

## *Original Paper*

# Technology Integration in Teaching: A Study that Examines How Technology Integration Affects Student Achievement

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### ***Abstract***

*The study examines technology integration in instructional classes and their impact on student achievement, because integrating technology into teaching allows the teacher to take control of all students and draws their attention, greatly reducing classroom discipline issues.*

*In addition, it boosts teacher self-confidence because he speaks to students in their technological language, facilitates teachers' assessment of their students - if the teacher used an appropriate assessment tool, and allows students who are having difficulty in class to actively participate in lessons, helping teachers share all their lessons, and share the lessons they have prepared with the whole world. And all of this results in effective student performance, and teaching achievement.*

### ***Keywords***

*Technology integration, student achievement, Teaching process*

## **1. Introduction**

The 21st century is characterized by a multitude of technologies that have penetrated every area of human life. Education systems in Israel and around the world have adopted many digital technologies, technologies aimed at improving learning and teaching and adapting to the digital age. (Rosemary et al., 2017) Preparing students for a rapidly changing world requires integrating HL technology into the classroom, which contributes to a better learning of 21st century skills (Brown, 2006). Many studies in the last two decades show that there is a positive relationship between technology integration in teaching and learning and student achievement, as well as studies that have attempted to examine the relationship between parent knowledge in technology and behavior and their children's achievement. In my work, I will try to answer a key question that attempts to examine the relationship between the integration of technology in the teaching of languages in the State of Israel and the achievements of

students in these subjects.

## 2. Literature Review

Over the past three decades, we have witnessed a technological revolution whose results affect the ways we create, communicate, learn and teach. The Internet is about 45 years old, and about half the time it is accessible to the public. British scientist Timothy (Tim) Burns Lee, who is considered the inventor of the Internet, had foreseen in 1989 the Internet as a space where everyone would have immediate access not only to surfing, but also to content creation (Zeipert, 2016). Burns - Lee's vision came true, and the Internet has taken over our entire lives: social, family, world economy, studies ... Contemporary technology is part of this vision and it has become an integral part of human life today, technology is affecting all of our lives and one of the most important areas. Affected by it is education and teaching.

A lot of research has been done in the world and in the State of Israel in particular on integrating technology into teaching and trying to test its impact on student achievement or teaching in general. Many studies point to the pedagogical benefits of using teaching technologies. Among other things, it is possible to include diversity in the ways of teaching, increasing interest and commitment to learning, promoting the processes of understanding and acquiring learners' knowledge and improving the interaction between the student lecturer and the students themselves. Using these technologies also allows for constant access to information and learning experience and assists in a continuous learning process throughout the semester (Division, 2016).

Eshet and Gerry from their study aimed to compare critical reading ability in two parameters: digital and print in two age groups: high school and college students, showed that young participants performed better in digital format than those in adults in printed format (Chase Center Conference, 2007).

Tal Alhasidi and Meishar Tal suggested teaching centers use the wiki system and enrichment assignments to provide mandatory student assignments, this experiment being done in a variety of undergraduate and graduate courses and in very different disciplines. When the assignment was a mandatory assignment, attendance was 90 percent, and students reported that using the system was fun and contributed to their learning (Thanks to the wiki, 2007).

In a study designed to examine the teaching and learning processes in a high-tech environment conducted by 230 students and 63 teachers from the same locality, students report an increase in information organization and knowledge development skills and that the online environment allows them to better organize learning, the study finds The individual in the learning routine has different power in different students on the motivation for learning (Spector Levy et al., 2008).

Grupper argues that proper use of technology can make the teaching process - learning more dynamic and interesting, and provide support for students with different educational needs. Studies conducted in England have shown that the use of technology in teaching - learning has led to an improvement in

students' grades in national exams across all subjects. The most significant improvement was in language and science studies. An interesting statistic is that improvement in grades was achieved mainly in schools where technology was used in all subjects, while the integration of technology into individual subjects only had an open impact (Groper, 2010).

Blankinsp claims that using social media applications has many educational benefits. In economics studies, for example, it is found to increase the understanding of economic ideas, long-term memory and increase student interest and involvement (Blankinsp, 2011).

In their study, Dayan and Megan tried to find out to what extent the National Communication Program influences the implementation of pedagogy in an innovative learning environment in the first year of the program. And from their research, a teacher's position positively, significantly, and strongly influences the use of a pedagogical management tool, the school portal's activity, and a medium-sized power on the HL in a computerized environment. For more educated pedagogical management, the School Portal (Dayan & Magen Nagar, 2012).

And research by Wang and others has shown that using social media can lead to the creativity and engagement of quiet learners - those who do not tend to attend classes, and encourage classroom discussions (Wang et al., 2012).

Levin Daniel, as part of his research, incorporated the opposite classroom approach (open and online courses and multiplayer courses) as a teaching method in the Technion course. After comparing courses taught by the standard method and courses taught by this method, student scores increased by 15% and failure rates dropped from 25% to almost zero (Levin, 2014).

