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Platformised Affinity Spaces: Learning communities on YouTube, Twitch and TikTok

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Abstract

Online, informal learning communities bring youth opportunities for learning that schools cannot offer. Yet, there are concerns about the impact of social media platforms' control over online learning. We argue for a re-evaluation of what an 'online informal learning community' is by looking at such active communities on three platforms: YouTube, Twitch and TikTok. We do this by reconsidering Gee's 'affinity spaces' and by asking: how can we understand online informal learning communities in the current sociotechnical context? We observed and analysed interactions of six learning communities on YouTube, Twitch and TikTok. Our results show that in today's platformised online context, Gee's concept of 'affinity spaces' should be reconsidered in three ways. First, platforms call for discussion about affinity spaces' boundaries through the visibility regimes that play a part in access. Second, platforms challenge the affinity spaces' grammar; to maintain a focus on their interest, platforms need to engage with interests provided by platform cultures. Third, a more fixated hierarchisation, informed by platforms' focus on creators, impacts affinity spaces' social structures. We introduce the concept of 'platformised affinity space' as a first step to specific dynamics that platforms introduce to online informal learning communities. We conclude that we only understand these communities when acknowledging how these dynamics are appropriated as well as resisted to achieve community goals.

Keywords: Affinity space; informal learning; social media platforms; learning community; ethnography

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1. Introduction

Although we generally think of school as the main place for learning, young people (increasingly) also learn in communities on social media platforms. On social media platforms they share knowledge and skills around a common interest, such as books, games, history, or coding. We aim to gain a better understanding of the role that social media platforms might play in such communities. To gain such an understanding, we conducted an empirical study of online informal[1] learning communities on YouTube, Twitch and TikTok that sheds a 'new'[2] light on knowledge from the learning sciences and media studies. We draw on work from media studies that raises concerns about the control of social media platforms over youth and learning and the potentially harmful effects of such control (Alegre, 2021; Decuypere et al., 2021; van Dijck et al., 2018; Koopman, 2019; Sefton-Green & Pangrazio, 2022). They describe this increasing control of a few big tech companies as 'platformisation' (van Dijck et al., 2018). From the learning sciences, we build on literature that explores how (online) learning communities have challenged traditional, formal notions of learning. From this body of work, we turn specifically to Gee's concept of learning communities as 'affinity spaces', which he introduced in response to the fluidity that online spaces brought to the characteristics of learning communities. We want to explore whether and how Gee's (2005) concept of affinity space requires an update regarding informal learning communities operating in an increasingly *platformised* context. In particular, since Gee introduced his 'affinity space,' online spaces have become increasingly controlled by big tech companies (van Dijck et al., 2018), increasingly 'platformised', which impacted their (experienced) fluidity. We seek to map these changes by empirically researching the role of social media platforms in young people's online informal learning communities.

1.1 Theoretical background

To understand this new online context, we use insights from media studies, to analyse how online informal learning communities change when platforms offer the context for young people's online learning activities. Van Dijck et al. understand platforms as programmable digital architectures designed to organise interactions between users (2018). Platforms collect and process user data for the commercial, surveillance and normative purposes of tech companies (van Dijck et al., 2018). In work from media studies, platforms' algorithms are argued to steer users to produce particular behaviour and knowledge by presenting information in a manner that can be considered political by their classification, sorting, and ranking of data (Bucher, 2018). We are interested in exploring whether such control of platform infrastructures over how and to whom information is presented might impact young people's learning activities in communities online. In other words, we are interested in how information is bound and/or released to them based on algorithmic sorting rooted in platforms' commercial and surveillant aims. We will refer to this steering of users through the algorithmic management of information as 'visibility regimes' here. Such 'regimes of visibility' and their impact on young people have also raised concerns in popular media, such as the Netflix documentary-drama hybrid 'The Social Dilemma' (Orlowski, 2020), and academic work, such as Shoshana Zuboff's book on 'Surveillance Capitalism' (2019). These argue that platforms manipulate young people to become addicted users in ways that reinforce prejudice and radicalise and divide youth. Furthermore, there is a growing concern in media studies and in studies of learning, that automated manipulation of behaviour by platforms is detrimental to youth's agency and critical thinking potential (Alegre, 2021; Koopman, 2019; Sefton-Green & Pangrazio, 2022). For example, there are concerns about how users' control over these platforms in making autonomous (learning) choices is limited by algorithms' visibility regimes in an attempt to manipulate user behaviour (Alegre, 2021; Koopman, 2019). A well-known example, mentioned also in the Social Dilemma, is how algorithms might aim to control a young person's attention by showing

[1] See Bronkhorst & Akkerman (2016) for our understanding of the relation between formal and informal learning, as a representation of this discussion falls outside of the scope of this paper.
[2] We have used quotation marks around the first usage of the word 'new' here as we want to acknowledge that knowledge is never truly 'new' as it is rooted in a long history of developing technologies, tools, and theories.

them increasingly radicalised or extreme content, raising societal concerns on what and how youth are learning online. We wonder how such insights and concerns about the control of platforms translate to the ways in which informal learning communities operate online. How could platforms' manipulations for instance implicate youth's control over their learning in such communities?

Studies so far have mostly theorised these concerns on platforms' visibility regimes and their impact on young people's participation in online formal learning communities (Sefton-Green & Pangrazio, 2022; Williamson et al., 2022). Simultaneously they call for more empirical research to see whether the control of young people over their learning activities and their critical perspectives are really under such a threat on digital platforms both in and beyond explicitly educational environments (Sefton-Green & Pangrazio, 2022; Williamson et al., 2022). We partly respond to this call by conducting observations of online informal learning communities to understand whether we need to critically reassess the conceptualisation of 'learning community' for the platform context. In other words, by bringing in empirical material on informal learning communities from YouTube, Twitch and TikTok, we reflect on the epistemological underpinnings on what an online informal learning community is to explore whether there is, in this sociotechnical context, a need for a new conceptualisation of what an online informal learning community is.

