

# Engagement in Learning in the Massive Open Online Course: Implications for Epistemic Practices and Development of Transformative Digital Agency with Pre- and In-Service Teachers in Norway

**Irina Engeness**

Østfold University College, Halden, Norway

ORCID: <https://orcid.org/0000-0001-5948-4992>, e-mail: [irina.engeness@hiof.no](mailto:irina.engeness@hiof.no)

**Magnus Nohr**

Østfold University College, Halden, Norway

ORCID: <https://orcid.org/0000-0002-7647-2886>, e-mail: [magnus.nohr@hiof.no](mailto:magnus.nohr@hiof.no)

This study examines how participants engage in learning in the Pedagogical Information and Communication Technology (ICTPED) Massive Open Online Course (MOOC) aimed to enhance Norwegian pre- and in-service teachers' professional digital competence. The study also provides an insight into how participants' engagement in learning in the ICTPED MOOC may have enhanced their transformative digital agency. Analyses of participants' engagement in learning draw on P.Y. Galperin's pedagogical theory. The data comprised 310 participants' responses to the questionnaire administered to all pre- and in-service teachers engaged in the ICTPED MOOC in 2016–2019. Mixed methods were applied for data analyses by providing quantitative and qualitative evidence about the participants' engagement in the course. Findings reveal that the majority of participants engaged in learning by reading the textual information embedded in the course. In doing so, they followed the sequential progression informed by the course design. Other participants engaged in learning by watching the videos and listening to the audio files embedded in the course as well as by attempting the assignments and other activities. By following these approaches, the participants created their individual learning trajectories and therefore may have enhanced their digital agency and affected the epistemic practices in the course.

**Keywords:** Online learning, Massive Open Online Course, epistemic practices, transformative digital agency, Galperin.

**For citation:** Engeness I., Nohr M. Engagement in Learning in the Massive Open Online Course: Implications for Epistemic Practices and Development of Transformative Digital Agency with Pre- and In-Service Teachers in Norway. *Kul'turno-istoricheskaya psikhologiya = Cultural-Historical Psychology*, 2020. Vol. 16, no. 3, pp. 71–82. DOI: <https://doi.org/10.17759/chp.2020160308>

## Introduction

This study examines participants' engagement in learning in the Pedagogical Information and Communication Technology (ICTPED) Massive Open Online Course (MOOC) aimed to enhance the professional digital competence (PDC) of pre- and in-service teachers in Norway. The study also provides an insight into how participants' engagement in learning may enhance their agency as independent and conscientious learners in digital environments. Research describes teacher PDC as a multifaceted concept that involves a wide range of knowledge, skills and attitudes required when using information and communication technology (ICT) in teaching and learning [26; 35; 36; 42]. Continuous advances in digital technology urge

teachers as professionals to constantly develop their digital competence [5] and, by engaging in teaching practices, enhance the development of their students' digital competence [21; 25; 49]. The emphasis on the developmental aspect makes teachers' PDC to be inherently connected with teacher agency as digitally competent teachers. Researchers have discussed the usefulness of MOOCs for enhancing teachers' professional development [8; 28; 29; 55]; however, little research has explored how teachers engage in learning in MOOCs with the aim of enhancing their PDC. This study addresses this gap by examining how pre- and in-service teachers engaged in learning in the ICTPED MOOC to develop their agentic capacity as digitally competent teachers. Such a discussion is timely in light of the current reflections on the epistemological

and ontological consequences of digitalisation that affect educational practices [32; 33; 53].

### **Epistemological and ontological aspects of transformative digital agency**

This study adopts the Vygotskian view on agency, wherein agency is considered as an active pursuit to develop human cognition within collective, material-semiotic activities embedded in the sociocultural world [50]. Participants engage in activities that are not only enacted and fluid but also continuously developed by them. Such a perspective emphasises the *ontological aspect* of human agency, positioning humans as the social actors and agentic co-creators of the practices they engage in. This resonates with the views and understandings of learners' agency as an ability to propel themselves forward while recognising and responding to the demands in tasks and with increasing competence, to reposition themselves within a knowledge domain [14; 37; 40]. Although such an agentic capacity is developed in learners through their individual contributions, the collective dimension is primary because each contribution is relational, representing a nexus of interactions with other people, history and the world [50]. In many ways, participants' engagement in learning in MOOCs can be seen as individual contributions to the collectively developed practices initiated by the team of MOOC designers. When engaging in learning, participants reposition themselves within these practices to move forward by creating their learning trajectories. To do so, students need to orient themselves among the variety of available resources and activities, select the appropriate ones and adopt them according to their learning needs. From this perspective, learners' digital agency in MOOCs reflects the capacity to select appropriate digital resources, utilise them in the learning activities and therefore reposition themselves in the knowledge (epistemic) practices in the pre-designed digital environments. Learners' digital agency is of transformative (ontological) nature [7] and may reflect the participants' growing capacity in learning to learn [16; 18]. Therefore, the digital agency that participants may develop by engaging in digital environments has epistemological and ontological grounds. The unique aspect of learning in MOOCs is that students' actions are embedded in digital learning environments and may therefore exemplify new *epistemic (embedded) practices* [51]. By engaging in such practices, learners may develop their *embedded cognition* [32; 53]. Understanding students' embedded practices is of primary importance for the design of digital learning spaces to enhance learning and the development of students as independent and conscientious learners. This complex matter can be addressed by examining how participants engage in learning to enact the design of MOOCs.

### **Learning activities in online courses and MOOCs**

The activities that students may engage in online courses constitute a learning design that is described as a

methodology to make informed decisions in how to design learning activities in digital spaces [10] and that may have a significant impact on learner experience [41]. G. Salmon [47] offers a five-stage model to design online learning courses: 1) access and motivation; 2) online socialisation; 3) information exchange; 4) knowledge construction and 5) development. This model is argued to possibly enhance online learning, favourable contributions, interactions among participants and increased student satisfaction. Based on the investigation of the frequently used pedagogical tools in 24 MOOCs, it was reported that although the pedagogical approaches had significant variations, most online courses utilised traditional classroom methods, such as lectures, group discussions and multiple-choice assignments [52]. The findings showed that students were more satisfied with online courses that included social interactions and reflections, and a major challenge for MOOC instructors was to create premises for students' interactions and engagement. J. Kasch et al. [27] designed a framework that integrates four common educational design principles to support formative assessment and feedback in MOOCs. The analyses results of utilising the framework in five cases studies indicated that providing quality feedback at a large scale with low teacher costs is challenging in MOOCs and this can be improved by adding scalable feedback methods, such as sum-up videos that respond to student needs and lectures videos that guide students through the several scenarios that can be applied in MOOCs. Improvements are also needed in multiple-choice assignments and can be achieved by increasing the diversity of question types and answer options [27]. Another review of 102 studies on learning and teaching in MOOCs identified four key learning and teaching factors: learner factors, teaching context, learner engagement and learning outcomes [13]. The authors reported that the systematic research on learning and teaching trends in MOOCs is limited and that the relationships between many learning and teaching factors in MOOCs have not been identified.