In a study examining the implications of 1: 1 learning instruction using Chromebook network computers on students' digital literacy skills, it emerged that students who studied in the 1: 1 model developed digital literacy for the various issues and thus acquired digital intelligence, enabling intelligent and productive use of technology, for work and learning purposes (Rosemary et al., 2017). It can be concluded from the above information that integrating technology into teaching and learning can improve student and student achievement, but there are some studies that have attempted to examine the relationship between parents' level of knowledge in technology use and their children's achievements, in other words, whether parents who know how to use technology can help their children and encourage them in their studies. From a study done on junior high school students in Japan and their parents in 2011, the findings of the study prove that most study participants did not use advanced monitoring systems (such as GPS ...), but more than half of the parents have plans to use them. The relationship between intention to use monitoring systems and two parenting styles was reported by parental research and their sons. Content analysis revealed that parenting style can predict intent to use monitoring systems. It is clear that parental style is influenced differently by the desire to use an advanced mechanism between parents and children. The importance of predicting parental desire to use the authority of parent and child control to use their responsibilities (Nakayama, 2011).

In another 2015 study aimed at talking about the relationship between technology and cognitive, social

and emotional processes, in addition to the impact of electronic communication on families and schools, it emerged that the type of communication use may mediate parental responses and their children's delicate behavior. For example, if the use of technology was to complete homework and acquire additional skills and information, this is considered to be in line with parental expectations. Therefore, in such cases, the use of communication is in a negative relationship with the conflicts. However, if the use of technology was purely for social and entertainment purposes, these uses contradict parental expectations and increase conflicts in the sea of parents and their children. And with that, negatively affecting family cohesion (Patrikakou, 2015).

### 3. Research Goal

The purpose of the study is to identify the impact of technology integration in teaching on the achievements of students in the State of Israel.

#### Research Question:

Is innovative technology means to achieve better achievements, which are used for a net educational purpose?

#### The Research Hypotheses:

- If schools integrate technology into teaching, student grades will improve.
- If teachers are diverse in technology, students will understand the material well.

#### Subject matter:

This issue is very important to me, because we live in a digital age and technology is flooding us in every direction, and the Israeli education system must adapt to the contemporary digital environment of students. And in my own experience as a high school teacher, and as a member of the "Leading Teachers" team whose role is to advance technology integration in teaching at our "Alchemy" school in Sakhnin, an old school that has moved to a technology school, and there are few teachers who have yet to adapt to online learning.

### 4. Method

#### 4.1 Participants

Students: The study population will consist of 4 grades from 3 upper secondary schools from the north of the country that integrate technology with teaching in the school.

Teachers: (3 teachers \* 4 schools = 12 teachers).

My research will include three schools from the north of Israel:

-Al-Ahkhma Sakhnin High School: Established 40 years ago, a high school with over 950 students, and a staff of 70 teachers, an Arab school contains a 24th grade.

-Comprehensive Peace in Sheikh Danon: 6th annual school attended by more than 630 students, a Bedouin Arab school.

-Abu Snan Comprehensive School: An 6th annual school where more than 700 students, most of them

from the Druze and Muslim sectors, attend

### **Research tool:**

The study is an integrated study that uses the qualitative approach to expose students' interpretation, teachers in the context of technology use in language teaching and its impact on student achievement, and the quantitative approach through which technology use skills are perceived as perceived by teachers and students. In the qualitative approach I will use the interview and observations, and the quantitative approach I will use the questionnaire.

A. Interview: Face-to-face meeting with the interrogators and asking questions in advance. The interviewer records or records the answers and then analyzes them.

B. questionnaire: A questionnaire for students that contains questions about how technology is implemented in the school, the technology tools used by teachers and their impact on students, and questions about students' attitudes toward technology's impact on teaching and learning. The questions were presented on a 5-level scale, ranging from 1 (not at all) to 5 (to a large extent) and they were asked to mark the appropriate answer in their opinion.

C. observation: A classroom observation to identify the topic in the field and to test the degree of classroom interactivity and technology utilization.

## **5. Findings and Discussion**

The students' attitudes and interviews conducted and the observation made show the degree of use of technological tools: smart tablet, tablets, laptops, desktops, a school website, the Kahut app within the classroom.

The results show that teachers used mostly the interactive board and less on laptops and tablets, and the teachers used technological means in language lessons, screening presentations, hair explanation and text analysis, and students disconnected some of the books and focused on text seen in the smartphone.

Using technology in language lessons results in an increase in the student's experience in the lesson, to illustrate the terms he is learning, and not just what he reads in the book. The teacher gives the lesson, the students can make presentations during the lessons, photograph the material using the technology and do not have to summarize the material that is stored on the computer, and send feedback and responses as soon as the teacher can understand how the students have come to understand the lesson.

Using technology in language lessons reveals that students have become more creative, they can search for information during the lesson, open Google Online, and then give an answer where teachers check at another time and then come back.

### *5.1 Findings of Observations in Lessons*

The 10th grade class took place in an online classroom with a smart board installed, the lesson was about a pre-Islamic era song in which the teacher began a video explaining this period that attracted students and helped them understand what it was about. Among the students, stopped the occasional activity to explain, the teacher received responses and sent students feedback, and the students drew

conclusions, and photographed the material that was also saved on the computer.