The relationship between young people, learning communities and digital technologies has previously been explored in academic literature (boyd, 2014; Deng et al., 2016; Ito et al., 2019; Jenkins, 2006; Lankshear & Knobel, 2007). For example, there is a large body of work on 'networked learning' that has provided insights into how learning interactions are shaped when people learn in the context of online, networked technologies (Del Valle et al., 2020; Rehm et al., 2018). Such work for instance predicts factors for how learning connections are shaped online on Reddit (Del Valle et al., 2020) or how informal learning networks can be shaped in formal educational contexts to push back against the power of platforms over data (Wilson et al., 2023). Although the literature on networked learning has traditionally paid limited attention to informal learning and the normative aspects of learning, there has been an increase in (calls for) such work (Del Valle et al., 2020). We take up this new, still small, strand of studies on networked learning that addresses normative issues, and in particular the normative aspects of platform design for learning (see e.g. Gyldendahl Jensen et al., 2022; Vaessen et al., 2014; Wichmand et al., 2023). To further explore the normative issues of learning and the role of technology in learning, we have looked at literature that departs from the assumption that learning is networked and draws attention to how digital technologies might challenge formal education. This work argues that the opportunities offered by digital technologies for young people to learn with others online beyond the boundaries of school, could challenge how schools organise learning activities (Jenkins, 2006; Lankshear & Knobel, 2007; Säljö, 2010). For example, young people can learn a language that no one in their town speaks or teaches from an online expert or access resources online that are not available to them in their immediate environment. It has been argued that these technologies expand people's social networks in ways that were not possible before such technologies existed (Rainie & Wellman, 2012). Simultaneously, academics argue that these informal, 'networked', online learning communities challenge traditional learning institutions (Akkerman & Leijen, 2010; Säljö, 2010). For example, it has been argued online informal learning communities challenge the school's monopoly on knowledge (Säljö, 2010). In contrast to such claims, the connected learning paradigm sought to connect these opportunities for online learning to academic, civic and professional opportunities (Ito et al., 2019). Rather than perceiving digital technology as a 'threat' to schools and their public values, these scholars explored the benefits of informal online learning communities for youth and their futures (Ito et al., 2019). We continue this conversation started by these authors, adding a unique and fresh perspective by looking at the variety of ways in which these communities address the challenges of learning in the current online context that becomes increasingly platformised.

We use the idea of 'affinity space' as a starting point to rethink 'online informal learning communities' in the platform context. 'Affinity space' is a concept introduced by Gee as a comment on the idea of 'communities of practice' (2005). Communities of practice are defined by Wenger, in whose work the roots for 'communities of practice' and Gee's 'affinity space' lie (in part), as a group of people

who come together around a shared problem to learn about it as a joint enterprise (Wenger, 1999). They learn through the exchange of experience and expertise between core expert members and peripheral novices, thereby acquiring skills and knowledge (Wenger, 1999). Communities of practice as a concept inherently linked the social process of engaging in a community with learning, seeing the joint enterprise of sharing experiences and competencies between novices and experts, and the resulting individual and community transformations, as learning (Wenger, 1999). Our understanding of what constitutes a learning community and learning is consistent with this work and understands learning as a social, transformative process of sharing knowledge, skills and resources between individuals who come together around a common interest, problem or goal (Akkerman et al., 2021; Wenger, 1999). Thus, we assume that all communities that gather around a particular interest (affinity) allow for learning. We understand this both in the sense of becoming more knowledgeable and in a broader, more transformative sense of coming to belong and developing one's identity. Although these conceptual roots of learning (communities) as a socio-historical process have remained similar in later work, influenced by the rise of digital communities, there has been criticism of the concept of communities of practice in terms of its applicability to this 'new' context of learning communities (Angouri, 2015). Gee introduced the idea of 'affinity space' as one such critique to mark the more fluid nature of communities in informal, online settings (2005). For example, he argues that the relationships between novices and experts are more fluid than originally discussed in the 'communities of practice' literature (Gee, 2005). Furthermore, he notes that the idea of 'community' consistently requires a determination of boundaries, such as who is a member, who 'belongs' and who does not, or the physical space in which they meet, yet such boundaries are often difficult to establish (2005). As a solution to this problem Gee shifts the focus to what binds various people within a community, which he calls the 'grammar' (2005). The 'grammar' is the interactions, values, thoughts and practices that constitute the relationships between people to create a community around a shared affinity (2005). We lead this ongoing discussion on the characterisations of learning communities into a new era of digital technologies, in which big tech companies are leaving their marks on public discourse (van Dijck et al., 2018), and perhaps also on online informal learning communities. We understand online informal learning communities as communities of practice who informally (out-of-school-context) learn about a shared interest in an online context. Following Gee (2005), we refer to affinity space as a further specification of this term: we are specifically interested in describing this online informal learning community as an affinity space, in which boundaries are more fluid and belonging is characterised by a shared grammar rather than membership.

By moving this discussion about the characterisation of learning communities into a time of platformisation, new questions arise. For example, we might wonder whether Gee's further development of the idea of 'learning communities' for the online context may have overemphasised fluidity over boundaries. The discussion about influencers online as celebrities also taking up pedagogical roles introduces for example new dynamics into either the fluidity or bounded relation between expert and novice in online communities (Goodyear, 2022; Hendry et al., 2022). Additionally, the normative control that platforms exert over learning in formal contexts (Williamson et al., 2022; Decuypere et al., 2021) might call for a re-evaluation of the idea of young people taking control of their learning online, so typically ascribed to online informal learning communities. If digital platforms developed for formal education are already pedagogically impacting young people's learning, we might assume that this could even go further for online contexts where these platforms are not primarily concerned for the pedagogical consequences of their platforms. Accordingly, Gee may not have addressed the implications of platformisation in which many of the current online informal learning communities operate. This context of platformisation has been discussed for formal learning contexts, for example how platforms could take away learners' control over their learning trajectories (Alegre, 2021; Sefton-Green & Pangrazio, 2022) or normatively shape learning through platform design (Decuypere et al., 2021; Perrotta et al., 2021; Sefton-Green, 2021). How platforms are designed to collect and process user data for their commercial, surveillant and normative aims and whether and how this might affect online *informal* learning communities, deserves attention. Furthermore, an empirical, interdisciplinary study analysing online informal learning communities operating in this platformising context, using the

concept of platformisation to describe a changing learning environment from media studies, and affinity space to draw on the ongoing discussion about what constitutes learning communities from the learning sciences, has not yet been done and is needed. This study adds a needed and new understanding of the impact of platformisation on how online informal learning communities operate.