In an attempt to address participants' learning in MOOCs, the motivation and self-regulated aspects of learning in online environments have been investigated and the correlations between self-regulated learning behaviour and academic achievement have been identified [4; 24; 31; 48; 58]. The studies show that participation in MOOCs challenges learners to develop self-organisation and self-motivation as well as a reasonable amount of technical proficiency to manage the abundance of resources and the more open format of courses [34; 46]. These findings suggest that learning in MOOCs is complex and nuanced and that learners are in need of resources to enhance their agentic capacity to learn [18]. W.M. Rønning [43] examined the participants' motivation and other factors that contribute to their ability to complete online courses and revealed that participants are motivated by personal acknowledgement, career-related motivation and the need to enhance their professional knowledge and skills. The study further reported that although the contact among participants was scarce, the facilitation of participants' learning by the teachers was crucial for their completion of the course.

Other studies addressed the social aspects of learning in online environments. For example, C. Dalsgaard and M.F. Paulsen [12] argued that cooperative learning (comprising unique individual contributions of the participants) allows them to have optimal individual freedom within online learning communities. It has been indicated that both cooperative and collaborative learning may be enhanced in online environments [1].

Several studies have explored the potential of MOOCs for teacher professional development (PD) [8; 28; 29; 55]. PD MOOCs might support a co-learning model of the community of teachers by utilising the features of a co-learning approach: i) issue-focused discussion forums that elicit valuable community discussions, ii) peer-assessed assignments that enable teachers to learn from each other and iii) discussion forums linked to off-platform tools for sharing resources and ideas [29]. Researchers emphasise the importance of flexible training methods owing to the rapid technological changes, and the decreasing resources for the formal education of teachers [28]. Other researchers have suggested an approach to develop a free teacher PD MOOC and examined the participants' engagement and experience in the course [55]. The participation and engagement rates in this MOOC have been successful, and the use of the Google+ community to share and build a repository of online resources, the short concept videos, the flexible learning pathways, the blend of content and exemplars as well as breaking down of discipline language and concepts into relatable items have proven to be useful design features of the course.

Although studies indicate that the design of online courses, teacher facilitation, resources and the activities in these courses are of primary importance for participants' learning, they tend to lack details about how participants engage in learning and enact the designs of digital environments. We examined pre- and in-service teachers' engagement in learning in the ICTPED MOOC by zooming in with the lens of cultural-historical theory.

### Theoretical perspective

The founder of the cultural-historical theory, L.S. Vygotsky, suggested that human learning happens on the external (social) plane during practical tool-mediated activities. His argument was that tool mediation during practical activity initiates the changes in human consciousness and when applied in human activity these tools acquire special meanings and are internalised as signs. The tools used in the practical activity are externally directed to connect humans with the surrounding environment, whereas the tools transformed into signs are internally directed and lead to changes in the human consciousness to become the psychological functions of a person. This pathway reflects the processes of mediation, sociogenesis, and the internalisation of higher psychological functions. L.S. Vygotsky concluded that the process of sign mediation establishes new psychological functions and reorganises existing psychologi-

cal functions whereas the sign acts as the structural and functional centre of newly developed psychological functions. In doing so, a sign becomes *a tool* for creating the structural and systemic organisation of human consciousness [17; 44].

When applied to newly emerged digital technologies, the boundary between tools and signs becomes indistinct and even blurry as often digital tools, such as computers and mobile phones, acquire functional significance of signs when used, for example, to interact on social media or to engage in online games [44; 57]. In doing so, digital tools and signs interplay and undergo mutual transformations to create a new reality in which social interactions influence the development of human consciousness.

Although L.S. Vygotsky was very clear about the primary role of practical activity in the development of human consciousness, he mainly focused on the investigation of the role of tools and signs, while the role of the activity that employed these tools appeared to be downplayed. Having acknowledged the significance of the foundations laid by L.S. Vygotsky, A.N. Leontiev suggested that the development of human consciousness is determined by neither concepts and meanings nor tools and signs on their own but by real life [30]. Consequently, he identified the activity connecting an individual with the surrounding environment as crucial.

In the context of digital environments, students' activities (individual, social or cultural) are embedded in the new medium. Each new medium, for example digital learning spaces, such as MOOCs, gives rise to a new epistemology as the new medium produces its own typical practices and products, activities and cooperation forms, its means, tools and devices as a medium between man and environment [45; 56]. Understanding how humans act in such new media would seem to be crucial.

The advances made by A.N. Leontiev posed a further question about how tool-mediated activities may enhance learning and the development of students as learners. An answer to this question was given by P.Y. Galperin, who connected the advances of A.N. Leontiev with the conceptual foundations of L.S. Vygotsky [17]. Building on L.S. Vygotsky's understanding that the development of new psychological functions occurs through social interactions during tool-mediated activities, P.Y. Galperin extended the legacy of L.S. Vygotsky by showing how this process occurs through the phases of the development of mental actions [15; 20]. These phases reflect the process of the gradual transformation from external actions with material or materialised tools (materialised action) through social communication (communicated thinking) and individual speech (dialogical thinking) to a mental action (acting mentally) [15; 20]. The transformation from materialised action to communicated thinking happens during learners' interactions with material or materialised objects and in making sense of these objects in speech. In the phase of materialised action, the action is directed outside, and it connects the learner with external objects and the outside world. The transformation from communicated to dialogical thinking happens by substituting the exter-

nally oriented speech by its image. In dialogical thinking, the action is directed inside the learner in establishing communication with himself or herself (as another person). The learner's ability to perform an action in the form of dialogical thinking reflects the pathway the action has undergone from its materialised to its dialogical form [20].

By introducing the phases of the development of mental actions, P.Y. Galperin defined the double role of an action (i) to interact and communicate and (ii) to transfer the meaning of the sign. Based on these premises, a sign has a double meaning: (i) its original meaning and (ii) its acquired meaning, which depends on the action in which it is employed. The sign's original meaning is presented as the generalisation of the reality. The sign acquires its second meaning in the context of a specific practical human social activity and the pathway of the development of meaning reflects the pathway of the development of learner's understanding of the surrounding reality. Such premises have significant implications for understanding of how humans learn.

