Proceedings of the 10th International Conference on Education, Vol. 10, Issue 1, 2024, pp. 63-79

ISSN 2424 - 6700 online
DOI: https://doi.org/10.17501/24246700.2024.10104

MODEL DEVELOPMENT FOR THE FUTURE OF DISTANCE LEARNING

Heinrich-Zehm M and S

Healt Care, Hamburger Fern-Hochschule, Germany

Abstract: This article deals with distance learning. Especially since the coronavirus pandemic, the boundaries between face-to-face and distance learning universities have become blurred. Technical developments and the changing legal framework have made it necessary to change the distance learning model. The aim of this article is to develop a model for the future of distance learning in Germany. To this end, the theoretical principles of synchronous and asynchronous teaching are first discussed and various tools that can be used in these forms of teaching are presented. A selected flipped classroom model was further developed and, among other things, the possible use of various tools in this model was demonstrated. The aim was to identify new possibilities for distance learning universities and to develop a new model for them.

Keywords: distance learning, flipped classroom, model, tools

Introduction

The outbreak of the coronavirus pandemic in 2020 has changed the education system worldwide. In many places, face-to-face events could not take place, and it was necessary to switch to the digital space. The resulting new living conditions not only brought with them many problems and unforeseeable risks but were also seen in many places as an opportunity to drive digitalization forward. With the new circumstances, such as the widespread availability of various options for mobile working and the use of new technologies, the demands of students are also changing. The trend study "Studying and working during the corona pandemic" revealed that opinions regarding online-based distance learning have changed. At the beginning of 2020, 50% of students were still critical of online-based courses. A study from 2022, however, shows that opinions have changed and over 90% of the respondents are interested in online seminars and online exams (APOLLON et al., 2022).

The expectations of students regarding digitalization have manifested themselves in the various forms of higher education institutions. Distance learning universities offer remote academic programs and courses. This means that students do not have to be physically present at a fixed location but receive the teaching materials and content via the internet, by post or various digital media. Online-based teaching has also become more established for face-to-face universities since the pandemic. As a result of this development, it is no longer possible to make a clear distinction between distance and face-to-face learning and they are even becoming increasingly intermingled.

Taking this background into account, this article focuses on the examination of different teaching concepts and tools for distance learning. Based on the theoretical foundations, a

*Corresponding Authors' Email: *m.heinrich-zehm@hamburger-fh.de*

model for distance learning is developed, which is constructed based on the inverted classroom. The research question for this article is as follows: What didactic-methodological aspects must a contemporary model of distance learning contain? Preceding the development of the model, some basic principles of synchronous and asynchronous teaching are outlined. This assumes that teaching within a distance learning program is primarily self-directed. This self-study is supported by different learning formats. To this end, the learning formats can take place online using a virtual learning room or in person at the university. Another option is the hybrid form, in which a face-to-face event is transmitted to students who cannot be on site with the help of a camera (usually a 360-degree camera). The hybrid learning format is a combination of elements of online and face-to-face teaching. The learning formats shown are supported with various digital or analogue tools in order to address the diverse learning habits and learning types of students. Different didactic principles, which are presented in more detail below, point the way forward.

2 Didactic concepts of competence acquisition

2.1 Basics of the synchronous and asynchronous teaching concept

In addition to the various online/presence and hybrid teaching formats, a distinction is made below between synchronous and asynchronous teaching. Synchronous teaching is characterized by the fact that the teacher and the students take part in the course at the same time. This can take place either in person or online. The advantage of synchronous face-to-face teaching is particularly recognizable in the social factors, as these predominate in this form of teaching due to the direct contact with the teacher. A disadvantage of this method is the low flexibility and the high additional costs due to the rent of the classroom. These disadvantages are compensated for with synchronous online teaching, but it is more difficult to create and support a group dynamic (TU Munich, 2022). The following table summarizes the advantages and disadvantages of synchronous teaching.

Table1: Advantages and disadvantages of synchronous teaching based on Technical University of Munich, 2022.

Advantages	**Disadvantages**
synchronous teaching in presence	
- Structured processes in the students' everyday lives	- Inflexible in terms of space and time
- Social interaction with other students and teaching staff	- More resource-intensive (larger space required)
- Networking	

- University atmosphere	
- The teacher can 'read' the room (mood, level of attention)	
- Interactive use of physical material possible	
synchronous teaching online	
- Spatially flexible	- Ability to concentrate must be higher
- Easy access to digital teaching material	- Teacher has difficulty 'reading' the room
- Easier access to digital tools	- It is more difficult to create a group dynamic
- Saves resources	○

In asynchronous teaching, on the other hand, the content is imparted independently of time. Nowadays, the option of purely analogue knowledge transfer, such as working on task sheets in a library, is rarely used. As a rule, this form of teaching is carried out online. Asynchronous online teaching offers the greatest possible flexibility in terms of time and location. It is the form of teaching that can be best customized to individual needs. One possible challenge here can be the lack of a contact person (TU Munich, 2022), but this can be effectively countered using AI support. The following table summarizes the advantages and disadvantages of asynchronous teaching.