In summary, the aim of this study is to ask how we can understand online informal learning communities in a platformised context. To this end, we consider whether there is a need for a new conceptualisation of online informal learning communities, by starting from the question whether 'affinity space' is still sufficient to describe these communities in the platform context, and if not, how we need to understand 'affinity space' in times of platformisation to capture how informal online learning communities interact and exist on platforms. This study reopens earlier discussions about how to conceptualise informal learning communities in response to new socio-technical contexts. However, more fundamentally, it adds a new and needed update to understanding online informal learning communities, based on empirical data, of how platforms might control the informal learning activities of young people online based on their commercial and surveillant, rather than educational, aims. It is striking such an understanding is still lacking given the attention to the impact of educational platforms on youth's formal learning (Kerssens & Dijck, 2021; Perrotta et al., 2021). However, if we wish to understand how youth learn across contexts as young people who are not confined to just learning in school, but also online, such an understanding is crucial and still missing. In other words, this article hopes to raise fundamental questions about how the socio-technical context of online informal learning communities has changed and to ask whether perhaps a new conceptualisation of what an online informal learning community is, is perhaps urgent and necessary.

2. Method

To answer our question, 'how can we understand online informal learning communities in a platformised online context?' we used observational data that has been collected in a larger ethnographic research of the videos/streams and comments/chat of six online informal learning communities on the social media platforms YouTube, Twitch and TikTok. The 'platformised context' refers, based on work by van Dijck et al. (2018) to how these communities operate in an online space that is increasingly becoming more controlled by a few digital platforms whose interest it is to collect and process user data for surveillant, commercial and normative aims for a few big tech companies. For our data analysis, on which we will elaborate in more detail later, we used critical discourse analysis to distinguish how platforms' power might create regimes of truth shaping the grammar of online informal learning communities. Subsequently, we describe how such shaping might ask for a new conceptualisation of what an online informal learning community is. 'Grammar' is a term used by Gee to describe the interactions, values, thoughts, and practices constituting relationships between people in an affinity space (2005). We draw not only on Gee's 'grammar' but also on another concept Gee uses to conceptualise 'affinity spaces': 'portal' (2005). 'Portal' is a term used by Gee to describe access points to an affinity space which exercise power over how interactions around that affinity are taking place, which is why Gee argues portals also generate the grammar (2005).

2.1 Selection criteria communities

To consider differences and similarities in how platforms might shape online informal learning communities, though representativeness was neither the aim nor possible, we have implemented various sampling criteria to capture a diverse set of informal learning communities on platforms. We first selected the platforms, then the communities and lastly creators, which are those people who create streams on Twitch, and videos on TikTok, and YouTube.

2.1.1 Platform selection

To be able to compare the different workings of specific platforms and to capture how commonalities between platforms might come to the fore in the learning communities, we included three platforms. To maximise the chance that we had data about young users, the criteria for platforms were that these are popular among youth. Publicly available data by the platforms themselves and additional research on the user bases of YouTube, Twitch and TikTok shows that these are popular platforms among youth who are between 13 and 25 years old (Ceci, 2022a, 2022b; Hoekstra et al., 2022; Twitch, 2021).

2.1.2 Community selection

To have explicit and visible interactions of how members perceive to be learning in these communities, we selected communities in which learning, though in different degrees, is made explicit as (a part of) the aim of the community. Based on theories on communities of practice, we consider these to be learning communities when they state within self-descriptions on their platform or in comments/chat to convene around a shared interest, problem, or practice to jointly expand on their knowledge and skills by engaging with one another. To use Gee's terminology: part of their *grammar* is a joint enterprise of expanding the knowledge and competences of the people engaging with the shared affinity. Based on these criteria, we selected an e-commerce community and a LGBTQI+ vlogging community on YouTube, an info-security and a speedrunning community on Twitch, and a history and a sustainability community on TikTok.

One might wonder how we can compare these selected communities that are so different to understand online informal learning communities. We would argue exactly their difference makes it a valuable selection of communities. What they have in common is that they are learning communities in the sense that they are comprised of people who convene and share knowledge and skills around a shared affinity. Furthermore, though this does not constitute a full (if that is even possible) representation of the platforms, we have included two communities per platform to see if we can already identify some commonalities in how online informal learning communities are shaped on the same platform, though further research would be needed to be able to generalise such results. The communities are purposefully selected to differ in their affinities as we are interested in comparing *how* youth's learning communities are differently shaped online by looking at *how* they are learning, not at *what* they are learning. Including different communities centred around different affinities allows us to analyse what is common in how these communities learn in online spaces, even if their affinities differ radically, such as in how they are generally considered to be valuable skills or knowledge for youth's formal education. As such, we hope to see how these different informal learning communities learn in a platformising online space, where the learning communities are similar in their joint enterprise of learning about a shared interest outside the formal school context, informally, yet differ in what that interest is.

2.1.3 Creator selection

Within each community, we took a sample of creators based on a match with the community's main interest and whether the creators were embedded and recognisable in the wider community, by for instance having a collaborative video with another creator of the same community. We selected on YouTube and Twitch two to three creators per community. On TikTok we selected creators who were members of an interest-related 'house', which are collaborative accounts of creators on TikTok, e.g., 'history house'. We cannot and do not want to claim representativeness, as we only looked at these communities via one platform and via selected creators, even though these communities extend beyond these platforms and creators. Yet these creators do give a general idea of the community as they are selected based also partly on whether they would be recognisable within the wider community.