P.Y. Galperin suggested that learning can be understood as an orienting activity of humans within the existing epistemic knowledge practices and available resources [2; 22]. P.Y. Galperin argued that to plan an action, it is necessary to create an image of an action. Any human action has a complex structure comprised of orienting, executive and control parts. The orienting part comprises two subsystems, motivational and operating, the latter of which reflects students' engagement in learning which occurs through the four phases or types of actions: (1) constructing the image of the present situation, (2) identifying the potential of the available tools and resources for the needs of the student, (3) creating a plan of action and (4) facilitating the action during its execution. In the first phase, students are exposed to the target concept, problem or task that has to be solved and develop their understandings about the target concept. In the second phase, students identify the available resources and reveal their potential. In the third phase, by utilising the useful resources, students create a plan of action. Finally, in the fourth phase, the action is being performed by comparing the enacted action with the previously created plan of action [2; 17; 20]. These four types of action are not only complex but also different. However, they are similar in the presence of images of one kind or another: an image of the present situation, an image of the plan of action, or an image of the action that is being executed. In summary, there are two types of images: images of the surrounding reality and images of ideal actions which, according to P.Y. Galperin, are nothing more than real, substantive, and external actions with material objects. However, ideal actions do not appear by themselves; they have to be created, and it is important to find or create a material action from which an ideal action could be derived. These two types of images constitute the two main components of human orienting activity. The four types of actions described above reflect students' engagement in learning, which may happen in three different ways and are termed by P.Y. Galperin as three types of orientations. (a) Incomplete, where learning (the four types of action described

above) happens through trial and error. In this case, learning takes place slowly with many mistakes and is extremely sensitive to the slightest changes in the conditions of the learning situation. (b) Complete, where students are informed in detail about the characteristics of the target concepts and about how they will engage in learning. This implies that the students are equipped with all the necessary mediational resources and the plan of action (what to learn and how to engage in learning). In this case, learning happens quickly and with minimum mistakes; however, the transfer of skills and knowledge developed during such a learning process is possible only when performing similar tasks or in similar learning situations. (c) Complete and constructed by students following an approach aimed at identifying the essential characteristics of the target concepts. Using this approach, a specific orientation can be constructed by the students suited to solve the problem at hand. With this type of orientation, learning happens quickly, with minimum mistakes, and the skills and knowledge developed during the learning activity can be transferred to other learning situations. Students develop their understanding of how to go about learning, and their agency as independent and conscientious learners may be enhanced [15; 16]. These three types of orientations will be used as a lens to examine how the teachers engaged in learning in the ICTPED MOOC. Such use of P.Y. Galperin's theory is innovative, and we are interested to explore whether the lens of the types of orientations will help in our analysis of teachers' engagement in learning in digital environments. The following research questions are addressed:

RQ1: How did the pre- and in-service teachers engage in learning in the ICTPED MOOC?

RQ2: How can teachers' engagement in learning in the ICTPED MOOC contribute to enhancing their transformative digital agency?

## Method

### *Participants and setting*

Data were collected through the questionnaire administered online to all pre- and in-service teachers engaged in the ICTPED MOOC in 2016–2019 on the completion of the course. It aimed to examine the participants' learning experiences in the ICTPED MOOC. The questionnaire included the following: (a) general information about the participants, (b) participants' learning experiences in the ICTPED MOOC and (c) teachers' facilitating of the learning process in the ICTPED MOOC. The questionnaire included 33 questions; some questions applied a five-point Likert scale and some questions required detailed answers. Tab. 1 shows the number of respondents to the questionnaire in 2016–2019, their professional background and general evaluation of the ICTPED MOOC.

### *ICTPED MOOC*

The ICTPED MOOC was first introduced in Norway in 2016. The course was developed by researchers and development specialists from Østfold University College. The ICTPED MOOC has a structure of



an xMOOC; it is a built-in Canvas platform and aims to enhance the development of PDC with pre- and in-service teachers. xMOOCs is defined as institutionally focused, largely reliant on video resources and providing automated assessment through quizzes [3; 19], and all of these elements are present in the ICTPED MOOC. The ICTPED MOOC comprises eight modules to be completed by the participants over the course of 20 weeks.

Each module starts by introducing textual information (accessible as text on the page) and embedded research articles, complemented by relevant videos. Further, learners engage in individual tasks and reflection questions,

and they solve multiple-choice quizzes at the end of each module (summative assessment). Fig. 1 presents the typical structure of the modules in the ICTPED MOOC.

Small multiple-choice tests are used as formative assessment, and they are embedded in different places in the modules. Universal Design is integrated into the ICTPED MOOC, and audio files are embedded on every webpage. The participants can also download every module as an audio file, a podcast, a flat pdf file or an e-book. The list of the modules included in the ICTPED MOOC and the progress plan that the participants are to follow are presented in Tab. 2.

Table 1

The number of respondents to the questionnaire in 2016–2019 and their general evaluation of the ICTPED MOOC

Years	Number of respondents	Male/female mean (M)	Professional background (M)	General evaluation of the ICTPED MOOC mean (M) (SD)
2016–2019	310	Male M = 25.58% Female M = 74.43%	In-service teachers M = 73.4% Pre-service teachers M = 20.6% Other M = 8.8%	Very slightly satisfied M = 1.85% (1.65) Slightly satisfied M = 2.4% (2.41) Somewhat satisfied M = 6.76% (1.11) Strongly satisfied M = 52.96% (9.28) Very strongly satisfied M = 37.38% (10.82)