Table 2: Advantages and disadvantages of asynchronous teaching based on Technical University of Munich 2022

Advantages	**Disadvantages**
asynchronous teaching online	
Customisation of the learning process (e.g. recordings can be viewed repeatedly) and the learning environment	Requires a high degree of self-discipline

Time can be adapted to private circumstances	Tasks must be formulated very precisely
No spatial constraints	The technical access requirements are the responsibility of the student (internet connection, computer etc.)
Self-determination and flexibility	Delayed response to open questions if no AI is used
	No spontaneous reactions/ queries from fellow students

The hybrid teaching concept attempts to combine the advantages of synchronous and asynchronous teaching as described above while at the same time reducing the existing disadvantages. The hybrid model combines face-to-face and online phases in a balanced ratio. The resulting asynchronous acquisition situations represent a significant advantage. These allow students to engage with the same content at different times. The different face-to-face and online phases also enable internal differentiation regarding different information channels and the individual speed of learning .The particular advantage of the synchronous face-to-face phases is that a synchronous exchange about the meaning of the content and the possibility of prompt feedback from teachers or fellow students is possible. Digital tools are also actively integrated into the learning process during the attendance phases. The synchronous attendance phases also enable students to get to know each other intensively at the beginning of the program, while the online phases offer the opportunity for flexible and time-delayed communication as the program progresses. It can be seen that the different aspects of the face-to-face and online phases promote the development of a common understanding of the respective information (Wipper & Schulz, 2021, p. 24). A hybrid model that combines both synchronous and asynchronous teaching methods offers the following advantages for the learning people and the teachers in remote environments:

1. flexibility: Learners have the opportunity to interact in real time as well as work through the content of the course at their own pace, promoting flexibility and adaptability.

2. interactivity: By combining synchronous and asynchronous elements, learners can interact with their peers and teachers in real time as well as engage in self-paced learning, which promotes interactivity and engagement.

3. individualization: the hybrid model allows learners to adapt their learning path according to their needs and accommodate different learning styles, resulting in an individualized learning experience.

4. effective communication: the combination of synchronous and asynchronous communication methods enables effective and versatile interaction between learners and teachers, resulting in improved communication and collaboration.

5. optimized learning outcomes: By using both synchronous and asynchronous teaching methods, the benefits of both approaches can be combined to maximize learning outcomes and create a holistic learning experience.

Overall, a hybrid model of synchronous and asynchronous teaching offers a balanced and versatile learning environment that utilizes the strengths of both approaches and provides learners with a comprehensive and effective learning experience (Wasdahl ,2020). All acquisition situations are characterized by actively working on tasks or problems by practicing and applying knowledge, resulting in a transfer of knowledge that leads to the acquisition of new knowledge content or skills. Social aspects play a key role in acquisition processes. For this reason, continuous support for students (feedback, consultation opportunities) and the facilitation of social exchange between students must be incorporated into the didactic concept (Wipper & Schulz, 2021, p. 19). These digital social spaces enable students to gain a deeper understanding of and engage intensively with the course content, for example by deliberately encouraging the discussion of personal viewpoints or in-depth reflection. This exchange is particularly relevant when dealing with complex issues and gaining insights that are subject to a constant process of change (e.g. professional attitudes of teachers) (Wipper & Schulz, 2021, p. 23).

2.2 Hybrid teaching model and inverted classroom

Three central didactic aspects can be recognized in more detail for the hybrid model:

- Providing learning content,

- designing tasks and

- enabling communication and cooperation.

Providing learning content

Regarding the provision of course content, different formats and variations of this content must be generated. This creates the necessary didactic internal differentiation, which also allows students a certain freedom of choice. Such variations of content include, for example, texts, images, videos, podcasts or animations that present the same content. This makes it possible to address the learning needs and learning preferences of the students, but also to maintain the motivation of the students. Ultimately, variations in content also generate varied and lively acquisition situations. Positive reciprocal effects, confrontations or irritations are particularly suitable for the acquisition of a professional attitude (self-competence) in order to generate motivating incentives to actively engage with the professional attitude. Likewise, a variety of practical examples and descriptions of specific situations can be used to create an application reference (Wipper & Schulz, 2021, p. 38 f.).

Design of tasks

Learning materials are embedded in a specific task context so that students can actively engage with the content in a goal-oriented manner. Tasks can support a purely receptive discussion, but can also be productive and creative. For example, an intensive critical text analysis/study analysis or a critical examination of a film example is carried out. Based on this, the acquired content is transformed by designing blogs or creating your own media (video, quiz, mind map). These are then made available to fellow students or the university public (Wipper & Schulz, 2021, p. 39 ff.).

Enabling communication and cooperation

Digital acquisition situations must offer the opportunity to share knowledge, exchange ideas with other learners and work together. Discourse on the course content or different work results must be made possible on an ongoing basis, e.g. through mutual feedback in the form of blog or forum posts. This provides the opportunity to comment on other students' contributions. It must also be possible to receive feedback on the current status of work from lecturers. Further possibilities for realizing cooperation and communication in digital appropriation situations are podcasts (discussion between two students on given questions), blog posts, Wikipedia entries, poster creation or articles. These articles are intended to encourage students to engage in an argumentative dialogue with other students by making a pro-vocative statement such as "Can learners teach better?" to deal with the course content in an argumentative way and to justify their own opinion (Wipper & Schulz, 2021, p. 41 ff.).