2.2 Procedure

To observe these communities, we drew from traditions of data collection from digital ethnographies and learning ethnographies. We looked at the community's grammar by observing

interactions, understanding content (videos/livestreams) and responses (comments/chat) as the vehicles for interaction with attention for how such interactions are shaped in interaction with the platform environment. On YouTube, we focused on the interactions on the watch page, on Twitch on the livestream page, and on TikTok on the For You page.

We position our data collection within a wider tradition of digital ethnography (Hjorth et al., 2017; Pink et al., 2015) and more specifically borrow from ethnographies of learning (Azevedo, 2013; Paradise & De Haan, 2009), in an attempt to provide a rich description of the social structures for learning of these affinity spaces, as situated in their digital environment, although we do not claim this is a 'full' ethnography. Such an approach also aids in describing how portals, platforms as the digital environment, generate social (learning) interactions, the 'grammar' of the affinity space. To capture learning interactions, we drew from learning ethnographies method of observation to capture learning interactions, such as observing moments in which experts and novices interact to understand how knowledge is 'taught' (Paradise & De Haan, 2009). In addition, for our observations we wanted to collect data about specifically learning in digital contexts for which we drew from digital ethnographies (Hine, 2000; Pink et al., 2015) and learning ethnographies stressing the importance of attention for the material environment for social behaviour (Hasse, 2014). More concretely, this entailed that we also observed how the platform, as a portal, constituted affinity spaces' grammar, and more specifically, social structures for learning. To obtain a rich description of the platform as a portal generating the grammar of the community, we looked at the interaction between the community members expressions about the platform's role in their learning activities and at the platform itself, and how its infrastructure and a history of usage and tradition function as a social structure for learning. In other words, we understand the platform environment not simply as a technological backdrop for learning but as an environment that carries structures and norms about behaviours and practices with it, and as a portal generates the affinity spaces' grammar.

In some ways, YouTube, Twitch and TikTok can also be understood as an affinity space. That is, affinities might exist at the level of a learning community about e-commerce on YouTube, or learning community about LGBTQI+ vlogging on YouTube, but also at the level of the platform YouTube. People who frequently engage with YouTube or TikTok might be able to connect with one another over shared experiences that are tied to the platform. We refer to this as the 'platform culture' to distinguish it from the affinities that exist at the level of 'online informal learning communities'. As we also acknowledge that these two levels are existing in entanglement with one another, we also bring these levels together to see how these levels together shape the identities, social relationships, and interactions of the affinity spaces in ways that might perhaps be platforms specific.

To observe the communities, we used an observation schedule to capture the grammar of the community, which, as indicated previously, is a term used by Gee to describe the interactions, values, thoughts, and practices constituting relations between people. By choosing for observations, we, however, have to limit ourselves to what is visible on these platforms: comments/chats and videos/streams. Our observations thus captured interactions foremostly, in which we focused on three aspects of those interactions that Gee mentions as characteristic of 'affinity spaces': the boundaries, hierarchies and interactions on how commentors/chatters and creators relate to the affinity. For this research, we had particular attention for learning interactions. We understood the grammar to be about learning when it could be understood as a transformation of an individual or community in relation to knowledge and/or competences about the shared affinity. An example of such a 'learning interaction' could be this asynchronous, fictious comment thread (inspired by actual comments in one of the observed YouTube communities) in which commentors C1 and C2 aid each other in understanding a term by exchanging information related to their shared affinity of LGBTQI+ vlogging:

> C1 17-11-2022 09:33: 'Sorry new here, but what does cisgender mean?'
> C2 17-11-2022 12:30: 'No worries! Great you ask, cisgender is when you identify with the gender you were identified with at birth.'
> C1 18-11-2022 10:30: 'Thank you for explaining, that makes sense!'

We screen recorded these interactions to keep a consistent data set of interactions. We also recorded the number of views, likes, shares, and comments if such numbers were afforded by the platforms, to monitor how certain interactions were received within the community. We took two weeks for observation on each platform as a baseline to start from, to see if we could obtain an understanding of these communities' 'grammar' on the platform. Though we used the same observation schedule for each platform, the way in which the platform worked, made observations per platform different. As both YouTube and TikTok work asynchronously, it is not possible to observe live interaction in the way that is possible on Twitch. However, we can still observe interactions on these platforms, even though members do not immediately respond to one another. We gathered such data especially around the time of a video being posted by a creator on the platform, as we assumed that commentors and creators interact with one another mostly at those moments.

We observed on YouTube the text in the 'about' page and videos and comments that were posted during a two-week observation period by the selected creators. In addition, we observed an additional five popular videos and related comments of those selected creators, as often only one or two videos were posted in those two weeks. On TikTok, we observed the home pages of all included channels and videos and comments that were posted on those channels during a two-week observation period. On Twitch we observed the livestreams, including video and chat, of the channels. For most channels we observed livestreams taking place in also a two-week observation period, though as the included streamers streamed sometimes for four hours four times a week or sometimes streamed at the same time, we had to pick which streams to observe. In such cases, we asked streamers which of their streams would be most exemplary of their everyday practice and observed those. One Twitch channel was an exception as it was an event-based channel that only had one weekend long event every couple of months. For that channel, we observed an event that took place during the days from Friday morning till Sunday evening. We asked community leaders which of the parts of that weekend long stream were most exemplary for the identity of the community. In total, we observed on YouTube 22 videos and on TikTok 70 videos. We observed approximately 48 hours of livestreams on Twitch.

2.2.1 Ethics and privacy

For this research, we have permission from the Faculty of Social and Behavioural sciences Ethics Review Board of Utrecht University (20-0553) and worked in line with their requirements. Hyperlinks linking to online content in this paper are either from creators who provided permission for sharing their content and/or from content that is viewed and liked by so many users that we can assume creators and chatters/commentors consider this public content (see also the NESH guidelines for internet research).

