student homes are spread across a 400 square mile area. The only American middle school in this part of rural Bavaria, military dependents. States. from deployment, or is on emergency leave to the United
prepares to deploy, is home on Rest and Relaxation, returns is deployed. They may also have extended absences of two to
students experience difficulty focusing on school while a parent
of the military dependent lifestyle. Since USAG Bavaria is a
NMS students face a few unique challenges due to the nature
Learning has evolved with technology
Internet access, twenty
Hybrid classes and Blended learning Environments
- 4th/7th, worldwide
- Learning has evolved with technology
- Effective Communication
- Platform Compatibility
- Portability & Cloud Computing
- Collaboration

Background
NMS students face a few unique challenges due to the nature of the military dependent lifestyle. Since USAG Bavaria is a military community, at any time a third of our students have one or both parents deployed to the Middle East or Africa. Many students experience difficulty focusing on school while a parent is deployed. They may also have extended absences of two to three weeks and difficulty “catching up” each time the parent prepares to deploy, is on Rest and Relaxation, returns from deployment, or is on emergency leave to the United States. Netzaberg Middle School (NMS) serves 570, 6th-8th grade, military dependents.

Focus Question
What are the effects of a blended learning environment on student learning and academic success, using Google’s G Suite for Education, Schoology Learning Management System, and communication with GradeSpeed online gradebook?

Methods

Research
Focus Question
Does use of G Suite and Schoology help increase student academic achievement in science?

Data Source 1
Data Source 2
Data Source 3
Student Average Grades
Pre-Post Unit Test Scores
Pre/Posttreatment Student/Parent Technology Critique

Does use of G Suite and Schoology increase student communication skills in science?

Google Doc Collaboration Dis-
 Ease Research Rubric Peer Review
Pre/Posttreatment Student/Parent Technology Critique
Teacher Observation

Do students remain on task and engaged during G Suite and Schoology activities?

Schoology, Video and Practice Quiz Scores
Student Engagement Checklist
Teacher Observation

Treatment
- Textbook (Google Drive)
- Science Notebook (Google Slides)
- Review quizzes (Schoology)
- videos (Schoology)
- Collaborative groups (G Suite)
- Online calendar (GradeSpeed)
- unit outlines & due dates
- links to daily assignments
- useful review materials

Switched Methodology
- Phase 1: Physical and Chemical Properties of Matter
- Baseline Academic Performance Established
- No Treatment Group
- Treatment Group Class Periods 1-4 (A day)
- Non-treatment Group Class Periods 5-8 (B day)
- Phase 2-Cells Unit
- Treatment Group Class Periods 1-4 (A day)
- Non-treatment Group Class Periods 5-8 (B day)
- Phase 3-Genetics Unit
- Treatment Group Class Periods 5-8 (B day)
- Non-treatment Group Class Periods 1-4 (A day)
- Phase 4-Body and Disease Units
- All Class Periods Treatment Group

Data Collected

7th Grade Science Students (N=103)
- A Day Group (N=59)
- B Day Group (N=44)
- Terra Nova Test Scores
- Scholastic Reading Inventory Scores
- Student Quarterly Average Science Grades
- Cornell Technology Critique: Pre/Post Treatment
- Video and Practice Quiz Results
- Pre/Post Content Unit Tests
- Collaborative Group Research Project Rating
- Teacher Observation and Field Notes
- Student Engagement Checklist Observations

Focus Question
Students experience difficulty focusing on school while a parent is deployed. They may also have extended absences of two to three weeks and difficulty “catching up” each time the parent prepares to deploy, is on Rest and Relaxation, returns from deployment, or is on emergency leave to the United States. Netzaberg Middle School (NMS) serves 570, 6th-8th grade, military dependents.

Literature
- Hybrid classes and Blended learning Environments
- Internet access, twenty-four-seven, worldwide
- Learning has evolved with technology
- Effective Communication
- Platform Compatibility
- Portability & Cloud Computing
- Collaboration

Results

This process increased Student Academic Success & Developed Partnership of Learning
- Student feedback was constructive & insightful about learning
- PeerSelf evaluation instilled confidence in students’ abilities as learners
- G Suite editing features allowed quick, easy, & timely feedback from the teacher
- Valuable time freed up for use with students in greater need of assistance.

Blended learning allowed students to take control of their learning & academic success
- Proved themselves fully capable of maintaining focus
- Gained confidence in communication skills
- Collaborated well with digital tools
- Enjoyed collaborative work and helped each other learn
- Improved student writing skills
- Improved student, group, and teacher communication

The teacher role shifts to facilitation of learning. Students expand learning beyond planned lesson.

How well did your group work together?

“They gave me very helpful feedback that probably brought up my grade a lot.”

“Everyone has different strengths and its best to use them to their ability.”

Collaborative Group Experience Student Rating (N=39)