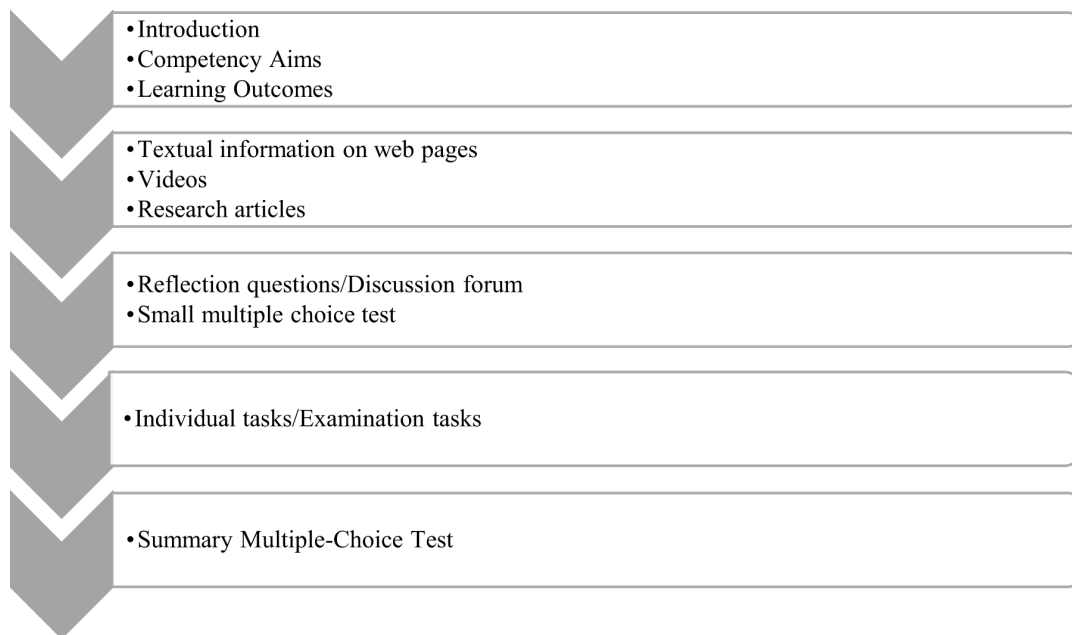


Fig. 1. The structure of the Modules in the ICTPED MOOC

Table 2

Progress plan and the modules in the ICTPED MOOC

Module	Progress plan (week)
0. Pre-course	2
1. ICT and learning	3–4
2. Digital studying techniques	5–6
3. Multimodal texts (examination module)	7–9
4. Cyber ethics	10–11
5. Classroom management in digital learning environments	12–13
6. Assessment for learning	14–16
7. Flipped classroom (examination module)	17–21

In several modules, participants are expected to give and receive feedback and submit examination assignments (in Modules 3 and 7). An example of the examination assignment included in Module 3 is presented in Fig. 2.

On successful completion of the ICTPEDMOOC (evaluated to pass and fail), participants are awarded 15 European credit transfer and accumulation system (ECTS) credits. Over 80% of participants passed the ICTPED MOOC in 2016–2019.

*Data and analysis*

To address the research questions in the study, the following questions were included in the questionnaire administered to the participants in the ICTPED MOOC in 2016–2019. (5) How did you usually engage in learning in the ICTPED MOOC? (Participants were to provide detailed descriptive answers.) (7) How did you use the available resources in the ICTPED MOOC? (Participants were to provide detailed descriptive answers.) (16) To what extent were the resources and activities in the ICTPED MOOC useful for your learning? (Applied on a five-point Likert scale.)

The data comprised 310 participants' responses to Q5, Q7 and Q16. All responses were anonymous and voluntary. Mixed methods [11] were applied to analyse the data by providing quantitative and qualitative evidence about participants' engagement in learning. To examine participants' learning in the ICTPED MOOC, responses to Q5 and Q7 were thematically analysed [6; 9]. The participants' responses were imported to NVivo 12 and coded by employing an inductive approach in the thematic analysis [6; 52] without any predetermined categories [39]. To uncover the thematic aspects, the detailed approach was ap-

plied, in which all sentences were individually examined with regard to their significance to the phenomenon [52].

The codes identified by the detailed approach were either presented in the form of a descriptive label that provided detailed description or taken from the participants' responses. These codes represented participants' activities and their learning trajectories in the ICTPED MOOC. Thereafter, the codes were put into context with each other to create themes that represent a bigger picture of what is being portrayed [6]. Thus, the single codes from the open coding process were grouped into larger themes to represent patterns of participants' engagement in learning in the ICTPED MOOC. These themes are presented in Findings. Once the themes were identified, they were examined through the analytic lens of P.Y. Galperin's types of orientations to examine how the participants' engagement in learning might have enhanced their transformative digital agency. To ensure the reliability of the results, thematic analysis of the participants' responses was conducted by the research team.

**Findings**

*Quantitative analysis of participants' learning activities in the ICTPED MOOC*

The participants' learning in the ICTPED MOOC is analysed by first examining their responses to Q16: *to what extent were the activities in the ICTPED MOOC useful for your learning?* (Tab. 3).

The data show that the majority of pre- and in-service teachers (M = 72.50%, SD = 14.20) found the activities in the ICTPED MOOC very useful. These findings indi-

**Creating a Multimodal text**

The main goal of this assignment is to remediate a self-selected monomodal text into a new, multimodal text. The multimodal text should be used as a self-produced teaching resource that provides added pedagogical value in relation to the original text. Use an analogous printed or digital text (monomodal) as a starting point for the remediation. The remediated, multimodal text will be put into a pedagogical context, and you should be able to argue why and how the remediated multimodal text will enhance the development of students' conceptual understanding.

You will need to submit the following three elements, which together constitute the examination assignment:

1. Original text (file/link)
2. Remediated, multimodal text (file/link)
3. Reflection video in which you reflect on the theoretical grounds to justify the chosen modes. In addition, you will need to reflect on the pedagogical value of the remediated text by explaining how the remediated text may enhance the development of students' conceptual understanding.

You may also write a declaration giving other participants the right to use your remediated texts in their teaching practice if they follow the copyright law in the correct manner.

Fig. 2. Examination assignment: Creating a Multimodal Text

Table 3

**Participants' responses about the usefulness of the resources and activities in the ICTPED MOOC for their learning**

Years	2016	2017	2018	2019	Mean (M)
Totally not useful	0%	2%	0%	0%	M = 0.50% SD = 1.00
Not useful	4.4%	2%	1.2%	0.9%	M = 2.13% SD = 1.59
Somewhat useful	4.4%	2%	2.4%	0%	M = 2.20% SD = 1.80
Useful	33.8%	30%	15.7%	12.1%	M = 22.90% SD = 10.61
Very useful	57.4%	64%	80.7%	87.9%	M = 72.50% SD = 14.20

cate the need to qualitatively examine how the teachers engaged in learning in the ICTPED MOOC.

*Qualitative analysis of participants' engagement in learning in the ICTPED MOOC*

The qualitative thematic analysis [6; 9] identified several themes that reflect how the participants engaged in learning in the ICTPED MOOC. Estimated using NVivo 12, the percentage coverage of the 'entry' activities is as follows: reading textual information (52.94%), watching videos (21.57%), engaging in assignments (9.80%), listening (7.84%) and other activities (7.86%). The data highlight the differences in the percentage coverage of the entry activities that the participants engaged in during the ICTPED MOOC. In what follows, we examine how the participants engaged in learning in the ICTPED MOOC in detail.

*Reading textual information*

The majority of participants engaged in learning in the ICTPED MOOC by first reading the textual information embedded in the webpages (Fig. 3)

The participants indicated that they engaged in learning by reading the textual information on the webpages and approached other activities in a different order: some participants watched the videos, took notes, completed the multiple-choice tests and engaged with the assignments. Other participants skimmed the textual information; in doing so, they might have obtained the overview of the target concepts and the structure of the module. Thus, having read the textual information, the participants were able to engage in other activities in the MOOC, utilise the available resources and advance in their learning.

*Watching videos*

A large group of participants engaged in learning in the ICTPED MOOC through watching videos (Fig. 4).