On Twitch we asked the selected channels for permission to join certain streams as the live nature and intimacy of the streams might make it appear as a more private space than people who interact with a YouTube or TikTok video. Streamers implemented a bot, meaning an automated command activated in chat, like '!study', that would provide information about the research if the command was typed in chat, which moderators and the streamer would do to inform that research was taking place, apart from also announcing it in their discord and title of the stream. As such, people participating in these streams were made aware that there was a researcher observing them, who also had a recognisable username 'researcher_zowiez0' and a profile page with more information about the research. They were also given the opportunity to have their chat messages excluded from the analysis by filling in a form shared in chat by the automated command. During our observations on Twitch, we interfered minimally, only asking for clarification when certain interactions were unclear due to for instance the usage of abbreviations. On YouTube and TikTok, apart from members who were interviewed, users did likely not know observations were taking place as we left very few traces, like comments or videos, to make users aware of our presence, though channel owners were informed observation would take place on their channel. For anonymisation purposes, we have paraphrased English comments and translated Dutch (the native language of three authors) YouTube and TikTok comments to stick to their original wording as closely as possible while also avoiding that googling a comment might result in identification of a specific commentator. If interactions are translated from Dutch to English this is indicated by '(T)'.

2.3 Analysis

To answer our research question, we did a critical discourse analysis informed by Gee's concepts 'grammar' and 'portal'. More specifically, we looked at how the 'grammar' of the selected communities, as affinity spaces, is or is not informed by the platforms on which they operate, and if so, how. We do so understanding that platforms create particular 'regimes of truth' (Foucault, 1995) through their algorithmic power (Bucher, 2018). Critical discourse analysis aids in uncovering such underlying truths in the everyday interactions of young people in the selected communities on such platforms, with attention for how those platforms create particular discourses. To focus our critical discourse analysis, we draw on Gee's concepts of 'portals' and 'grammar' to analyse platforms' power over regimes of truth and to uncover how community interactions and norms, their grammar, could be informed by such regimes of truth. 'Grammar' is then a regime of truth that consists of the interactions, values, thoughts, and practices that constitute the relationships between people to create a community around a shared affinity (2005). Using a critical discourse analysis informed by these terms aids in recognising patterns in how platforms and affinity spaces create a cultural 'truth', particular to these communities on how learning interactions are shaped.

We use the concept of 'portals' to explain our analytical perspective on platforms as also shaping the social structures, the regimes of truth, for learning. We draw on Gee's argument that 'portals offer access' (p. 220), that is provide the socio-material affordances, to an affinity space, and that 'portals' are strong generators of the grammar of an affinity space (2005). In other words, a portal is an access point to an affinity space which simultaneously also exercises power over regimes of truth on that platform: over how interactions around that affinity are taking place (2005). For example, portals to the affinity space of the role-playing game Dungeons and Dragons (D&D) are the player's handbook that explains the rules of the game, or an online forum about the game, or a D&D game night in a game café. All these portals, Gee would argue, provide a means to access the affinity, and through providing that access also generate the grammar of this affinity space as a café with live communication might differently shape the grammar around D&D than an asynchronous forum for instance (2005). In this paper, we analyse how the platforms YouTube, TikTok, and Twitch as portals offer access to learning communities and simultaneously generate the grammar of that learning community to understand how learning communities are shaped within this particular type of portal. Using this concept of the 'portal' as a lens allows us to look at how platforms' regimes of truth shape the identity of the affinity and the social relations and interactions in relation to the socio-material infrastructure of the platform, and its power over interactions.

In our analysis, we focused mostly on the grammar of the affinity space when we could understand it as 'learning' interactions. As we are also interested in ways to learn that are not generally acknowledged as learning within schools, we took a broad conceptualisation of what such 'learning' interactions could be. In line with our introduction, we understand 'learning' to be those interactions in which the community or a member indicated transformation, meaningful movement, towards a particular purpose (Akkerman et al., 2021) related to that affinity in terms of skills and/or knowledge. Because we were interested in analysing 'online informal learning communities' as affinity spaces existing on platforms, we were interested in those learning interactions that are related to the affinity, so the particular purpose of the transformation had to be part of acquiring an understanding of the shared affinity. In addition, we wanted to analyse how the platform generates the grammar of these communities. We did this by on the one hand looking at how users reflected on how the platform facilitated access to their affinity in interactions. On the other hand, we looked at how such interactions were situated in the infrastructure of the platform as a portal that also shapes how the grammar, meaning the interactions themselves, were generated. In sum, we did a critical discourse analysis of online informal learning communities as affinity spaces to analyse recurring patterns in:

- how learning interactions were happening within the selected communities
- how platforms were reflected upon in interactions as shaping communities' learning interactions

- how platforms as portals generated specific learning interactions through their infrastructure

3. Results

Below we describe three themes that exemplify recurring patterns in our data on how according to our observations, in interactions platforms are described to generate the grammar of affinity spaces. We will share these themes based on our analysis of the interactions within the six affinity spaces, which we will firstly introduce below, after which we will present the themes.

3.1 Community introductions

Before delving into the results per platform, we introduce the communities by describing their affinity and how they relate to that affinity on the observed platform.

E-commerce
The e-commerce community centres around an affinity for e-commerce knowledge and skills. Members relate to their affinity on YouTube by sharing personal stories of how to become a successful online entrepreneur, showing off luxury lifestyles, and providing tutorials and information.

LGBTQI+ vlogging
The LGBTQI+ vlogging community centres around everyday life experiences of LGBTQI+ people. Members relate to their affinity on YouTube by vlogging or commenting directly about being LGBTQI+ and the life experiences that come with that, or by other types of more common kinds of vlog content on YouTube, about for instance shopping, make-up, fashion, and other everyday activities.