The media and didactic principles presented can be combined in the sense of the hybrid model presented as the Inverted Classroom Model (ICM) in order to conceptually design interactive and effective appropriation situations and thus enable greater learning success for students (Ulrich et al. 2021, 157). It should be noted that the inverted classroom model can also be recognized under terms such as flipped classroom, classroom flip, pre-vodcasting or reverse classroom method (Schäfer, 2012). The term flipped classroom will be used in this article. The model is based on the requirements of the specific learning group and must be didactically adapted to the specific context (Kenner & Jahn, 2017). The central objective is to allow a significant amount of time for joint engagement with the content (Schäfer, 2012). The central feature of the flipped classroom model is that the traditional phases of delivering content are interchanged (see Figure 1) (Schäfer, 2012).

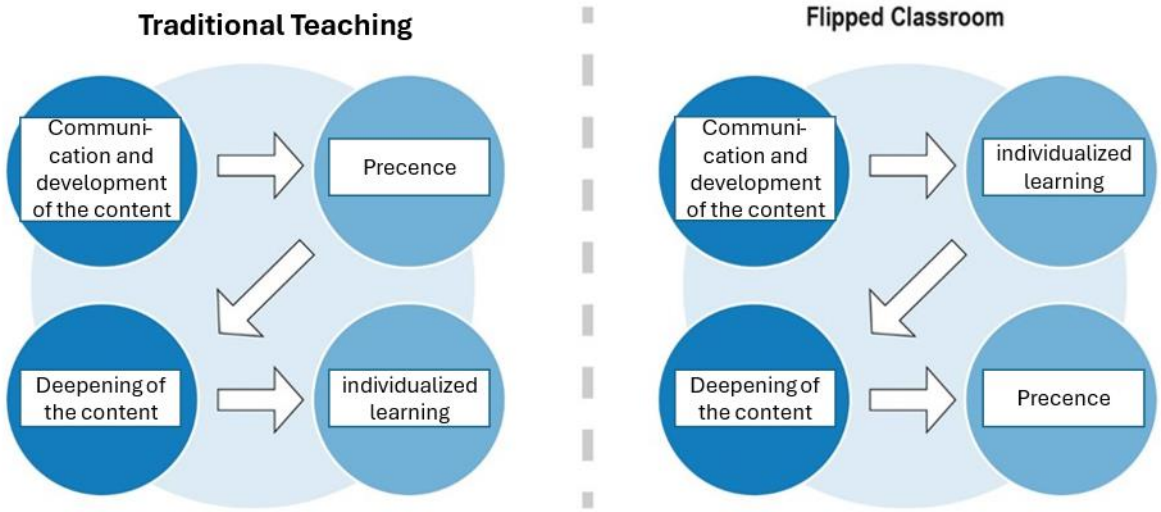

Figure 1: Traditional teaching vs. flipped classroom (own illustration quoted from Schäfer, 2012)

Therefore there is no knowledge transfer during the attendance phases - the thematic preparation for the appropriation situation takes place continuously using interactive and digital materials and media. The subsequent appropriation situation focusses on repetition, practice and supporting students when they encounter learning obstacles in order to reflexively expand their self-learning skills (Schäfer, 2012). Self-learning competence can be defined as a subdimension of professional competence as follows:

"Willingness and ability to understand and evaluate information about facts and contexts independently and together with others, and to categorize it into mental structures. In particular, learning competence also includes the ability and willingness to develop learning techniques and learning strategies at work and beyond and to use these for lifelong learning." (KKM 2011, P. 16)

The particular advantage of this didactic concept is that the individualization of teaching allows students to adapt the acquisition process to their individual needs (for example, they can work independently of time or place). The availability and direct support of teachers in the presence phase can promote active collaboration between students and also support self-learning skills (Schäfer, 2012). The various tools that can be used for both synchronous and asynchronous teaching in the flipped classroom model are considered in more detail below.

2.3 Tools for synchronous and asynchronous teaching

An important requirement for teachers when using the flipped classroom model is the digital processing of the learning content, which enables the described reversal of the phases. It is essential to ensure that learners acquire new content before the face-to-face phase. The

optional offer of additional literature made available online is not sufficient in terms of the flipped classroom model. Even the mere acquisition of information via a text does not fulfil the requirements of the model (Wipper & Schulz, 2021, p. 82 ff.).

The use of different tools, which are used both to transfer knowledge and to deepen knowledge, must be consciously incorporated into the didactic concept. A distinction is made between the use of tools in synchronous teaching, which is primarily used to deepen knowledge, and asynchronous teaching, which is used for both the acquisition and deepening of knowledge. The forms and strategies of synchronous teaching are described below.