*I read the information, watched videos, completed the multiple-choice tests and engaged with the tasks.  
I first read the information, took notes and engaged with the tasks.  
I skim read all pages in the module, then watched the videos, attempted multiple-choice tests and completed the tasks. The structure of the modules is easy to follow. I like that every module finishes with a task that has to be submitted.*

Fig. 3. Participants' responses about their engagement in learning through reading

*I first watched the videos, read the information and completed the tasks.  
I listened to the videos, read the information and solved the multiple-choice tests.  
I watched the videos, completed the tasks and, in doing so, got familiar with the software.*

Fig. 4. Participants' responses about their engagement in learning through watching videos

*I first got familiar with the tasks, then watched the videos, read the textual information and, finally, solved the tasks.  
I attempted to solve one task every night. In some cases, two nights were needed to solve complicated tasks. I attempted the tasks first and then read the textual information in the module if it was necessary.*

Fig. 5. Participants' responses about engagement in learning through solving assignments

*I read and listened to the textual information, then watched the videos, completed the multiple-choice tests and solved the tasks.  
I first listened to all the audio files in the module. Then I engaged in other activities in the module.  
I read and listened to the textual information, paused and took notes and then engaged with the tasks.*

Fig. 6. Participants' responses about engagement in learning through listening to the information in the course

The participants indicated that they engaged in learning by watching the videos embedded in the ICTPED MOOC. Having watched/listened to the videos, they were able to engage in further activities; therefore, the videos might have been used as entry activities to develop the participants' understanding of the target concepts and how to achieve them.

*Engaging in assignments*

Several participants indicated that they engaged in learning in the MOOC by first attempting to solve the assignments in the course (Fig. 5).

Several pre- and in-service teachers indicated that the assignments in the module were used as a starting point to engage in learning in the MOOC. In doing so, the assignments might have been used as a lens to develop participants' understanding of the target concepts in the modules, select and utilise the useful resources and engage in other activities needed to solve these assignments.

*Listening to the textual information in the module*

The participants reported that they engaged in learning by listening to the textual information and videos in the course (Fig. 6).

The participants indicated that they listened to the audio files as support to read the textual information in the module. Other participants first listened to the textual information in the module and then engaged in the activities in the course. By first listening to the audio files, the participants might have created an overview of the content of the course and developed their understanding of the target concepts to engage in further learning in the ICTPED MOOC.

*Other activities*

Individual participants indicated that they engaged in learning by first collaborating with other students, by attempting multiple-choice tests or by converting the content

of the MOOC into e-books. These responses do not represent the patterns of participants' engagement in learning; however, by following a detailed approach to the thematic analysis [53], these participants' responses were also analysed and grouped under the theme 'Other activities' (Fig. 7).

In summary, the majority of pre- and in-service teachers engaged in learning in the ICTPED MOOC by reading the textual information and watching the videos embedded in the course. In doing so, the participants followed the progression suggested in the course. However, several pre- and in-service teachers indicated that they preferred to first skim read the content of each module. This might have contributed to creating an overview of the target concepts in the modules, the activities and the assignments they were to engage in. Other participants engaged in learning by familiarising themselves with the assignments and listening to the audio files. Individual participants first engaged in collaborative activities with other participants, converted the resources in the MOOC into an e-book and attempted multiple-choice tests. By pursuing alternative entry activities, the participants created their individual learning trajectories and therefore enacted the design of the ICTPED MOOC.

### Discussion

The analyses performed in this study focused on examining the types of activities the pre- and in-service teachers pursued to engage in learning in the ICTPED MOOC and the implications of participants' actions for enhancing their transformative digital agency by addressing the research questions: *how did the pre- and in-service teachers engage in learning in the ICTPED MOOC?* and *how can participants' engagement in learning in the ICTPED MOOC contribute to enhancing their transformative digital agency?*

The patterns of the participants' engagement in learning in the ICTPED MOOC are presented in Tab. 4.

*First*, the analyses revealed that the majority of pre- and in-service teachers engaged in learning in the ICTPED MOOC by reading textual information in the modules

and watching videos embedded in the course. This might potentially indicate the importance of textual and video resources in online courses. Other participants engaged in learning by getting familiar with the assignments and listening to the audio files. Individual participants engaged in learning by collaborating with other participants, attempting the multiple-choice tests and converting the content of the course into other, more convenient formats, such as e-books. From the perspective of P.Y. Galperin's theory, by engaging in these types of entry activities, the participants might have constructed the image of the learning situation in the ICTPED MOOC and revealed the potential of the available resources to engage in further activities in the course. These findings indicate that despite having a suggested sequential progression of the activities in the ICTPED (x)MOOC, participants may not follow this progression and engage in learning through different entry activities to create their individual learning trajectories. Participants' engagement in learning by watching videos, getting familiar with the assignments, listening to the audio files and engaging in other activities might reflect their attempts to develop their understanding about the target concepts and how to achieve them. Such an approach might indicate that to enact the design of the online course, participants are in need of explicit orienting information [20] about the content, target concepts, assignments, the available resources participants might utilise in their learning and the possible learning scenarios.

*Second*, P.Y. Galperin's types of orientations may serve as a cue to reveal how the pre- and in-service teachers' engagement in learning might have contributed to enhancing their transformative digital agency. From the perspective of P.Y. Galperin's types of orientations, the linear structure of the ICTPED MOOC reflects the complete orientation by offering the sequential progression of the activities that participants are to involve in while revealing the potential of the available resources. Such a sequential progression of activities may serve as step-by-step instructions for participants to advance in their learning. The analyses showed that approximately half of the participants followed the sequential progression offered by the structure of the MOOC. Others who did not follow the linear structure of the module

*I collaborated with other students before engaging in the tasks and multiple-choice tests.  
I attempted the multiple-choice tests before I engaged in other activities.  
I converted the content of each module into an e-book and transferred it to the iPad before I engaged in further learning.*

Fig. 7. Participants' responses about engagement in learning through collaborating, attempting multiple-choice tests and converting the resources into an e-book

Table 4

**Participants' engagement in learning in the ICTPED MOOC**

Type of activity	Percentage coverage, %	Description
Reading	52.94%	Reading textual information on the webpages and research articles
Watching videos	21.57%	Watching videos embedded in the course
Engaging with assignments	9.80%	Getting familiar with and attempting to solve the assignments
Listening	7.84%	Listening to the audio files of the textual information and the videos in the course
Other activities	7.86%	Collaborating with other students, attempting multiple-choice tests and converting the content of the MOOC into an e-book.



