13 May 2017, pp.861-862
- VIII. **Journey to Mathematics World with Pattern Blocks**
YAVUZ F. D., BULUT S.
International Conference on Mathematics and Mathematics Education(ICMME - 2017), Urfa, Turkey, 11 - 13 May

2017, pp.998-999

- IX. **Euler Bağıntısının Öğretiminde 5E Öğrenme Döngüsünün Kullanıldığı Ders İşlenişin Geliştirilmesi Eylem Araştırması**
BULUT S., YAVUZ F. D.
12. Ulusal Fen Bilimleri ve Matematik Eğitimi Kongresi, Trabzon, Turkey, 28 - 30 September 2016
- X. **MODELING THE RELATIONSHIPS AMONG SOME ATTITUDINAL VARIABLES TOWARD MATHEMATICS**
GÜN Ö., BULUT S.
PME 40, Szeged, Hungary, 3 - 07 August 2016, vol.2, pp.323-328
- XI. **Students' attitudes toward mathematics: A modeling study**
GÜN Ö., BULUT S.
13th International Congress on Mathematical Education 2016, Hamburg, Germany, 24 - 31 July 2016
- XII. **Geçmişte ve Günümüzde Okutulan Bazı Matematik Ders Kitaplarının Görsel Estetik Anlayışlarının İncelenmesi**
BULUT S., BOZ YAMAN B., YAVUZ F. D.
III. INTERNATIONAL EURASIAN EDUCATIONAL RESEARCH CONGRESS, Muğla, Turkey, 31 May - 03 June 2016, pp.1311-1312
- XIII. **Matematik Öğretmenlerinin Matematik Problemi Kurma Süreçlerini Kullanmadaki Performansları**
ŞAHİN B., BULUT S., ERBİLGİN E.
IIIrd INTERNATIONAL EURASIAN EDUCATIONAL RESEARCH CONGRESS, Muğla, Turkey, 31 May - 03 June 2016, pp.1315-1316
- XIV. **Journey in Mathematics World with Polyominoes and Polycubes**
BULUT S., YAVUZ F. D.
International Conference on Mathematics Education (ICMME-2016), Elazığ, Turkey, 12 - 14 May 2016, pp.651
- XV. **Elementary school mathematics curricula Grades 1 5 with respect to physical instructional objects**
BULUT S., YAVUZ F. D., BOZ YAMAN B.
International Conference on Mathematics Education (ICMME-2016), Elazığ, Turkey, 12 - 14 May 2016, pp.565-567
- XVI. **The investigation of Euler's formula on platonic solids by origami**
BOZ YAMAN B., BULUT S.
International Conference on Mathematics Education (ICMME-2016), Elazığ, Turkey, 12 - 14 May 2016, pp.632-634
- XVII. **An investigation on students' degree of acquisition related to van Hiele level of geometric reasoning: A case of 6-8th graders in Turkey**
KOÇ Y., İSİKSAL BOSTAN M., SEVİŞ Ş., OSMANOĞLU A., ÇETİNKAYA B., AŞKUN C. S., BULUT S.
Eighth Congress of European Research in Mathematics Education (CERME 8), 6 - 10 February 2013
- XVIII. **Solo modeli ile uzamsal gorselleştirme becerilerinin ölçülmesi**
KOC Y., İSİKSAL BOSTAN M., OSMANOĞLU A., ÇETİNKAYA B., AŞKUN C. S., BULUT S., SEVİŞ Ş., ESEN Y.
10. Matematik Sempozyumu, Turkey, 21 - 23 September 2011
- XIX. **PROSPECTIVE MATHEMATICS TEACHERS' SELF-EFFICACY BELIEFS REGARDING THE USE OF CONCRETE MODELS**
Tunc M. P., ÇAKIROĞLU E., BULUT S.
35th Annual Conference of the International-Group-for-the-Psychology-of-Mathematics-Education (PME), Ankara, Turkey, 10 - 15 July 2011, pp.373
- XX. **Pre-service Teachers' content and pedagogical content knowledge structures about multiplication algorithm and area-perimeter relations: What is the role of teaching methods courses?**
KOC Y., İSİKSAL BOSTAN M., SEVİŞ Ş., ÇAKMAK S., BULUT S.
American Educational Research Association (AERA) 2010 Annual Meeting, 30 April - 04 May 2010
- XXI. **Preservice teachers' purposes of utilizing concrete materials**
Tat E. T., BULUT S.
2nd World Conference on Educational Sciences (WCES-2010), İstanbul, Turkey, 4 - 08 February 2010, vol.2, pp.5835
- XXII. **Pre-service teachers' pedagogical content knowledge structures: What is the effect of methods courses?**

SEVİŞ Ş., KOC Y., ISIKSAL BOSTAN M., BULUT S.

The European Conference on Educational Research (ECER), 10 - 12 September 2008

XXIII. **Matematik öğretmen adaylarının türevin geometrik yorumu ile ilgili bilgileri**

KULA WASSINK F., TOPBAŞ TAT E., BULUT S., ÇETİNKAYA B.

16th National Congress on Educational Sciences, Turkey, 5 - 07 September 2007

XXIV. **MATEMATİK ÖĞRETİMİNDE SOMUT MATERYALLERİN KULLANILMASI**

BULUT S., AKYÜZ G., özkaya seçil s., YILDIRIM H. H., Tunca Yıldız B.

V. Ulusal Fen Bilimleri Ve Matematik Eğitimi Kongresi, Turkey, 16 - 18 September 2002, pp.188

XXV. **Matematik öğretmen adaylarının olasılık kavramları ile ilgili yeterliklerinin incelenmesi**

BULUT S., KAZAK S., YETKİN ÖZDEMİR İ. E.

Öğretmen Eğitiminde Çağdaş Yaklaşımlar Sempozyumu, Turkey, 18 - 20 March 1999

Supported Projects

BULUT S., Project Supported by Higher Education Institutions, FEN BİLİMLERİ ENSTİTÜSÜ/LİSANSÜSTÜ TEZ PROJESİ,
2014 - 2016

Metrics

Publication: 63

Citation (WoS): 327

Citation (Scopus): 55

H-Index (WoS): 3

H-Index (Scopus): 2

Non Academic Experience

METU

METU Dept.of Se

METU Dept. of S