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CAN WE MAKE OUR STUDENTS PEDAGOGICAL DESIGN PARTNERS?

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Abstract

In recent years, the Internet has become an integral part of our lives, which includes a wide variety of platforms and activities, different purposes, different uses, and different characteristics. Technology is present in all areas of life, but there are differences in the scope and type of activities young people do in their free time compared to the scope and type of activities during school hours. The purpose of this research is to make the young people's voices heard about their digital lives, to hear their suggestions for integrating technology in the school, and to make them partners in building curricula.

The methodological approach in this research is a mixed method. 129 students aged 13-18 and 17 teachers who teach these students participated in the study. The research tools are two online questionnaires, one for students and one for teachers, both with closed and open questions. The findings reveal the students' leisure activities (digital and non-digital), the richness of their digital activities and their attitudes towards integrating technology into learning. In addition, the study presents what their teachers think about their student's leisure time activities and highlights the gap between them. Our findings are presenting the importance of hearing the students' voices for teachers and curriculum designers.

Keywords:

Student voice, Digital life, SNS, Search activities, Computer Games

Introduction

Digital platforms are an integral part of modern life. They have a profound impact on the way we communicate, learn, shop, and entertain ourselves (Jackman et al., 2021; Malak, et al., 2017). Indeed, young people's lives are immersed in technology. Recent study found that the vast majority of teenagers use internet on a daily basis (97%)' they have access to smartphone (95%), personal computer (PC) (90%), and game console (80%)(Anderson et al., 2022). Youth have positive attitudes towards social network sites (SNS) (Anderson et al., 2022), and they use mostly YouTube (95%), after that TikTok (67%). Facebook, which was very popular among teenagers in 2014 (71%) dropped in 2022 (32%) (Vogels et al., 2022).

In spite of the fact that youth also use digital platforms for learning purposes, studies indicate that many teachers find it difficult to integrate technology in a way that is adapted to the students' world, and the advancement of innovative pedagogies as well (Evans, 2019; Putri et al., 2020). In other words, they are having difficulty integrating content knowledge, pedagogical knowledge, and technological knowledge (TPACK) (Mishra and Koehler 2006; Voithofer, et al., 2019). Therefore, as educators we must get to know technologies that take place in our students' life. We need to understand in depth the uses and activities of our students' digital activities. and to realize the importance and the essential impact of the student voice (Cook-Sather 2020; Holquist 2019; Lubicz-Nawrocka, 2018; Machisi, 2023). Previous studies reveal that students have interests and abilities to express critic and voluble ideas regarding: teaching practices, wide range of pedagogy asepts, assessment design of curriculum, policy and decision making (Holquist 2019; Lubicz-Nawrocka, 2018; Machisi, 2023). Therefore, the purpose of this research is to answer the following questions:

1. What are the digital activities of youth? (Leisure time, social networks, gaming, information search)?

2. What do their teachers know about their digital activities?
3. What are youth attitudes and recommendations towards integrating digital activities in learning?

Methodology

The methodological approach in this research is a mixed methods approach that enables a more comprehensive understanding of complex educational phenomena and the learning environments in which they occur and facilitates new knowledge for educators and policy makers (Anderson & Shattuck, 2012; Kennedy-Clark, 2013). The use of a mixed approach makes it possible to create a solid basis for results, to understand them in depth and to discover new perspectives (Creswell, 2013; Dunning et al., 2008; Patton, 2002).

Therefore, combining qualitative and quantitative research allows us to gain a deeper understanding of students' digital lives and attitudes.

Research Participants

This study was conducted in a boys' school located in the center of Israel. The study included 146 participants: 129 students (69 in the seventh to ninth grade and 60 in the tenth to twelfth grade), and 17 teachers (6-35 years of teaching experience) who teach these students.

Research tools

The study was based on two self-reports and online questionnaires, one for students and one for their teachers.

The questionnaire covers the following topics: Digital activities: leisure time activities (hobbies, social networks, gaming types), search activities (information types and platforms), and attitudes toward digital integration in school. It also includes an open question: "If you were invited to a meeting of teachers and asked to consult with you on the proven ways teachers should use technology in lessons, what do you think you would advise them?"

The teacher's questionnaire includes questions about their assumptions concerning students' digital activities.

Ethics

An institutional ethics committee and the Chief Scientist of the Israeli Ministry of Education approved the study. All participants and their parents agreed to participate in the study.

Findings

RQ1: What are the digital activities of youth? (Leisure time, social networks, gaming, information search)?