engaged in learning by creating the orientation of the third type: complete and constructed by learners by following a given approach. The entry activity chosen by the learners (watching the videos, engaging with the assignments, listening to the audio files, attempting multiple-choice tests, etc.) may have been used as an approach to construct their orientation to reveal the characteristics of the target concept and engage in further learning. For example, several participants first got familiar with the assignments in the modules and attempted to solve them. Participants' engagement with the assignments might have been used as an approach to develop their understanding of the target concepts and how to achieve them. Developing an understanding of the target concepts and creating an overview of the module might have been achieved by other participants who first listened to the audio files and watched videos and then proceeded to the other activities in the module. The individual participants who preferred to solve the multiple-choice tests, engage in collaborative activities with their peers or convert the available resources into another format might have pursued similar purposes: to create an overview of the course or, in P.Y. Galperin's terms, the image of the learning situation in the MOOC and reveal the potential of the available resources to construct their orientation for engaging in further learning. Such approaches to engage in learning might indicate participants' needs to construct their orientation and reflect the crucial importance of explicit orienting information that indicates what they will learn in the course (target concepts) and how to achieve them (the available resources, the assignments, multiple-choice tests, etc.).

*Third*, by constructing their unique learning trajectories according to the third type of orientation, the participants might have developed their understanding about how to engage in learning in digital environments. By creating their individual learning paths, the participants enacted the design of the course and therefore affected the epistemic practices in the ICTPED MOOC. However, both groups of participants (who followed the linear progression in the course and who engaged in learning through different entry activities) were able to reveal the potential of the available digital resources and therefore transform their learning by engaging with relevant digital resources; this might have contributed to enhancing their transformative digital agency. Over 90% of the participants expressed their satisfaction with the course in 2016–2019 and found the resources and the activities in the ICTPED MOOC useful.

To summarise, approximately half of the participants followed the structure suggested in the ICTPED MOOC and sequentially engaged in the activities offered in the course. By following such an approach, they might have been able to reveal the potential of the available digital resources, advance in their learning and therefore enhance their transformative digital agency. Other participants, by engaging in the course through different learning activities (watching videos, engaging with the assignments, listening to audio files, attempting multiple-choice tests, etc.) might have developed their understandings about the target concepts and about the learning in digital spaces. These participants might have not only enhanced their transformative digital agency but also affected the embedded epistemic practices in the course.

## Implications and directions for further research

There are several pedagogical implications for the design of MOOCs and online courses to facilitate participants' engagement in these courses.

*First*, the pre- and in-service teachers' engagement in learning in the ICTPED MOOC revealed that despite the linear structure of the course, the participants may not necessarily follow the suggested progression and may engage in learning through different activities in the course. This indicates that the structure of the ICTPED (x)MOOC may offer flexibility for participants to construct their individual learning paths.

*Second*, and perhaps a more profound implication is that the structure of the online course may affect how participants engage in learning in digital environments. The findings in this study showed that more than half of the participants followed the sequential order of the activities informed by the structure of the course and the remaining half engaged in learning through other activities by creating their individual learning trajectories. In doing so, the participants made their unique contributions to the epistemic practices in the ICTPED MOOC, co-authored and might have contributed to changing these practices. This study, therefore, raises questions about the need for course developers' awareness of how participants may engage in learning in digital environments and the importance of explicit orienting information about the target concepts and how to achieve them. Online courses in which participants can develop their conceptual grasp and understanding about how to go about learning may acquire a new functional significance by becoming a *tool* for studying the *essence of learning and how to go about it*. The pre- and in-service teachers' understanding about how to navigate and propel themselves forward in digital environments might contribute to enhancing their transformative digital agency [7] and, in a broader sense, teacher professionalism in the 21<sup>st</sup> century [38].

The *third* implication is that P.Y. Galperin's pedagogical theory appeared to be useful to analyse the participants' engagement in learning in the ICTPED MOOC. Such an approach may be employed to examine learning and teaching in digital environments to develop participants' conceptual grasp and enhance their capacity to learn online. Further research may, therefore, examine participants' learning in the digital environments designed according to the orientation of the third type to enhance their learning and capacity in learning to learn. The limitations of this study are that the analyses were based on the pre- and in-service teachers' reflections about their engagement in the ICTPED MOOC. Further research is therefore needed to examine the actual learning process of the participants in online environments.

These findings inform the practitioners, MOOC and online course developers about how participants may engage in learning in digital environments. They also emphasise the importance of awareness about how the design of digital environments may affect participants' engagement in learning and their agentic capacity to learn.

