

Hybrid Learning Through the Eyes of Current Lower Secondary School Teachers: A Pilot Study

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Abstract: Hybrid learning is a revolution in education that combines the best of face-to-face and online learning, offering students greater flexibility and personalisation. This dynamic approach not only enhances the quality of education but also reflects the changing needs of society. Therefore, the hybrid form of learning deserves intensive research to reveal its full potential and help to further improve it. The aim of this pilot research was to test the suitability of the main research methodology focusing on the views, attitudes and experiences of current lower secondary school teachers with hybrid learning. The pilot phase focused on testing a semi-structured interview with an emphasis on the clarity of the questions, the relevance of themes and the overall effectiveness of the data collection. Five teachers with varying levels of experience working with digital technologies, online teaching, and varying lengths of experience participated in the research. The purpose of this pilot research was also to obtain current lower secondary school teachers' perspectives on hybrid learning in the form of preliminary findings. A qualitative research design was chosen for this pilot research. A semi-structured interview was used as the research instrument. The research investigation was carried out in a face-to-face meeting with five teachers of a lower secondary school in the Czech Republic. The results of the pilot research helped to verify the functionality of the proposed research tool and to choose an appropriate direction for further research. The pilot research confirmed the suitability of the proposed questions for the semi-structured interview. The data obtained showed the lack of experience of the selected lower secondary school teachers with hybrid teaching, but at the same time these teachers had a lot of experience in using digital learning resources in face-to-face teaching. The results of the pilot research showed that the methodology was workable and no major modifications to the research design were necessary. These preliminary findings suggest key themes for the main research in which the sample will be expanded to include additional respondents. The data obtained outlined the views of lower secondary school teachers and how hybrid teaching could be organised.

Keywords: Pilot Research, Hybrid Teaching, Lower Secondary School Teachers, Semi-structured Interview, Covid-19.

1. Introduction

At a time when technology is becoming an integral part of everyone's life, it is common to harness its potential in the field of education. Online learning is now a well-known concept that almost everyone is familiar with, and in the wake of the Covid-19 pandemic, most teachers and learners across all levels of the education system have tried it. Hybrid learning is a slightly younger concept that has started to spread rapidly in the last few years, and therefore the benefits and effects on learning outcomes or learner motivation are beginning to be discussed.

The area of hybrid learning from the students' perspective has been addressed in several studies, but the perspective of lower secondary school teachers on this form of learning remains largely unknown and needs to be addressed. It is the teachers on whom the successful implementation of hybrid learning and learners' satisfaction with this form of learning and the realisation of its full potential depend. Therefore, it is crucial to understand the perception of hybrid learning from the perspective of current teachers to find the best way of implementing it that would suit teachers and at the same time contribute to greater learners' motivation and easier learning. To date, there is no qualitative study focusing on this topic, especially at the lower secondary school level, so this study seeks to fill this research gap and contribute to mapping this area.

The pilot phase of the research was primarily conducted to test the clarity and functionality of the proposed methodology for collecting qualitative data through semi-structured interviews with lower secondary school teachers. Another aim of the pilot research was to obtain preliminary results of these interviews on teachers' attitudes towards hybrid learning. The chosen research strategy focused on exploring teachers' views and attitudes towards hybrid learning, with the expectation that their insights would help to identify areas key to the proper implementation of hybrid learning with a view to maximising its potential and making it easy and effortless to prepare and implement in lower secondary school classrooms.

1.1 Hybrid Learning

Different authors explain the terms hybrid and blended learning in different ways. For example, Meeprom & Fakfare (2023) state that the terms are identical and that they are a way of teaching where elements of online learning are merely added to face-to-face learning. However, more common are definitions where the two terms are perceived differently, and each refers to a different form of learning. For example, authors Baker & Spencely (2023); Usher & Hershkovitz (2024) and Fabian et al. (2024) define the differences between the different forms of learning.

In this context, we will not confuse the term hybrid learning with terms such as blended learning, because the hybrid form has its own specificities. We talk about hybrid learning when learning is done in two ways simultaneously: some learners are physically present in the school together with the teacher, while other learners join the same lesson remotely via video chat. Simply put, it is a parallel combination of face-to-face and online learning, where both take place simultaneously in real time (Pramila-Savukoski et al., 2023; Baker & Spencely, 2023; Usher & Hershkovitz, 2024; Fabian et al., 2024). See Table 1 for the main comparison of the two forms of learning. However, to successfully manage this form of learning requires careful planning and organization to ensure that activities are appropriately distributed between learners in the classroom and those participating remotely (Rijst et al., 2023; Ahlgren et al., 2020). In contrast to the hybrid model, blended learning involves a gradual alternation of online and face-to-face learning, but never both forms occur simultaneously (Stoloff et al., 2022).