Leisure time activities

The findings reveal that the students engage in the following activities, in descending order: meeting friends in person, playing mobile games, doing sports, watching TV series, searching the information on the internet, using social networks, and playing computer games. The activities that they are less engaged in are creating presentations, uploading pictures, internet shopping, creating videos, uploading videos and creating music. These findings indicate that most of the students' digital activities are characterized by interaction and consumption and not by creation.

Table 1: Students' leisure time activities

Activity	Average	Sd
Meeting friends (Ftf) *	3.88	1.02

Mobile games	3.67	1.13
Sport (outdoor) *	3.45	0.91
Watching TV	3.43	1.00
Information search	3.43	0.90
Social networks	3.38	0.90
Computer games	3.00	1.13
Reading *	2.71	1.17
Non digital games *	2.51	1.02
Homework (Digital platforms)	2.16	1.31
Hobbies activities and afternoon class	2.04	1.17
Volunteering *	2.04	1.00
SNS commenting	3.38	0.90
Internet shopping (with parents)	1.66	1.32
Creating presentations	1.50	1.31
Uploading pictures	1.32	1.59
Internet shopping (with out parents)	1.30	1.32
Creating videos	1.26	1.43
Uploading videos	1.22	0.95
Creating music	1.16	1.43

Note. *Non digital activity; The scale: 1 = does not do at all, 6 = every day, more than five hours a day).

Social Networks

It has been found that WhatsApp is the most popular social network among students. YouTube is also very popular among students. The use of Instagram and TikTok, however, is low, and Twitter, Pinterest, Facebook, and Snapchat are rarely used.

Table 2: Students' SNS uses

Social network	Average	Sd
WhatsApp	4.43	0.609
YouTube	3.75	0.848
Instagram	2.84	1.553
TikTok	2.45	1.686

Twitter	1.58	0.982
Pinterest	1.40	0.815
Facebook	1.34	0.702
Snapchat	1.29	0.640

Note. Scale: 1= not at all, 5= very much user

Digital Games

Computer games are played by students on a moderately frequent basis. The most popular computer games are strategy games, followed by sports, thinking, war, adventure, and construction games (in descending order).

Table 3: Students' digital games use

Digital games	Average	Sd
Strategy	2.90	1.249
Sport	2.78	1.474
Thinking	2.67	1.207
War	2.65	1.350
Adventure	2.28	1.334
Construction	2.12	1.225
Puzzle	2.03	1.096
Sudoku	1.64	0.967
Dress Up	1.39	0.921

Note. Scale: 1= not at all, 5= very much user

Information search

According to the findings, students search for a wide variety of information. The information that students look for most is about topics that they are interested in. After that, students search for information about music, translations from foreign languages, explanations of unfamiliar words, and information about people who interest them (in descending order).

Table 4: Students' information search

Information search	Average	Sd
Interest	3.78	0.960
Music	3.65	1.216
Translation	3.47	1.008
Definitions	3.34	1.057
People I'm interested in	3.02	1.176
School materials	2.81	0.969
Prices	2.72	1.159
Entertainment	2.51	1.133

Note. Scale: 1= not at all, 5= very much user

RQ2: What do their teachers know about their digital activities?

In the findings, gaps were revealed between the students' reported digital activities and what their educators assumed about them. Teachers were asked about three types of activities: social networking, computer games, and information searches.

Regarding the students SNS uses, The majority (52.9%) of teachers assumed that Tiktok was the most popular social networking site among their students (after WhatsApp). According to 29.4% of teachers, Instagram was the most popular SNS among their students, while only 17.6% recognized YouTube as the most common SNS.

However, as shown in table 2, YouTube is the most popular social networking site among students (after WhatsApp). Instagram and TikTok are not so popular among them.

It was also noted that there was a gap in students' use of computer games. The majority of teachers (76.5%) believe that their students spend a significant amount of time playing computer games, but only 17.6% believe that they play moderately.

In fact, the students report that they play about a couple of times a week on average (table 3). They play even the most popular game, strategy games, only occasionally (table 3).

According to our findings regarding search activity, teachers are aware that their students are searching for school materials at a medium level (teacher mean 2.47 std 0.800; students mean 2.81 std 0.969). However, 88.2% of teachers believed that their students searched extensively for videos (mean 4.35 std 0.861) and for games (mean 4.65 std 0.702).

RQ3: What are youth attitudes and recommendations towards integrating digital activities in learning?

As can be seen in table 5, students have a positive attitude toward the integration of technology in learning. As for challenges (table 6), we found that students do not believe that integrating technology into the classroom causes messy classrooms, distractions, wasted time or boredom.