Infosec
The information security (short: infosec) community shared affinity is about (developing tools to) test and strengthen online security of information. They relate to their affinity on Twitch through meeting in livestreams via chat and video in which streamers show relevant skills and information to infosec, and programming more widely.

Speedrun
Speedrunning is about the shared affinity for completing games as quickly as possible. The speedrun community relates to their affinity on Twitch through either streams in which speedrunners hone their skill or by watching competitions and marathons in which speedrunners show their skill.

History
The history community has a shared affinity for learning about history and sharing historical knowledge. Members relate to their affinity on TikTok by making, watching, and commenting on short videos with historical information.

Sustainability
The sustainability community has the shared affinity for advocating for sustainable behaviour, policy, and practices. They relate to their affinity on TikTok by making, watching, and commenting on videos with sustainability information and climate activism.

3.2 Platform's visibility regimes generate boundaries for affinity spaces

Our results showed that an important way in which platforms as portals are by communities described to generate the grammar of affinity spaces, is through what we call 'visibility regimes': the ways in which platform algorithms are by platform users described as governing the visibility of their interactions and the boundaries of their affinity space. To describe how affinity spaces appropriate and

resist such regimes, we zoom in on one particularly illustrative example from the LGBTQI+ vlogging community, a video from the channel 'Jessie Maya'.

Jessie is a popular Dutch YouTuber who vlogs about topics ranging from fashion, food, make-up to anti-gay commercials and being a transwoman. In her video 'REACTING TO TRANSGENDER UPDATES AFTER 6 YEARS…' (T), which at the moment of observation had received 234,137 views and 1057 comments, Jessie reflects on her previous 'transgender updates' video series. Jessie's introductory text of the video is telling of the community's experience with YouTube (T):

> Transgender will be in the title, and often YouTube intercepts that or it doesn't get into the algorithm […] This video will probably be demonetised as well […]

Jessie describes here that YouTube does not offer the same visibility and rewards (monetisation) for her content that explicitly deals with her trans identity such as this video, as other content she has made. She describes to experience YouTube as controlling whether her content is seen by others based on its topic, which could play a part in her affinity space's potential popularity, growth or decline on the platform. YouTube here is described as controlling the visibility of her community. As was evident from our data, such visibility regimes might also play a role in the learning trajectories of members of an affinity space. We often found that comments by members described that they found the LGBTQI+ community by accident. An example of such a comment, underneath one of Alice Olsthoorn's videos (T):

> I once started following you when you decorated pumps with glitter but these videos [on calling out transphobic comments] are the ones I stayed for, the way you can put people in their place in a peaceful, civilised manner.

This might indicate that the content that is related to the core affinity of the LGBTQI+ vlogging community might not be as visible as content that is further removed from their shared affinity. In other words, based on community members' comments and expressions in videos, they seem to experience that the boundaries, access points and potential growth of their community are managed (and thus limited in this case) by the platform's visibility regimes.

However, the LGBTQI+ vlogging community does not simply abide by YouTube's visibility regimes and the boundaries it imposes on their affinity. They also attempt to resist and appropriate such boundaries. As we will demonstrate below, the LGBTQI+ community in response to YouTube's 'visibility regimes', employs activities that they perceive to generate the visibility on the platform that they want in an attempt to resist these regimes. After mentioning the ways in which YouTube thwarts her videos, Jessie shares the following (T): 'the last time you all succeeded, because you did a thumbs up, because you spammed comments.' A quarter of all comments answer her call, such as this comment with 910 likes: 'okay let's do this again, put this shit back into the algorithm!' Or this one (T): 'YT is sooo lame, your content is so important, not just for trans babies who watch you but also to create more awareness among the cis people.' Jessie and her commentors' interactions indicate an attempt to 'curate' YouTube's algorithm to obtain visibility by posting comments, which they mention to believe aids in gaining visibility on the platform.

In sum, the latter results show that users' activities on YouTube indicate that YouTube might play a part in how visible and potentially popular some affinity spaces can become on their platform. Such activities are also clearly seen on TikTok. Our data shows how in particular underneath activist videos from the sustainability community, commentors attempt to engage in similar forms of 'curation' by commenting 'boost' (trying to raise attention) or 'comment for the algo' to 'curate' the TikTok algorithm into letting their message be more visible and expand the boundaries of their affinity space. Moreover, another common comment from our observations of TikTok is: 'comment to stay on this side of TikTok'. Such a comment again indicates a sense of 'algorithmic curation' but this time a member appropriates it to see more content produced by their community. Sometimes this even works the other way around, where commentors want to let the creator know whether the video is on the 'right side' of TikTok's algorithm: 'target audience reached'. This comment expresses to the creator that they have

reached the 'right side of TikTok': the community of people they want to address. Such expressions in comments of appropriating and resisting the algorithm to support own and other's access to the community, reflects a sense of control over the algorithm and over the visibility of their interactions, and the boundary of their community. Simultaneously, it shows the potential decentring of their affinity; and how they try to maintain access and interaction with an affinity space through playing with what might help to 'curate' the algorithm. Portals, by definition, generate growth through access, and create boundaries around affinity spaces. Similarly, platforms (as portals) are recurringly reflected upon by communities to introduce manipulations that can be related to their visibility regimes, which, as described in our introduction, are rooted in a complex combination of commercial, normative and surveillant aims that play a part in both content visibility and access, generating an affinity space. Within this platformised social media space, members respond to perceived algorithmic control through 'curation' to 'fight' for the existence and visibility of their community in their interactions.

3.3 Platform cultures generate competitive hybridisation

As our data shows, a second way in which platforms generate the grammar of affinity spaces, is through specific platform cultures. Such platform cultures give rise to what we will refer to as 'hybridised affinities' that draw on distinct affinity spaces by combining affinities from both those spaces in created videos. By hybridisation we explicitly refer to how *affinities* are hybridised. Such hybridisation of affinities can be happening by using the different modalities a platform affords users to work with (text, sound, gesture, moving imagery) to refer to different affinities, but here we centre not on this combining of modalities but on the combining of different affinities and how this affects how learning communities operate in these platform spaces. We will argue, by discussing two examples that are exemplary of how this theme is recurring in our data, that 'hybridising affinities' can be understood both as a conformity with platform cultures as well as a resistance of such cultures.