### References

1. Anderson T. Social software to support distance education learners. In Anderson T. (ed.), *The Theory and Practice of online learning*, Alberta, Canada: Athabasca University Press, 2008, 2nd ed., pp. 221–241.
2. Arievidtch I. M. Beyond the brain: An agentive activity perspective on mind, development, and learning. Rotterdam, NE: Sense Publishers, 2017.
3. Armellini A., Padilla Rodriguez B.C. Are massive open online courses (MOOCs) pedagogically innovative? *Journal of Interactive Online Learning*, 2016. Vol. 14 (1), pp. 17–28.
4. Azevedo R., Hadwin A. F. Scaffolding self-regulated learning and metacognition—Implications for the design of computer-based scaffolds. *Instructional Science*, 2005, 33 (5), 367–379.
5. Bowen W.G., Finegan T.A. The economics of labor force participation. Princeton, NJ: Princeton University Press, 2015. Vol. 2054.
6. Braun V., Clarke V. What can “thematic analysis” offer health and wellbeing researchers? *International journal of qualitative studies on health and well-being*, 2014. Vol. 9, p. 26152.
7. Brevik L.M., Gudmundsdottir G.B., Lund A., & Strømme T. A. Transformative agency in teacher education: Fostering professional digital competence. *Teaching and Teacher Education*, 2019. Vol. 86, p.102875.
8. Castaño-Muñoz J., Kalz M., Kreijns K., Punie Y. Who is taking MOOCs for teachers’ professional development on the use of ICT? A cross-sectional study from Spain. *Technology, Pedagogy and Education*, 2018. Vol. 27 (5), pp. 607–624.
9. Castleberry A., Nolen A. Thematic analysis of qualitative research data: Is it as easy as it sounds? *Currents in Pharmacy Teaching and Learning*, 2018. Vol. 10 (6), pp. 807–815.
10. Conole G. Designing effective MOOCs. *Educational Media International*, 2015. Vol. 52 (4), pp. 239–252.
11. Creswell J. W. Qualitative inquiry and research design: Choosing among five approaches. Thousand Oaks: SAGE, 2012.
12. Dalsgaard C., Paulsen M.F. Transparency in cooperative online education. *The International Review of Research in Open and Distributed Learning*, 2009. Vol. 10 (3). Retrieved from <http://www.irrodl.org/index.php/irrodl/article/view/671/1267>
13. Deng R., Benckendorff P., Gannaway D. Progress and new directions for teaching and learning in MOOCs. *Computers & Education*, 2019. Vol. 129, pp. 48–60.
14. Edwards A. Designing tasks which engage learners with knowledge. In Thompson I. (ed.), *Designing Tasks in Secondary Education: Enhancing Subject Understanding and Student Engagement*. New York: Routledge, 2015, pp. 13–27.
15. Engeness I. What teachers do: facilitating the writing process with feedback from EssayCritic and collaborating peers. *Technology, Pedagogy and Education*, 2018. Vol. 27 (3), pp. 297–311.
16. Engeness I. Teacher facilitating of group learning in science with digital technology and insights into students’ agency in learning to learn. *Research in Science & Technological Education*, 2020. Vol. 38 (1), pp. 42–62. DOI:10.1080/02635143.2019.1576604
17. Engeness I., Lund A. Learning for the future: Insights arising from the contributions of Piotr Galperin to the cultural-historical theory. *Learning, Culture and Social Interaction*, 2018. Epub ahead of print, 6 December, 2018. DOI:10.1016/j.lcsi.2018.11.004
18. Engeness I., Nohr M., Singh A. B., Mørch A. Use of videos in the Information and Communication Technology Massive Open Online Course: Insights for learning and development of transformative digital agency with pre- and in-service teachers in Norway. *Policy Futures in Education*, 2020. DOI:10.1177/1478210319895189
19. Fidalgo-Blanco Á., Sein-Echaluce M.L., García-Peñalvo F.J. From massive access to cooperation: lessons learned and proven results of a hybrid xMOOC/cMOOC pedagogical approach to MOOCs. *International Journal of Educational Technology in Higher Education*, 2016. Vol. 13 (1), p. 24.
20. Galperin P.Y. Lectures in Psychology, 2002, Moscow: Knizhnyy Dom Universitet.
21. Gudmundsdottir G.B., & Hatlevik O.E. Newly qualified teachers’ professional digital competence: implications for teacher education. *European Journal of Teacher Education*, 2018. Vol. 41 (2), pp. 214–231.
22. Haenen J. Piotr Galperin: Psychologist in Vygotsky’s footsteps. Commack, NY: Nova Science, 1996.
23. Ho A., Chuang, I., Reich J., Coleman C., Whitehill J., Northcutt C., Petersen R. HarvardX and MITx: Two years of open online courses fall 2012-summer 2014, 2015. Available at SSRN 2586847.
24. Hood N., Littlejohn A., Milligan C.. Context counts: How learners’ contexts influence learning in a MOOC. *Computers & Education*, 2015. Vol. 91, pp. 83–91.
25. Ilomäki L., Paavola S., Lakkala M., Kantosalo A. Digital competence—an emergent boundary concept for policy and educational research. *Education and Information Technologies*, 2016. Vol. 21 (3), pp. 655–679.
26. Instefjord E.J., Munthe E. Educating digitally competent teachers: A study of integration of professional digital competence in teacher education. *Teaching and Teacher Education*, 2017. Vol. 67, pp. 37–45.
27. Kasch J., Van Rosmalen P., Kalz M. A Framework towards Educational Scalability of Open Online Courses. *Journal of Universal Computer Science*, 2017. Vol. 23 (9), pp. 845–867.
28. Kleiman G. M., Wolf M. A., Frye D. The digital learning transition MOOC for educators: Exploring a scalable approach to professional development. *Friday Institute for Educational Innovation, College of Education*. NC State University 2013. Retrieved from <http://bit.ly/1NomGES>
29. Laurillard D. The educational problem that MOOCs could solve: professional development for teachers of disadvantaged students. *Research in Learning Technology*, 2016. Vol. 24, p. 29369.
30. Leontiev A. The development of the psyche. Lisbon: Horizonte University, 1978.
31. Littlejohn A., Hood N., Milligan C., Mustain P. Learning in MOOCs: Motivations and self-regulated learning in MOOCs. *The Internet and Higher Education*, 2016. Vol. 29, pp. 40–48.
32. Ludwig D. Extended cognition and the explosion of knowledge. *Philosophical Psychology*, 2015. Vol. 28 (3), pp. 355–368.
33. Lynch M.P. Neuromedia, extended knowledge and understanding. *Philosophical Issues*, 2014. Vol. 24 (1), pp. 299–313.
34. Mazoue J. G. *The MOOC Model: Challenging traditional education*. EDUCASE Review Online, 2014. Retrieved from <http://www.educause.edu/ero/article/mooc-model-challenging-traditional-education>
35. McGarr O., & McDonagh A. *Digital competence in teacher education*. Output 1 of the Erasmus+ funded Developing Student Teachers’ Digital Competence (DICTE) project, 2019. Retrieved from <https://dicte.oslomet.no>