Table 5: Students' attitudes towards technology integration

Items	Average	Sd
Promotes creativity and creative thinking	3.97	1.045
Promotes independent learning	3.88	1.005
Enhance the use of various teaching methods	3.78	1.053
Increase the students' interest in the lesson	3.74	1.227
Illustrate visually	3.54	0.944
Help to impart the learning material	3.50	1.112
Promotes active learning	3.43	1.164
Assist in practicing the learning material	3.42	1.041
Help to understand the learning material	3.42	1.021
Creating content in technological environments should be taught at school	3.40	1.234
Enable meaningful learning	3.39	1.120
Contributes to improving performance and outcomes	3.33	1.092
Assisting students with difficulties	3.22	1.111
Promotes text analysis skills (comparison, comparison, etc.)	3.22	1.062

Table 6: Attitudes towards technology integration challenges

Items	Average	Sd
In the classroom, technology creates a mess	2.72	1.125
Technology causes students' unnecessary distractions	2.89	1.062
The use of technology is causing a waste of time.	1.98	1.104
The use of technology is causing boredom and lack of interest in class	1.90	0.917

When we asked: if you were invited to a teachers' meeting and they were consulting with you about ways to use technology in school, what would be your suggestion? 54% of students choose to share their ideas. The analysis of this question raises three main themes: expend the use of technology. technology as an enhance for learning. students advocate for techno-pedagogy.

Expend the use of technology

In the analysis raise many expressions about the students wish to expand the use of technology in learning. They want more online activities and more presence of devices:

"Expending the use", "More technologies" "more online assignments" "use more computers."

Technology as an enhance for learning experience

The students' suggestions also expressed their need to improve the learning experience by using technology: "With technology, you can learn the material in a fascinating way instead of the dry way we do it now". Additionally, they recommend enhancing understanding through the use of a variety of technologies: There are many tools on the Internet that can help impart learning materials through digital visual means. For example, the Desmos website for graphs. This will both make it easier for the teacher and also give the students the opportunity to experiment and understand more.

Students advocate for techno-pedagogy

Interestingly, students also have creative suggestions on how to integrate technology into the classroom. They expressed techno-pedagogy understanding: "To make more presentations, so that the topics are divided among students, and they present them to the class", "to use more information search by digital means and not only using books", "At the end of each lesson, make a Kahoot on the material studied", "use presentations with questions and games", "I'd recommend three quarters of a regular learning lesson and one quarter of a technology lesson." And "watching videos on the Internet because they use visualization and help you learn". Table 7 reveals the students understanding the linkages between pedagogy and technology integration aspects in class.

Table 7: Students' attitudes towards the linkage between pedagogy and technology

Items	Average	Sd
Technology integration depends on the teacher	3.74	1.050
Integration of technology depends on the subject matter.	3.34	1.128

Discussion

Young people life in our days are immersed in digital platforms, during their leisure time activities (Jackman et al., 2021; Malak, et al., 2017). However, in schools, teacher are still challenge in integrating technologies in to their pedagogy (Evans, 2019; Putri et al., 2020). This study provides educators and policy makers with insights into students' digital lives in order to involve them in the development of new curricula and pedagogical approaches.

The findings reveal that students have a wide leisure activity, and they use diverse digital environments, for social interaction, content consumption and gaming. In line with the latest findings (Vogels et al., 2022), the students in our study mainly use WhatsApp and YouTube.

According to the study, there are three important pedagogical implications: First, students' digital activities are characterized by a high level of digital consumption and a low level of digital creation. Based on these findings, educators need to enhance digital creation activities in their pedagogical practices, since it is one of the new skills that are required in the digital age (Van Laar et al., 2017). Second, the students play in a wide range of computer games on a moderate basis. This can be used to improve pedagogical practices since computer games (for formal learning or leisure purposes) are found to enhance cognitive abilities, encourage motivation, raise engagement and promote knowledge construction, as well as digital learning games (Blumberg et al., 2019; Granic et al., 2014; Pan et al., 2022). Third, the students actively participating in non-formal information searching activities. During their free time, they search for information about their interests, music, world translation, and terms definitions. It should be noted, however, that they are not looking for a great deal of school materials.

Not surprisingly, the attitude of students towards the use of technology in the classroom is highly positive. Moreover, when we directly asked them about the challenges that technology integration brings into classrooms, they disagreed. Particularly noteworthy is their recommendation to teachers on how to use technology in the classroom. In light of these findings, it appears that students are capable of becoming partners and contributing to the process of TPACK assimilation. (Voithofer, et al., 2019).

