

# **PRESERVICE MATHEMATICS TEACHERS' VIEWS ABOUT USING GEOMETER'S SKETCH PAD**



**Feride OZYILDIRIM**

**Oylum AKKUS-ISPIR**

**Vildan GÜLER**

**Sema İPEK**

**Berna AYGUN**

**University of Hacettepe**

# Purpose

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- to introduce Geometer's Sketch Pad (GSP) to preservice elementary mathematics teachers
- to make them use this program, find out their views about computer assisted geometry instruction through GSP.

# Research Question

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What are the views of preservice elementary mathematics teachers related to GSP?

# What is Geometer's Sketch Pad (GSP)?

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## ➤ **A Dynamic Geometry Software System**

GSP is one of the DGS, a computer software system for creating, exploring, and analyzing a wide range of mathematics concepts in the field of algebra, geometry, trigonometry, calculus, and other areas (Key Curriculum Press, 2001).

# What is Geometer's Sketch Pad (GSP)?

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## ➤ **An interactive tool for learning and teaching**

GSP is an excellent interactive tool that encourages a process of discovery in which students first visualize and analyze a problem and then make conjectures (Furner & Marinas, 2007).

# Data Instruments

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Self-Efficacy towards Mathematics Scale (Umay, 2001)

Self-Efficacy towards Computer Scale (Askar and Umay, 2002)

Computer Literacy Scale (Kilinc and Salman, 2006).

# Sample

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Nine voluntary participants were selected among 75 elementary preservice mathematics teachers in 2007-2008 academic year according to the applied questionnaires.

# Method

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Semi-structured interviews with nine participants.

After six months later,

Post interviews with the same participants.

# Data Analyses

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Each interview was transcribed by researchers.

Each transcript was coded by at least three researchers.

Common codes were identified.

Codes were resolved by researchers.

# Findings

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## **The findings are loading under six themes:**

- How to teach geometry
- Utilization of GSP
- Effectiveness of GSP
- Efficacy in using GSP
- Suggestions for software development
- GSP usage in mathematics classrooms

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➤ How to teach geometry

geometry becomes more concrete and visual.

➤ Utilization of GSP

language of GSP

basic computer knowledge

mathematical understanding

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➤ Effectiveness of GSP

draw geometrical figures flawlessly and quickly

save time

support visualization

➤ Efficacy in using GSP

improve own method

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➤ Suggestions for software development

variety of language selection

add feedback for the solutions of given problems

add extra icons to improve the GSP menu

➤ GSP usage in mathematics classrooms

guide students rather than give instruction

work in pairs

use concrete materials beside GSP

# Conclusion and Suggestions

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- GSP provides dynamic and enjoyable learning environment.
- Preservice elementary mathematic teachers agree on the importance of GSP.
- GSP is an additional tool to teach geometry.
- Technical and financial support

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➤ Participants who are currently mathematics teachers are willing to introduce GSP to their students.

➤ The necessary classroom environment should be provided.  
(computer, curriculum, laboratory conditions, etc..)

# THANK YOU



**Res. Assist. Feride OZYILDIRIM**

Hacettepe University, Turkey  
feride@hacettepe.edu.tr