Table 1: Comparison of hybrid and blended learning

Criterion	Hybrid Learning	Combined Learning
Definitions	Simultaneous real-time engagement of face-to-face and online participants	Alternation of full-time and distance learning in separate blocks
Form of teaching	Synchronous - teaching takes place at the same time for all students (online and face-to-face)	Asynchronous - parts of the teaching are scheduled (e.g. a week online, a week face-to-face)
Technological requirements	High - need for quality audiovisual equipment, stable connection	Lower - need for digital platforms for the online part, but not necessarily in real time
Student interaction	Can be uneven (e.g. online students have less access to communication)	More even - each student participates in both forms at different times
Organizational complexity	High - coordination of two groups simultaneously	Medium - clearly separated parts, planning of rotation
Applicability	Where it is necessary to provide access to remote students at the same time	Where teaching can be divided into phases and the advantages of both forms combined

Hybrid learning therefore takes advantage of both forms (face-to-face and online learning) and combines them into one functional system. This model is often preferred abroad due to its flexibility and the possibility to adapt teaching to the individual needs of students (Rijst et al., 2023). In order to achieve a higher quality of learning, improve learners' performance and increase learners' motivation, it is crucial to make the most of the strengths of both modalities while eliminating their weaknesses. Moreover, according to Gamage et al. (2022), both learners and teachers express support for a gradual transition to hybrid learning. Restricting learners strictly to online instruction can lead to feelings of inferiority, but the choice of learning form offered by hybrid learning can ensure that all learners are satisfied and feel like full participants in the learning experience (Fabian et al., 2024).

There is already some research abroad on hybrid learning (e.g. Kee et al. (2024); Usher & Hershkovitz (2024); Fabian et al. (2024)), but to a lesser extent than that of online learning. For example, some studies have focused on factors that influence the effective organisation of this form of learning (Ahlgren et al., 2020). Unlike abroad, this topic has not received sufficient professional attention in the Czech Republic. As a result, there is a lack of uniform terminology and ambiguous definitions of key terms, which often leads to confusion in their use in practice.

The main benefit of hybrid learning is most often cited as its flexibility, which supports an individual approach to learning (Gamage et al., 2022). Interactivity is also an important element of hybrid learning, which helps to activate learners. In addition, one of the earlier international studies pointed out that learners' preferences for

different forms of learning and their performance in a hybrid environment can be influenced by their individual learning styles (Lin, 2008). Other research points out that the quality of hybrid learning and the satisfaction of all participants, is closely related to the level of Internet connectivity, the technologies used and the students' ability to use these tools (Martin-Nunez et al., 2022). Other research suggests that hybrid learning could be a suitable form for education in which, collaborative learning could be used as a method to facilitate interaction between learners and allow them to build their competencies together (Pramila-Savukoski et al., 2023). Hybrid learning can promote learners' autonomy and increase learners' satisfaction and learning outcomes, but it all depends on many different factors (Fabian et al., 2024).

On the other hand, Baker & Spencely (2023) concluded that learners were not actively engaged in learning through MS Teams when this platform replaced or supplemented face-to-face learning. Rather, the introduction of MS Teams represented a simple technological intervention without a deeper curricular innovation. At the same time, the authors point out the false assumption that young people are automatically technologically literate. In fact, they often lack the skills needed to use technology effectively for learning. Building on the experience of emergency online learning, it is therefore important to critically evaluate which technological interventions make sense and which do not. For digital learning resources (DLRs) to be truly beneficial, the purpose of their use needs to be clear, and appropriate training needs to be provided. Simply replacing face-to-face learning with online tools will not lead to the same result without a well-developed hybrid learning plan (Rath et al., 2019).

Hybrid learning cannot be seen as an isolated concept, as its nature is based on the interconnection with e-learning, online learning, but above all with various digital learning resources. It is the combination of online and face-to-face elements that forms the basis of this teaching strategy, which combines the advantages of both approaches and opens up new possibilities for individualisation and flexibility of learning. For this reason, one part of the developed interview questions focuses on online learning and another part on the use of digital learning resources in traditional face-to-face learning.