36. Mishra P., & Koehler M.J. Technological pedagogical content knowledge: A framework for teacher knowledge. *Teachers College Record*, 2006. Vol. 108 (6), pp. 1017–1054.
37. Mäkitalo A. On the notion of agency in studies of interaction and learning. *Learning, Culture and Social Interaction*, 2016. Vol. 10, pp. 64–67.
38. OECD. *Supporting Teacher Professionalism*. Insights from TALIS 2013, 2016. Retrieved from [https://read.oecd-ilibrary.org/education/supporting-teacher-professionalism\\_9789264248601-en#page1](https://read.oecd-ilibrary.org/education/supporting-teacher-professionalism_9789264248601-en#page1).
39. Patton M.Q. *Qualitative research and methods: Integrating theory and practice*. Thousand Oaks, CA: SAGE Publications, 2015.
40. Rajala A., Martin, J., Kumpulainen K. Agency and learning: Researching agency in educational interactions. *Learning, Culture and Social Interaction*, 2016. Vol. 10, pp. 1–3.
41. Rienties B., Toetnel L. The impact of learning design on student behaviour, satisfaction and performance: A cross-institutional comparison across 151 modules. *Computers in Human Behavior*, 2016. Vol. 60, pp. 333–341.
42. Røkenes F.M., Krumsvik R.J. Development of student teachers' digital competence in teacher education—A literature review. *Nordic Journal of Digital Literacy*, 2014. Vol. 9 (04), pp. 250–280.
43. Rønning W.M. *Nettskolestuder – motiver, mestring og ambisjoner*. Trondheim: Insitutt for voksnes læring, 2013. Retrieved from <http://www.nitus.se/wpcontent/uploads/2013/11/nettskolestuder.pdf>.
44. Rubtsova O.V. Digital Media as a New Means of Mediation (Part One). *Kul'turno-istoricheskaya psikhologiya = Cultural-Historical Psychology*, 2019. Vol. 15 (3), pp. 117–124. DOI:10.17759/chp.2019150312. (In Russ.)
45. Rückriem G. Digital technology and mediation – a challenge to activity theory. *Kul'turno-istoricheskaya psikhologiya = Cultural-Historical Psychology*, 2010. Vol. 4, pp. 30–38.
46. Saadatmand M., & Kumpulainen K. Participants' perceptions of learning and networking in connectivist MOOCs. *MERLOT Journal of Online Learning and Teaching*, 2014, 10 (1), 16–30.
47. Salmon G. *E-tivities: The key to active online learning*. London: Routledge, Falmer, 2013.
48. Serdyukov P., Hill R. Flying with clipped wings: Are students independent in online college classes. *Journal of Research in Innovative Teaching*, 2013. Vol. 6 (1), pp. 52–65.
49. Starkey L. A review of research exploring teacher preparation for the digital age. *Cambridge Journal of Education*, 2020. Vol. 50 (1), pp. 37–56. DOI:10.1080/0305764X.2019.1625867
50. Stetsenko A. *The transformative mind: Expanding Vygotsky's approach to development and education*. New York, NY: Cambridge University Press, 2017.
51. Säljö R. Literacy, digital literacy and epistemic practices: The co-evolution of hybrid minds and external memory systems. *Nordic Journal of Digital Literacy*, 2012. Vol. 7 (01), pp. 5–19.
52. Toven-Lindsey B., Rhoads R.A., & Lozano J.B. Virtually unlimited classrooms: Pedagogical practices in massive open online courses. *The Internet and Higher Education*, 2015. Vol. 24, pp. 1–12.
53. Vaesen K. Dewey on extended cognition and epistemology. *Philosophical Issues*, 2014. Vol. 24 (1), pp. 426–438.
54. Van Manen M. *Phenomenology of practice: Meaning-giving methods in phenomenological research and writing*. New York: Routledge, 2016.
55. Vivian R., Falkner K., & Falkner N. Addressing the challenges of a new digital technologies curriculum: MOOCs as a scalable solution for teacher professional development. *Research in Learning Technology*, 2014. Vol. 22. DOI:10.3402/rlt.v22.24691
56. Voiskounsky A.E. Internet – novaya oblast' issledovaniy v psichologicheskoi nauke [The Internet as a new realm of psychological science]. *Uchenye zapiski kafedry obschey psikhologii MGU [Scientific notes of the department of general psychology of Moscow State University]*. Moscow: Smysl, 2002. Issue 1, pp. 82–101.
57. Voiskounsky A.E. *Psikhologiya i Internet [Psychology and the Internet]*. Moscow: Acropol', 2010. 439 p.
58. Wang C.-H., Shannon D. M., Ross M. E. Students' characteristics, self-regulated learning, technology self-efficacy, and course outcomes in online learning. *Distance Education*, 2013. Vol. 34 (3), pp. 302–323.

## Обучение в контексте массового открытого онлайн-курса: значение для эпистемических практик и развития трансформирующей цифровой агентности у будущих и работающих учителей в Норвегии

Ирина Энгенесс

Университетский колледж Эстфолл, Халден, Норвегия  
ORCID: <https://orcid.org/0000-0001-5948-4992>, e-mail: [irina.engeness@hiof.no](mailto:irina.engeness@hiof.no)

Магнус Нур

Университетский колледж Эстфолл, Халден, Норвегия  
ORCID: <https://orcid.org/0000-0002-7647-2886>, e-mail: [magnus.nohr@hiof.no](mailto:magnus.nohr@hiof.no)

Настоящее исследование посвящено тому, как участники массового открытого онлайн-курса (MOOC) «Информационные и коммуникационные технологии в педагогике», направленного

на повышение профессиональной цифровой компетентности у будущих и уже работающих норвежских учителей, включаются в процесс собственного обучения. Также оно дает представление о том, как характер вовлеченности в обучение влияет на трансформирующую цифровую агентность (transformative digital agency) участников MOOK. В своем анализе мы опирались на педагогическую теорию П.Я. Гальперина. Данные включают в себя ответы 310 респондентов на опросник, предьявлявшийся всем будущим и действующим учителям, обучавшимся в рамках MOOK с 2016 по 2019 год. Для получения количественной и качественной информации о характере включенности участников курса в обучение были применены комбинированные методы анализа данных. Результаты исследования показывают, что большинство участников выбирали для себя чтение текстовой информации, предлагавшейся в курсе, и тем самым поэтапно продвигались в своем обучении, как это было заложено структурой курса. В то же время некоторые участники выбирали просмотр видео и прослушивание аудиофайлов, содержащихся в курсе, а также старались выполнять задания и участвовать в иных формах деятельности. Таким образом, участники MOOK создавали собственные индивидуальные образовательные траектории, укрепляя свою трансформирующую цифровую агентность и влияя на эпистемические практики, заложенные в курсе.

**Ключевые слова:** онлайн-обучение, массовый открытый онлайн-курс, эпистемические практики, трансформирующая цифровая агентность, Гальперин.

**Для цитаты:** Энгенесс И., Нур М. Обучение в контексте массового открытого онлайн-курса: значение для эпистемических практик и развития трансформирующей цифровой агентности у будущих и работающих учителей в Норвегии // Культурно-историческая психология. 2020. Том 16. № 3. С. 71–82. DOI: <https://doi.org/10.17759/chp.2020160308>

---

#### **Information about the authors**

*Irina Engeness*, PhD (Philosophiae Doctor), Head of Research Group ICT in Teaching and Learning, Professor (full), Østfold University College, Norway, ORCID: <https://orcid.org/0000-0001-5948-4992>, e-mail: [irina.engeness@hiof.no](mailto:irina.engeness@hiof.no)

*Magnus Nohr*, Head of MOOC studies, Assistant Professor, Østfold University College, Norway, ORCID: <https://orcid.org/0000-0002-7647-2886>, e-mail: [magnus.nohr@hiof.no](mailto:magnus.nohr@hiof.no)

#### **Информация об авторах**

*Ирина Энгенесс*, PhD, профессор, руководитель исследовательской группы по изучению ИКТ в обучении, Университетский колледж Эстфолл, Халден, Норвегия, ORCID: <https://orcid.org/0000-0001-5948-4992>, e-mail: [irina.engeness@hiof.no](mailto:irina.engeness@hiof.no)

*Магнус Нур*, старший преподаватель, руководитель направления по изучению MOOK, Университетский колледж Эстфолл, Халден, Норвегия, ORCID: <https://orcid.org/0000-0002-7647-2886>, e-mail: [magnus.nohr@hiof.no](mailto:magnus.nohr@hiof.no)

Получена 31.03.2020

Received 31.03.2020

Принята в печать 01.06.2020

Accepted 01.06.2020