Table 3: Tools for synchronous teaching - deepening knowledge

digital	**analogue**
- Video conferencing, - Virtual classroom, - Hybrid classroom and live transmission of classroom teaching, - Chat room with voice and/or writing function, instant messaging - Live webinars, - Virtual group discussions - Breakout sessions - Project work - VR exercises - AR exercises	- Frontal teaching in presence - Group work in presence - Project work

Digital tools can be used in synchronous online teaching, whereby the course takes place at a specific time but is independent of location. There are a variety of options for carrying out synchronous online lessons. For example, the teacher can hold the course via video conference or using a virtual classroom. It is also possible to hold group discussions together or in breakout sessions. Smaller project groups can come together, or content can be exchanged via messenger/chat rooms. Some institutions are already working with virtual reality, which gives students the opportunity to practically apply what they have learnt in a simulation.

Analogue tools can be used in synchronous face-to-face teaching, which corresponds to the classic teaching model. The students are present in a room with the teacher. Like this face-to-face teaching, or group/ project work can be carried out. Some institutions are already using

digital tools for synchronized classroom teaching by offering the opportunity to apply learned content with the help of augmented reality.

Table 4: Tools for asynchronous teaching - knowledge acquisition and consolidation

digital	**analogue**
- Online courses - E-mail - Blogs - Recorded webinars - Forums - Serious Games - Digital textbooks - Microlearning	- Library / Archive - Printed textbooks

Asynchronous teaching mainly takes place in the digital space. To this end, online courses can be created that can be linked to a variety of other tools. For example, teaching can take place with little interaction in the form of recorded webinars or PDF study letters, or with a higher degree of interaction in the form of serious games. Forums, blogs or e-mail newsletters can supplement the range of options. Analogue tools for asynchronous teaching include the use of libraries, archives or printed study letters. In addition to the tools for knowledge transfer during synchronous and asynchronous teaching, the self-learning skills of students are of central importance.

2.4 Self-learning skills

Self-learning competence is one of the key competences that enable students to use their own learning resources and skills as confidently and consciously as possible (Brauchle, 2008, p. 1). At the same time, the focus on self-learning competence during the degree program makes it clear that learning, rather than teaching, is now a key didactic focus (Geldermann et al., 2001, p. 38). Furthermore, self-learning competence is closely related to other terms such as self-organized, self-regulated, self-determined or self-directed learning (Roß & Nickel, 2022, p. 15). These terms intersect to describe the learning processes of students on a continuum between self-determination and heteronomy. Within this continuum, self-learning competence enables students to utilize individual, multidimensional and targeted scope for action, decision-making and design. Students can independently and self-determinedly organize and use learning objectives, content, methodological and media approaches, social forms, learning locations and learning times within this scope (Buddenberg, 2010, p. 3). Cognitive and motivational-emotional learning strategies, which also relate to online-based learning sources and tools, should be selected (Roß & Nickel, 2022, p. 15). When designing online-based programs, consideration must be given to the specific needs of distance learners. These are characterized by the fact that distance learners complete their studies alongside their job and

family and have extensive life and work experience. On the one hand, this represents a particular didactic challenge, but at the same time also a resource for coping with the demands of the degree program using existing learning strategies and self-learning skills. But learning difficulties due to negative learning experiences or learning outcomes in the previous learning biography can also be a reason for learning difficulties and thus for an underdeveloped self-learning competence (Buddenberg, 2010, p. 3 f.). However, self-learning competence can also support students in shaping the new experience of studying in a self-directed manner and in more consciously incorporating differences between previous biographical experiences and new experiences in part-time study programs into their own development (Dietze, 2015, p. 317). The successful self-management of the learning process depends on a complex set of conditions. The use of learning strategies is only one aspect of positively influencing learning success and motivation. Another important factor is the expectation of one's own learning success (self-efficacy expectation), which has a significant impact on the motivation to want to solve the tasks and problems. Knowledge of learning strategies alone is not enough, the motivation to apply these learning strategies is much more crucial for learning strategies to be applied and transferred. They must be recognized and practiced as an effective means of coping with and solving tasks. This makes it clear that the didactic concepts require a meaningful transfer of strategic knowledge that is both content-orientated and transfer-orientated. Confidence in one's own ability to learn (expectation of self-efficacy) must be particularly increased didactically (Buddenberg, 2010, p. 6).

With regard to this conceptual promotion of self-learning skills, Verena Buddenberg states the following:

"The ability to self-regulate learning can only be simply presupposed in a few cases. It must develop in a longer learning process that includes cognitive-strategic, emotional and motivational aspects as well as reflection on one's own learning situation (learning reasons, learning goals, learning constraints, learning resistance)." (Buddenberg, 2010, p. 7)

The individual and continuous promotion of self-learning skills during the study program is therefore a central didactic focus that also relates to digital tools (Roß &Nickel, 2022, p. 15). Reflection and self-evaluation of one's own learning path is an essential aspect of students' self-learning competence (Geldermann et al., 2001, p. 41). Learning progress and learning success must be individually recorded and evaluated. This does not only refer to the regular review of learning progress. The analysis of the different learning paths that have enabled the independent mastery of the tasks appears to be particularly important (Geldermann et al., 2001, p. 39).

It becomes clear that self-learning competence implies an increase in students' personal responsibility for their own learning path and a reduction in institutional control. It is also recognizable that students must receive appropriate support from the educational institution when acquiring this complex competence so that self-direction does not lead to students being overwhelmed. Institutional support therefore also includes taking the students' personal situation into account by consciously reflecting on the motivations for acquisition, the

disclosure of constraints and the search for room for maneuver (Buddenberg, 2010, pp. 2-7). Based on the theoretical foundations presented, a theoretical model for distance learning will be presented below.