The example video and interactions that we discuss below come from a video by EcoTok, a house of sustainability creators. The video had 39.8k likes, 436 comments and 2598 shares at the moment of observation. The video goes as follows:

> We see a person standing on a canoe pushing themselves forward through a rice field. A textual overlay states: 'We can't drink fossil fuels.' When it disappears a new overlay state, while the camera turns to overlook the rice fields 180 degrees away from the person on the boat: 'So why do we prioritize them over water?' A new overlay then states, while the camera returns to the person on the boat: 'Help us stop the Line 3 Pipeline in Minnesota.' The camera than moves away from the person in the other direction, showing first the text: 'Link in our bio.' and then '[adult swim]', using the actual squared brackets as the logo has these.

The VANO 3000 – VANO 300 sound accompanies this video, which is a sound that was originally used by Adult Swim, a television network, to make short videos with their logo. This video employs a, for a TikTok-user recognisable, trend of mimicking with video, text, and sound the Adult Swim videos. This time, however, it is not an 'ad' for Adult Swim but a remix of its aesthetics to deliver a different message: they call attention to a petition against an oil pipeline. This video adopts and 'borrows' an aspect of a different affinity space: the wider affinity of TikTok culture in which it is common to participate in particular video trends, as this sound and aesthetics that they mimic is originally not used for sustainability content, but for a TikTok trend. Other examples of 'borrowing' from other affinity spaces are for example the creator nosebled, whose bio says: 'that one dancing history chick'. This creator makes videos in which she frequently combines her interest in dancing and in history by doing a dance while using textual overlays that share historical events. Some of the comments express appreciation for how nosebled combines dancing with history: 'I'm a fan of learning facts while a person dances #innovativeeducation'. And: 'I'm just realizing how absurd it is that tiktok used to be cringe cause it was just people dancing.' By dancing while transferring historical knowledge, nosebled creates a hybridised affinity that speaks both to the (larger) dance affinity space on TikTok, to which the latter comment also refers, as well as to history afficionados. TikTok as a portal for the history and

sustainability communities generates affinity spaces in which affinities can hybridise and overlap as indicated by these hybridised affinity interactions.

Based on these hybridised affinity interactions of the selected communities, platform cultures could be understood as potentially enabling and encouraging the hybridisation of affinities within affinity spaces. On the one hand this can be interpreted as platform cultures encouraging a 'dilution' of one's affinity as part of a popularity contest for views: speaking to two affinity spaces might help creators to generate more attention on the platform. On the other hand, the hybridising of affinities can also be understood as a creative resistance against platform cultures that might make space for one affinity, but not the other. By hybridising their affinity, an affinity space can then aim to enforce space on the platform for their affinity. We can also see this on YouTube, where the trans creators draw on larger platform trends, belonging to YouTube's platform culture, such as so-called 'reaction videos' to still talk about their own affinity, yet within a way that speaks to the larger platform culture of 'acceptable' content. Another example is how in the e-commerce community conservative gender ideologies are sometimes wrapped up in inspirational and motivational videos.

There are also examples of more direct resistance to how the platform culture, particularly the reward system, works by turning away from it, or expressing clear mocking of a larger platform culture. For instance, during our observations of infosec streamer Ash_f0x, they had a subscriber goal on top of their stream for doing a 'hot tub stream'. Ash_f0x explained that this was a joke on stream, in response to so many hot tub streams suddenly appearing on Twitch. However, after realising that some of their viewers might not interpret it as a joke, and they did not want to be seen as encouraging people to subscribe to them, they put the subgoal down. Twitch's reward system and how other streamers use hybridised affinities to generate more views and subscribers on Twitch, was appropriated and ridiculed by this streamer, clearly distancing themselves from such practices. In summary, hybridised affinity content indicates that platforms might generate specific interactions based on their larger platform culture, which affinity spaces use to create their content, hybridising it with other affinity spaces, to potentially gain more visibility on the platform, such as by using a trend. This also indicates that each platform that an affinity space uses to reach their aims, could differently generate the interactions related to that affinity as befitting the platform culture and the affinity.

3.4 Platform hierarchies generate an hierarchisation of expertise

Furthermore, our observations of interactions in the context of the platform infrastructure showed that platforms intervene in how relations between 'old timers' or experts, and 'newbies' or novices take shape. In the infrastructure that they offer for interaction, platforms push towards a hierarchisation of expertise relationships in which creators are foregrounded and other users, such as viewers and commentors, are pushed to the background. We will illustrate this by discussing comments from TikTok and YouTube communities that are indicative of the idolisation of creators that is widely present in our data. Subsequently, we will also discuss how the ethical hacking community negotiates such practices.

First, it is key to realise how creators have a focal presence on the social media platforms included in this study when we analyse platforms' infrastructures designs. YouTube, Twitch and TikTok are designed so that videos and streams are placed central on the page where the user watches these videos. Comments and chats are initially hidden or happening to the side of the video or stream. As such, the focus lies on streams and videos, that are created by creators. Furthermore, platforms reward mostly creators: only on Twitch can users who do not create video material obtain rewards such as channel points for viewing or badges for participation in a community. Only creators can gain a partnership with YouTube as symbolised by a small red symbol next to one's channel name. Only creators can gain a 'verified channel' on TikTok as symbolised by a small blue checkmark next to one's channel's name. Only creators on Twitch can become Twitch affiliates or partners, as also symbolised by a specific badge. When observing these platforms, it quickly became clear who matters the most from the perspective of the platform. In many of the observed comments users also paid respect,

thankfulness, admiration towards creators, which reflects a relationship between leaders and followers, resonating elements of fandom culture rather than the more egalitarian expert-novice relationships that Gee described for affinity spaces. For example, underneath the video by Jessie Maya mentioned in the first theme: 'I have learnt so much about transgenders and the whole community because of you' (T), and another underneath the history video by nosebled: 'You're my fave creator everr, I legit always learn new stuff and the dance TALENT!!'. We concluded that within these affinity spaces, based on the design and observed interactions, the platform portal, including the platform culture, affords a hierarchy in which creators are generally positioned as the educators and experts, whereas commentators are there to learn from them.