2. Methodology

The qualitative research method, namely semi-structured interview, was chosen for the pilot research. For the purpose of the semi-structured interview, 20 questions were developed. The first two questions were introductory and served to get to know the interviewee (subjects taught along with the reason for their selection and length of teaching experience). The main part of the interview was divided into three sub-areas. The first area mapped the experience of online learning during the Covid-19 pandemic. The second area built on this theme and explored the current state of the use of digital learning resources in teaching. The last area covered the whole interview on the topic of hybrid learning and sought teachers' opinions, ideas, recommendations and concerns about the possible implementation of this form of learning.

This interview has so far been piloted with a sample of five participants. The research investigation was carried out in a face-to-face meeting with teachers of a lower secondary school in the Czech Republic. The results of the pilot research helped to verify the functionality of the proposed research instrument, and it was not necessary to make major changes in the composition and wording of the questions in the semi-structured interview for further research. The data collected from the pilot research outlined the views of lower secondary school teachers on hybrid learning, how hybrid learning could be organised and the main issues that could arise.

For the purposes of this research, five teacher participants were selected with different lengths of experience, different subject areas, which may influence the diversity of backgrounds for working with digital learning resources, and all of these participants must have had experience of online learning during the Covid-19 pandemic. In the pilot phase of the research, responses were obtained from three men and two women, but gender was not a parameter for the selection of participants. The disciplines taught by these participants differed and overlapped. The subjects were physics, music education, civic education, and foreign languages. For further research, this research sample will be expanded to include additional teachers from this lower secondary school (to include teachers from other subject areas) as well as from at least one other lower secondary school that varies in location, size, and digital technology equipment until the research sample is saturated.

For the semi-structured interviews, the main research question was set: How do lower secondary school teachers perceive the opportunities and challenges associated with the implementation of hybrid learning? Each of the three parts of this interview then answered one of the sub-research questions: How has the Covid-19 pandemic affected lower secondary school teachers' teaching? How do lower secondary school teachers

integrate digital learning resources into their teaching? What problems/obstacles do teachers expect when implementing hybrid learning?

3. Results

Experiences with online learning during the Covid-19 pandemic varied considerably among the selected teachers. While some teachers experienced conventional synchronous online learning, others used an asynchronous form of online learning, and there was also a case where a given teacher implemented hybrid learning. All participants in the pilot research perceived online learning as useful in times of crisis. For some it was a challenging experience, but one that influenced their face-to-face learning. In the beginning of the pandemic, they were mainly faced with technical problems and uncertainty about how to structure the teaching in a new way. However, all teachers described that after some time they improved and became familiar with the Google Classroom platform, streamlined assignments and started to make better use of the DLRs. One participant stated "I think as a school we were well prepared technically. The first Covid period was without online learning, we just sent them (*learners*) some materials and they submitted some assignments. I was grateful when both my children saw the teacher and she explained it to them, and I was grateful that I could do it (*online teaching*)."

Based on their experiences with online learning, all participants have started to use DLRs in face-to-face learning. At the same time, they all agreed on the benefits that these DLRs have. Specifically, they stated, "They are meaningful, effective, they help the kid understand it better"; "It definitely improves teaching, otherwise I wouldn't use it."

However, a major problem with online learning for all participants remains the unstable internet connection and the passivity of some learners. One participant commented: "It's the age of the kids..." and stated that younger learners try to engage more in online learning than older ones. Similarly, another participant responded: "Of course they had things on at it (e.g. games), but they were trying their best, of course. There was a need to ensure the children's attention, so they weren't distracted by something else. Trying to keep them interested somehow. It was more tiring, both for me and for the kids."

The advantages and disadvantages of online learning mentioned by the teachers interviewed are consistent with the results of previous research. The positive side of online learning for some participants is the possibility of joining the class from the comfort of their home, the possibility of using a wide range of online tools, and above all the possibility of holding classes even in a crisis situation when face-to-face learning cannot be implemented. "They can work from home. It's taught me a lot, like (*using*) online tests." In addition, participants reported that the use of visual aids such as interactive whiteboards, visualizer, graphic tablet or screen sharing proved useful to help online learners to visually see the teacher's activity and better understand the interpretation of the material. One participant noted: "What I wrote, they saw immediately..."