3. Future model of distance learning

3.1 Basis of flipped classroom

The original structure of a flipped classroom is described in the following diagram on the left. It usually consists of the two processes of knowledge acquisition and knowledge consolidation. In the first process step (knowledge acquisition), students learn the theory independently. The various asynchronous teaching tools described in section 2.3 can be used for this purpose. The second process step of the flipped classroom model involves students consolidating the knowledge they have acquired themselves in a synchronous session. In a synchronous session, for example, students can ask questions that have arisen during the acquisition of knowledge. These questions should then be clarified in the group together with the teacher. Summarized, it can be said that students adopt a passive attitude during teaching at home, whereas they generally adopt a more active attitude when deepening their knowledge in the group (Sein-Echaluce et al, 2022, p. 2).

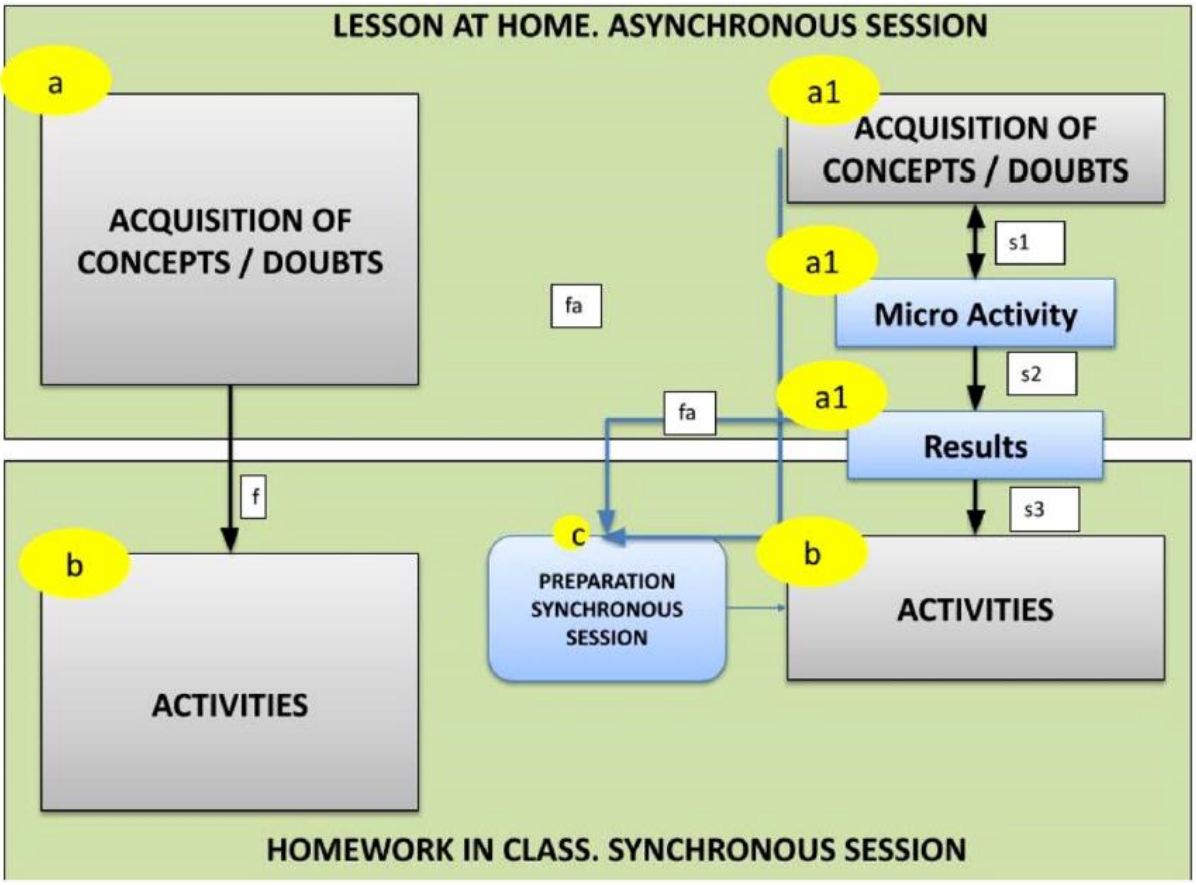

Figure 2: Flipped classroom, Sein-Echaluce et al. 2022, p. 3)

The authors around Sein-Echaluce have expanded the original flipped classroom model to include various elements, as shown in the above illustration on the right. Students should become active themselves during asynchronous teaching (knowledge acquisition). They are not expected to work through the entire content of a lesson in one go. The idea is that the students acquire the knowledge in smaller units. Each small learning unit is followed by a micro-activity, which measures the degree of knowledge acquisition and understanding. Based on the results of the micro-activities, teachers can decide what needs to be covered in greater depth in the synchronous course. In this way, questions of understanding can be clarified during synchronous teaching in the form of interaction with the students. The results of the micro-activities can encourage students to work with both incorrect and correct results. This encourages and promotes discussion, reflection and collaboration during synchronous teaching.