Teacher-student partnerships are crucial, especially in light of the gap between students' digital lives and their teachers' knowledge of them. In order to enhance TPACK assimilation in relevant context in classes, we must make more efforts to listen to our students and integrate nonformal learning with formal learning.

References

- Anderson, M, Vogels, E.A, Perrin, A. and Rainie, L. (2022). Connection, Creativity, and Drama: Teen Life on Social Media. *Pew Research Center*, November 16, 2022. <https://www.pewresearch.org/internet/2022/11/16/connection-creativity-and-drama-teen-life-on-socialmedia-in-2022>
- Anderson, T., & Shattuck, J. (2012). Design-based research: A decade of progress in education research? *Educational researcher*, 41(1), 16-25
- Blumberg, F. C., Deater-Deckard, K., Calvert, S. L., Flynn, R. M., Green, C. S., Arnold, D., & Brooks, P. J. (2019). Digital games as a context for children's cognitive development: Research recommendations and policy considerations. *Social Policy Report*, 32(1), 1-33.
- Cook-Sather, A. (2020). Student voice across contexts: Fostering student agency in today's schools. *Theory into practice*, 59(2), 182-191.
- Creswell, J. W. (2013). *Research design: Qualitative, quantitative, and mixed methods approaches*. Sage publications
- Dunning, H., Williams, A., Abonyi, S., & Crooks, V. (2008). A mixed method approach to quality of life research: A case study approach. *Social Indicators Research*, 85(1), 145-158
- Eshet, Y. (2012). Thinking in the digital era: A revised model for digital literacy. *Issues in informing science and information technology*, 9(2), 267-276.
- Evans, J. A., & Project Tomorrow. (2019). *Digital learning: Peril or promise for our K-12 students*. <https://tomorrow.org/Speakup/speakup2018-19-Digital-Learning-Peril-or-Promise-october2019.html>
- Granic, I., Lobel, A., & Engels, R. C. (2014). The benefits of playing video games. *American psychologist*, 69(1), 66.
- Holquist, S. E. (2019). *Student Voice in Education Policy: Understanding student participation in state-level K-12 education policy making* (Doctoral dissertation, University of Minnesota).
- Jackman, J. A., Gentile, D. A., Cho, N. J., & Park, Y. (2021). Addressing the digital skills gap for future education. *Nature Human Behaviour*, 5(5), 542-545.
- Kennedy-Clark, S. (2013). Research by design: Design-based research and the higher degree research student. *Journal of Learning Design*, 6(2), 26-32

- Lubicz-Nawrocka, T. (2018). From partnership to self-authorship: The benefits of co-creation of the curriculum. *International Journal for Students as Partners*, 2(1), 47-63.
- Machisi, E. (2023). Secondary school mathematics teaching evaluations by students: A report card for the mathematics teacher. *Eurasia Journal of Mathematics, Science and Technology Education*, 19(1), em2211.
- Malak, M. Z., Khalifeh, A. H., & Shuhaiber, A. H. (2017). Prevalence of Internet Addiction and associated risk factors in Jordanian school students. *Computers in Human Behavior*, 70, 556-563.
- Pan, Y., Ke, F., & Xu, X. (2022). A systematic review of the role of learning games in fostering mathematics education in K-12 settings. *Educational Research Review*, 100448.
- Patton, M. Q. (2002). *Qualitative research & evaluation methods*. (3rd ed.). Thousand Oaks: Sage Publications, inc
- Putri, A. R. A., Hidayat, T., & Purwianingsih, W. (2020). Analysis of technological pedagogical content knowledge (TPACK) of biology teachers in classification of living things learning. In *Journal of Physics: Conference Series* (Vol. 1521, p. 042033).
- Reynaldo, C., Christian, R., Hosea, H., & Gunawan, A. A. (2021). Using video games to improve capabilities in decision making and cognitive skill: a literature review. *Procedia Computer Science*, 179, 211-221.
- Van Laar, E., Van Deursen, A. J., Van Dijk, J. A., & De Haan, J. (2017). The relation between 21st-century skills and digital skills: A systematic literature review. *Computers in human behavior*, 72, 577-588.
- Vogels, E. A., Gelles-Watnick, R., & Massarat, N. (2022). Teens, social media and technology. *Pew Research Center*, August 10, 2022. <https://www.pewresearch.org/internet/2022/08/10/teens-social-media-and-technology-2022>
- Voithofer, R., Nelson, M. J., Han, G., & Caines, A. (2019). Factors that influence TPACK adoption by teacher educators in the US. *Educational Technology Research and Development*, 67, 1427-1453.