Preliminary results of the pilot interviews showed that most teachers are prepared for the potential hybrid learning and are not worried about its implementation. However, teachers perceive this form of learning almost identically to online learning, along with its shortcomings and advantages. A participant who has already had experience with hybrid learning described his experience by saying: "I had my laptop open, and we were just going and occasionally I would hit someone who was online, I would turn it on (*if they were paying attention*). When someone from online was talking, I turned on the microphone and the class (*in attendance*) could hear it too. It wasn't that much of a cowboy thing, I just went to class and took the laptop with me."

All teachers interviewed agreed that they would implement hybrid learning in the same way as face-to-face learning, in which they all already use DLRs in different ways, mainly as a result of their experience with online learning. "I have started to incorporate that online practice much more often in that (*face-to-face*) learning." They would stick to proven teaching methods and ways of organisation, the only difference being the synchronous (video)call through which some learners would be connected online. Although most of the participants had no experience with hybrid learning, they were all familiar with this form of learning and shared a number of specific recommendations and suggestions that they found useful for the successful implementation of this form of learning. They repeatedly mentioned the importance of thorough lesson preparation and the ability to keep track of two groups of learners (physically present in the classroom and connected online). They considered a clear lesson structure and regular alternation of attention between the two groups to be essential.

Respondents' views on hybrid learning were neutral to slightly critical. Although they recognized the benefits of the hybrid model in terms of maintaining instruction in the absence of some of the learners, "I was grateful that the kids had that option." They considered this mode of teaching inappropriate for mainstream use in lower secondary schools. At the end of the interviews, participants emphasised that they saw hybrid learning as an emergency solution rather than a permanent model and considered it important that it should only be used when justified. "I see it as such an emergency option." All participants described that coordinating learning for two groups of learners at the same time requires significantly more focus and preparation than traditional face-to-face learning, e.g., one participant stated: "It's challenging to combine, but the option, why not." Despite this, all participants indicated that they felt prepared for the potential hybrid learning and could manage its implementation.

Preliminary findings from the pilot study confirm that the chosen method of semi-structured interviews is a suitable tool for capturing teachers' individual experiences and reflections on hybrid learning and the use of DLRs in face-to-face learning. The content of the interviews also indicated practical aspects of organizing hybrid learning.

These results of the pilot phase are presented in general terms without detailed analysis and interpretation and will therefore be further developed in the main phase of the research with a wider sample of interviewees. The pilot interviews will remain part of the data set as they meet the requirements for content and methodological relevance.

4. Conclusion

The results of the pilot research confirmed the appropriateness of the chosen research method and the semi-structured interview questions. The overall length of the interviews fulfilled the requirements for a quality interview providing sufficiently saturated answers to the research questions of the whole research, as stated e.g. by Švaříček et al. (2007).

The preliminary results of the pilot interviews confirm the findings of Usher & HersHKovitz (2024). Teachers in hybrid learning must make a greater effort to provide an equivalent learning environment and experience for online and face-to-face learners and therefore must sufficiently rotate their attention between the two groups of learners involved. Teachers, and probably learners, have learned to make more use of digital learning resources in face-to-face learning, to work with digital technologies, but above all to develop their digital competences through online teaching, as confirmed by e.g. the results of Bickle et al. (2019); Gamage et al. (2022); Stoloff et al. (2022). The participants in this research, like the authors Moise et al. (2021) or Yuhanna et al. (2020), agree that the biggest advantage of online learning is the ability to join the class from the comfort of home. At the same time, all participants agreed that the possibility of implementing online and hybrid learning is a great solution in times of crisis when learners cannot attend classes in person.

The pilot study involved five participants with different lengths of teaching experience, disciplinary focus and experience with online or hybrid learning. The interviews not only provided validation of the chosen research methodology but also outlined important areas that may be crucial for the implementation of hybrid learning in lower secondary schools. The chosen methodology allows the area of hybrid learning to be explored in depth, and thus to gain a comprehensive picture of how lower secondary school teachers perceive the opportunities and challenges associated with the implementation of hybrid learning. This pilot research now needs to be expanded to include a larger research sample until saturation occurs and the answers obtained no longer provide new information. Then, the data collected, i.e. the interview transcripts in text form, will be further processed and analysed in detail systematically through the method of response coding, thematic analysis and subsequent interpretation. The main output of the follow-up research will be a set of recommendations and guidelines for working in hybrid learning for current lower secondary school teachers, and at the same time a learning content for future teachers will be obtained, i.e. content for a subject to be taught at universities in preparation for teaching practice.

Ethics Declaration

Informed consent was obtained from all subjects involved in the research.

AI Declaration

The authors state that they did not use artificial intelligence tools to generate the text in this paper.

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