Teachers can either process the results of the micro-activities manually or have the results analyzed automatically by a learning management system. A learning management system offers a wide range of options for analyzing the results; for example, it can evaluate the terms viewed, processing time, forum contributions, etc. These results can be important for the preparation of the face-to-face course to deepen knowledge (Sein-Echaluce et al., 2022, p. 3f.). In the following chapter, Sein-Echaluce's et al. existing model will be expanded with various elements so that it is suitable for distance learning.

3.2 Deepening and transfer of knowledge with tools

The flipped classroom model seems very suitable for distance learning, as students can initially acquire the knowledge in the form of self-study. In a second step, they are given the opportunity to ask their questions in the attendance phases or to deepen their knowledge in a theory-practice transfer. However, a key challenge of the model is that students may not engage with the theoretical content intensively or independently. In some cases, they arrive at the attendance phases without any theoretical knowledge, in which the teacher must first teach the theoretical basics. The actual phase of deepening knowledge can therefore be shortened or not take place at all. Against this background, the model of Sein-Echaluce et al. is extended. For this purpose, the classic module system of a university is to be supplemented by a self-study management course and additionally organized self-study groups are to be set up. This is illustrated in the following diagram.

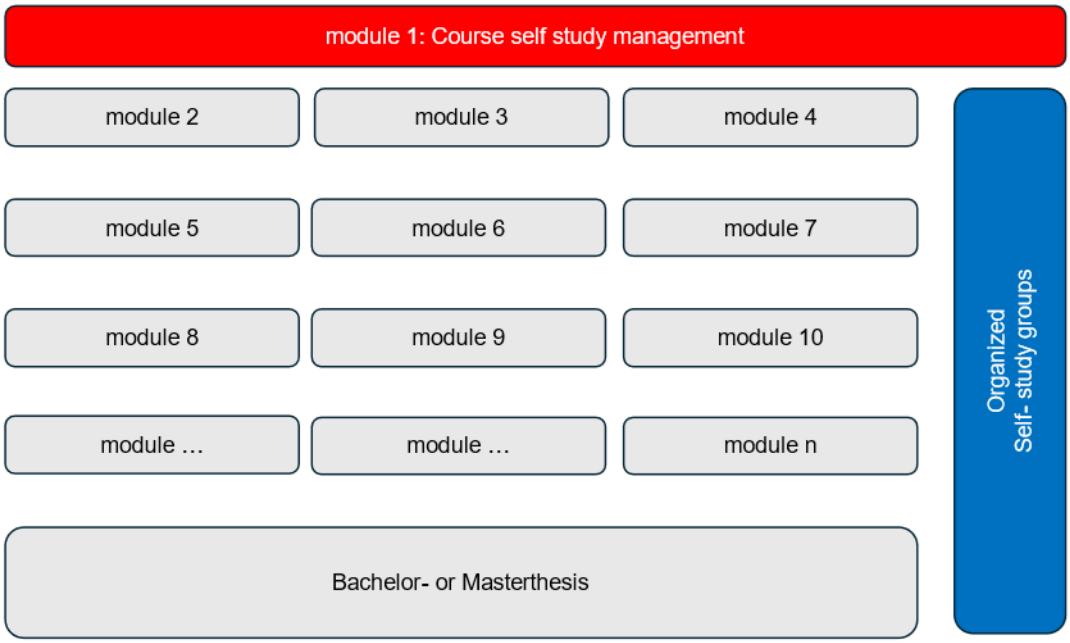

Figure 3: Extension of the flipped classroom model

At the beginning of every degree program at a distance learning university, there should be a standardized basic course on self-study management with the topics of time and self-management and learning methods during studies. This module can also be supplemented with elements from a module on academic work. The specific content of the module should include the different learning types, time management models and an explanation of the self-study group approach. In addition to the self-study management course, a distance learning university should set up organized self-study groups. The university provides a virtual room for this purpose at fixed times for each study cohort. In the self-study group, for example students work on and discuss the content of study letters. Students may divide the full course content into smaller units and create smaller excerpts independently. These are then presented to the other students in the self-study groups. An introduction to the self-study group system is also provided in the Self-Study Management module, among others. In addition to these two elements for promoting self-learning skills, the extended flipped classroom model is to be applied to the respective modules of a degree program. The individual elements of the model are presented for this purpose.

The model is structured in such a way that the pretest element can be an extension of the existing model and therefore represents the first process step. It does not necessarily have to be introduced in every module. When a module starts with a pretest, the student's level of knowledge is recorded. Based on this level of knowledge, the learning management software can prioritize the course content. At the beginning, the individual students are shown which topics they need to deal with more intensively or where they already have the required level of knowledge. After the pre-test, the second process step starts with the acquisition of knowledge.