At the same time, a non-computerized class was being written by the teacher on the board and the students were copying, and most of them did not understand and could not imagine what a pre-Islamic period was.

### *5.2 Interview Findings*

The teachers stated in interviews that technology contributes to a good understanding of the study material, in the past we have not been able to reach most students, but with the means of technology we have been able to illustrate them, when they see a film on a particular subject and actually come in to find activities and links they understand what it is.

Teachers mentioned that there is an opportunity to provide feedback to the learner, passing through students seeing things they cannot see in notebooks unless they are collected, students receive responses and grades and can see where they have gone wrong and where it is not casual in frontal learning.

The use of technology encourages lesson discussions and participation, engages in something uniform, and looks together rather than every student in his book. The teacher can invite students to participate in the assignment within the lesson, learning has become more interesting, experiential.

At the same time there are teachers who noted difficulties in online learning that require a lot of preparation for the lesson, technical difficulties and maintenance of technological tools, power failure, students' lack of technology use, technology distraction from technology use, lack of technology tools for personal learning and students who do not have a home computer.

### *5.3 Questionnaire Analysis*

In the students' view, technology-integrated learning has a particular impact on acquiring information skills. The students mainly addressed the impact of using technology on the ability to find material on the Internet and summarize material from various sources on the Internet, the student material relevant to his or her achievements, the student who is willing and willing to work hard for good grades, involved and participates in the lesson, solves assignments without asking for help.

Students pointed to knowing how to find material and summarize from various sources on the Internet, the student shared in discussions that the teacher was having when making personal contact with the students.

Student learning has become experiential, creative learning, the student is employed most of the lesson and self-taught and shared in doing versus learning in a book that can be lost.

## **6. Summary**

The school has a school repetition whose principles are to respond to students, increase student achievement, and experiential learning with reference to instilling values in working in a computer environment.

These principles are applied through various means including the use of tools and technological

environment. The most widespread use of technological means, smart board, tablets, lessons makes learning an experiential and creative learning.

It was found that students' attitudes were more positive toward learning with technology and its impact, teacher-student interaction, and skill acquisition.

Among the teachers, there was a variation in the frequency and the use of technological tools, which, among other things, was the difficulty and effort invested in computerized lessons.

Therefore, integrating technology into teaching:

- A. Allows the teacher to take control of all students and draws their attention.
- B. Greatly reduces classroom discipline issues.
- C. Increases teacher self-confidence because he speaks to students in their technological language.
- D. Makes it easier for teachers to assess their students - if the teacher has used an appropriate assessment tool, such as: kahoot, nearpod...
- E. Allows students having difficulty in class to actively attend classes.
- F. Helps teachers make a personal repository for all lessons they prepare, and the teacher can save them for future use.
- G. Helps teachers share all the lessons they have prepared, and also share the lessons they have prepared with the whole world.

And all of this results in effective student performance, and teaching achievement.

In view of this, and in order to deepen the school pedagogical vision, additional teachers are recommended to use the technology, for example by appointing more experienced teachers to mentor less experienced teachers, and creating a roundtable to consult teachers from different disciplines about the best ways to incorporate technology into the school pedagogical system.

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### Appendix: Student Questionnaire

Featured Questionnaire: "The Impact of Technology on Teaching and Learning" - Students' Attitudes towards Technology's Impact on Learning.

#### Thanks in advance for your cooperation!

Here are some of the topics that deal with the subject being investigated, mark each one with your consent to the content, on the following scale:

1-2: low degree

3: medium degree

4-5: high degree

Sentence	1	2	3	4	5
1. I know how to find material online.					
2. In a lesson with technology the teacher teaches up-to-date material					
3. When I study with technology the study material is available to me					
4. When I study with technology the study material is relevant to me					
5. In a lesson with technology the teacher invests work and effort in preparing the lessons.					



6. When I study with technology, I understand the study material.					
7. Learning in lessons from diverse computer stages and engaging students					
8. Learning with technology makes it easier for me to learn					
9. When I study with technology, I feel comfortable with lessons					
10. When I study with technology, I work with other students in collaboration and teamwork.					
11. Lesson with Technology Teacher discusses lessons					
12. The teacher teaches well with technology					
13. When I study with technology, I remember the material.					
14. When I study with technology, I have the desire and desire to learn.					
15. As I study with technology, I progress at my own pace.					
16. When I study with technology, I feel confident sending a direct answer to the teacher.					
17. When I study with technology, I listen and concentrate on the lesson.					
18. When I study with technology I have an interest and enjoyment in my studies.					
19. In a lesson with technology the teacher varies his teaching methods					
20. When I study with technology I feel that I am successful in my studies					
21. Lesson with technology Teaching rate and material supply are fast.					
22. When I study with technology I prefer to solve tasks myself without asking for help from the teacher					
23. Lesson with technology is High Level Learning					
24. When I study with technology I am willing to work hard to get good grades					
25. When I study with technology I have high grades					
26. When I study with technology, I am actively involved in the class and actively participate.					
27. When I study with technology, the study intrigues me					
28. When I study with technology, I have a desire to do homework					
29. In a lesson with technology the teacher creates a personal connection with the students					