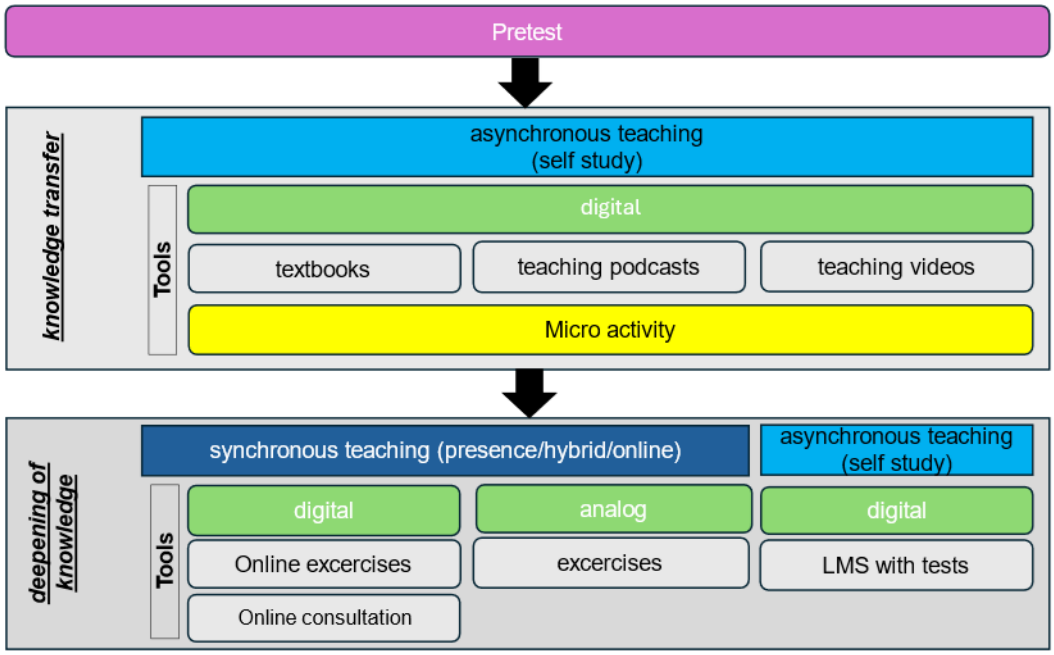

Figure 4: New model for distance learning with tools

The theoretical knowledge transfer takes place in the form of self-study with differently prepared tools and is purely asynchronous. Students can determine their own learning pace and the time of the self-study program. Furthermore, they are independent of time and place in the context of knowledge transfer. Written content (textbooks) can be used for knowledge transfer, as well as audiovisual or purely auditory elements. One component of knowledge transfer is the elaborated and written teaching in the form of study letters. In addition to the self-compiled study letters by academics at a university, textbooks (eBooks) or online specialist articles, for example, could also be made available to students. However, in addition to the written texts/books, the teaching content should be prepared for students using videos or podcasts. This means all the learning types are addressed. This model does not provide a solution for classic synchronous teaching, as is the case at face-to-face universities. In line with the Sein-Echaluce model, there will be micro activities to check whether the students have dealt with the theoretical principles (activity) and are deemed to have passed the course. The other option is that students must take small knowledge tests (micro activities) on an ongoing basis and can only take part in the knowledge consolidation once they have passed them.

Synchronous knowledge consolidation can be carried out either online, offline or hybrid. At this point, only exercises or colloquia with a limited scope should be offered in the sense of a university. The exercises/colloquia are held by internal or external lecturers or by student assistants. The content of the exercises must be designed by the professors or research assistants. This should include exercises with sample solutions. A small number of attendance or block courses can be offered for each module, but the main focus of the program is on acquiring knowledge.

In addition to the exercises or colloquia, there may be an online consultation (up to 2 hours per semester as a consultation hour) for each module, in which students can ask the module coordinator questions about the content. This face-to-face session can also be integrated into the virtual room as a forum function.

In addition to the synchronous deepening of knowledge, there should also be asynchronous elements for knowledge enhancement. These are made available in the form of learning management systems. The content of the system could, for example, consist of additional knowledge tests in the form of practice exams, reflection tasks or gamification, forums and blogs.

Another option for deepening knowledge should be mentioned at this point: synchronous additional courses (intensive course, e.g. introduction to corporate accounting) can be offered as a fee-based course. Students can book these as block courses in order to deal with very complex content in individual modules in greater depth.

4. Summary and outlook

This article deals with the question of what the didactic and methodological aspects of a distance learning university should look like today. The focus was initially on presenting the basics of synchronous and asynchronous teaching and working out their advantages and disadvantages. Special attention was paid to hybrid teaching and the flipped classroom model in particular was presented in more detail. These basics were followed by a presentation of various tools that can be used for teaching in a hybrid setting of synchronous and asynchronous teaching. An extended flipped classroom model according to Echaluche et al. was used and expanded to include various possible tools during the knowledge acquisition and knowledge consolidation phases. With the help of these extensions, it was possible to refer to the theory with regard to the aspects of a hybrid model. Thus, a hybrid model should provide learning content. This requirement is particularly taken into account in the acquisition of knowledge by making videos, podcasts or study letters available to students. They should acquire the knowledge in the form of self-study. To deepen their knowledge, students can solve tasks together in online or face-to-face exercises or deepen their own knowledge in the form of theory-practice transfer. With the help of knowledge transfer, the next requirement (design of tasks) is fulfilled with regard to a hybrid model. The last requirement to promote communication is taken into account in many places, but the fact of the community of students (social component) should not be underestimated. For this reason, a distance learning university should implement organized self-study courses for each study cohort. This measure helps to intensify communication among students. The model presented should be tested and evaluated in practice and, if necessary, adapted to the needs of the situation.

References

APOLLON Hochschule der Gesundheitswirtschaft, Europäische Fernhochschule Hamburg, & Wilhelm Büchner Hochschule. (2022). *Studieren und Arbeiten während der Corona-Pandemie*.

Baba, K., Elfaddouli, N.-E., & Cheimanoff, N. (2020). A Comparative Study of Synchronous and Asynchronous Learning during COVID-19 Crisis. Mohammadia School of Engineering, Rabat, Morocco. EMINES – School of Industrial Management, um6p, Ben Guerir, Morocco.

Brauchle, B. (2008). Der Rolle beraubt: Lehrende als Vermittler von Selbstlernkompetenz. bwp@ 13, 1-16.

Buddenberg, V. (2010). Vermittlung von Selbstlernkompetenzen. Theoretische Aspekte und ein praktisches Modell. MAGAZIN erwachsenenbildung.at. Das Fachmedium für Forschung, Praxis und Diskurs. 10. Wien.

Deutscher, V. K. (2019). Berufliche Handlungskompetenz und ihre Diagnostik: zwischen Bildungsanspruch und Verwertbarkeitserfordernissen. In J. Seifried, K. Beck, B.-J. Ertelt & A. Frey (Hrsg.), *Beruf, Beruflichkeit, Employability* (S. 95 – 116). Bielefeld: wbv.

Dietze, N. (2015). Einsatz von digitalen Medien zur Förderung der Selbstlernkompetenz im Fernstudium: Chancen und Herausforderungen. In R. Arnold, K. Wolf & S. Wanken (Hrsg.), Offene und kompetenzorientierte Hochschule. Band 1 zur Fachtagung „Selbstgesteuert, kompetenzorientiert und offen ?!“ (S. 315-329). Schneider.

Euler, D. (2020). Kompetenzorientierung in der beruflichen Bildung. In R. Arnold, A. Lipsmeier & M. Rohs (Hrsg.), *Handbuch Berufsbildung* (3. Aufl.) (S. 205 – 217). Wiesbaden: Springer.

Geldermann, B., Krauss, A. & Morh, B. (2001). Selbstständig lernen im Betrieb: Reflexion als zentrales Element der Selbstlernkompetenz. BWP 2, 38-41.

Kenner, A. & Jahn, D. (2017). Flipped Classroom – Hochschulleher und Tutorien umgedreht gedacht. In A. Eßer, H. Kröpke & H. Wittau (Hrsg.), Tutorienarbeit im Diskurs III - Qualifizierung für die Zukunft (S. 35 – 58). WTM.

KMK – Kultusministerkonferenz (2011). Handreichung für die Erarbeitung von Rahmenlehrplänen der Kultusministerkonferenz für den berufsbezogenen Unterricht in der Berufsschule und ihre Abstimmung mit Ausbildungsordnungen des Bundes für anerkannte Ausbildungsberufe.

KMK – Kultusministerkonferenz (2018). *Handreichung für die Erarbeitung von Rahmenlehrplänen der Kultusministerkonferenz für den berufsbezogenen Unterricht in der Berufsschule und ihre Abstimmung mit Ausbildungsordnungen des Bundes für anerkannte Ausbildungsberufe*. Bonn.

Oelke, U. & Meyer, H. (2014). *Didaktik und Methodik für Lehrende in Pflege und Gesundheitsberufen.* Berlin: Cornelsen.

Roß, D. & Nickel, J. (2022). Selbstgesteuertes Lernen in digitalen Lehr- Lernarrangements fördern – eine Perspektive für die Hochschullehre. In: Perspektiven auf Lehre. Journal for Higher Education and Academic Development, 2(1), 14–20. DOI: 10.55310/jfhead.20.

Schäfer, A. M. (2012). Das Inverted Classroom Model. In J. Handke & A. Sperl (2012). Das Inverted Classroom Modell. Begleitband zur ersten deutschen ICM-Konferenz (S. 3 – 10). Oldenburger Wissenschaftsverlag.

Sein-Echaluce, M. L., Fidalgo-Blanco, A., Balbin, A. M., Garcia-Penalvo, F. j. (2022). Flipped Learning 4.0. An extended flipped classroom model with Education 4.0 and organisational learning processes. Universal Access in the Information Society. https://doi.org/10.1007/s10209-022-00945-0

Tafner, G. (2018). „Der Sinn der Leistung kann nie ausschließlich in ihr selbst liegen" (Klafki). Ansätze zur Eigenständigkeit einer bildungstheoretisch fundierten beruflichen Didaktik. In T. Tramm, M. Casper & T. Schlömer (Hrsg.), *Didaktik der beruflichen Bildung – Selbstverständnis, Zukunftsperspektiven und Innovationsschwerpunkte* (S. 51 – 70). BiBB.

Technische Universität München (2022). *Leitlinien zur Wahl passender Lehrformen.* ProLehre Medien und Didaktik