The interactions of communities on Twitch indicate a negotiating of such hierarchisation though. We take an illustrative example from the infosec community: a segment from an exchange within a stream by d0nut titled 'Resync 'n Chill (working on HTTP client -!study) – Rust'. This stream had around 34 viewers at the observed moment, and it took place approximately one hour and 50 minutes into the stream. The viewer sees d0nut's screen and activities thereon and in a corner a live webcam video of d0nut. Next to this screen, viewers can interact with one another and d0nut via a chat box. In this moment, d0nut is trying to solve an issue they are working on with chat while another conversation unfolds on how to begin with programming. We have presented this conversation below in a way that makes it easier to follow, but this is not how it happens on stream, where chat and streamer 'talk' simultaneously. People in chat are represented by C and a number instead of their username, '@' is a way to say one is responding to a specific person in chat.

> C1: 'I actually want to learn to program, but everyone says it is very difficult' […]
>
> C3: '@[C1] Getting started is easy. Eventually, you get to choose where you want to go. Some routes are easier. Other routes are harder.'
>
> C6: '@[C1] programming is more fun than difficult. It is hard from time to time, but like with any skill, it gets easier and easier soon after.'
>
> C7: 'what about masscan'
>
> C7: 'are there full network stacks written in rust?'
>
> D0nut: *reads out above chat by C3* 'Absolutely agree, it can totally be easy. […], but uh [following animation pops up of C3 following]. Oh [C3] thank you for the follow. Yeah, but you hm it totally be easy, uh, uhm. I just say, start the right way. Don't learn programming to learn programming, have a project, have a task, have a thing that you need done and programming is the way you get to that result. That way you are not even worry about it, you are actually just looking things up so you can get it out of your way and get your task or goal accomplished, […]Uhm dot dot dot, reads aloud above chat by C6 Yup, yeah, it is. […] [C6] is absolutely right

After this moment d0nut replies to C7s suggestions by showing examples on their screen. C3 asks for help with a project they want to start, like one d0nut recommends doing to start with programming, d0nut and chat all help C3 with suggestions and advice on how to achieve this project. This example shows that though the streamer takes a central position in guiding the conversation, sometimes chat and sometimes the streamer has the position of information provider. Everyone helps one another, regardless of experience. In this example, we can also see how d0nut seamlessly appropriates functionalities of Twitch and their usage by the community into the conversation with chat: 'Oh [C3] thank you for the follow.' This reading out of chat messages by d0nut, the streamer, is a form of recognition for, in this case, C3's contribution of offering advice to a fellow member of the community. By mentioning the advice of people in chat, d0nut uses their hierarchical position to amplify the voices in chat. The person in chat obtains the opportunity to then also express their appreciation for being included in the stream, by 'following' (an interactional act). In these ways, the monetisation rewards that come with reaching a certain number of followers or subscribers on Twitch are by these communities used to not create hierarchies but aid their collaborative practices. We have seen

recurringly throughout our observed communities, particularly on Twitch, how communities attempt to subvert this asymmetry a platform imposes between creators and chatters/commentors by using this asymmetry to invite expertise from the community and by employing monetisation from the platform to benefit not (only) themselves but also their community. D0nut for instance emphasizes the purpose of community for donations in their 'about' section:

> Donations help me give back to the community

Another example is how the Benelux Speedrunners Gathering (BSG) Marathon channel uses donations they receive during their marathons to support charities, in their bio: 'BSG's donations support MIND, 100% of your donations will go straight to them.' During speedrun streams such collaboration and exchange between distinct roles of expertise is also present, for instance during a Minecraft run, streamer Buggy expresses that they do not know what a particular building is, and chat tries to help her. At another time Buggy explains a particular speedrun trick, taking the position of expert. These examples show how the speedrun and infosec community encourages everyone to collaborate regardless of their experience. To sum up in the words of the bio of the info-security streamer Ash_f0x: 'My personal goal is to learn something new every stream, together with my viewers. […] Nobody will be judged here based on a "stupid" question, so…just ask!'

In summary, we have seen that the platform infrastructures are geared towards a hierarchisation between members of affinity spaces, generally positioning creators as the 'experts.' However, community interactions indicate that affinity spaces can resist such hierarchisations and appropriate and resist such structures to create more fluid relations of expertise, to match with collaborative cultures, in line with those that have been claimed by Gee as typical for affinity spaces.

4. Discussion

Based on these results, in this discussion we will first describe the three ways in which we need to re-evaluate affinity spaces to capture the new platformising context of online informal learning communities, putting forward the term 'platformised affinity spaces' as a first step towards a needed new conceptualisation of what an online informal learning community is in times of a platformised web. We then discuss how this raises fundamental questions for media studies and the learning sciences about how the socio-technical context of (online) informal learning communities has changed.

First, our results show how we need to re-evaluate how online informal learning communities have been previously conceptualised to respond to the changed context in which they operate. We particularly continue the discussion on learning communities by looking at Gee's development of the conceptualisation of online informal learning communities as 'affinity spaces' and how those affinity spaces would be characterised by more fluid boundaries. More specifically, we have demonstrated how platforms, driven by their commercial and surveillance goals, are in comments and videos often reflected on as taking (partial) control over the visibility of, and access to content of online informal learning communities, which has implications for how we can conceptualise online informal learning communities' boundaries in the context of platforms. Our results can be interpreted to reintroduce a discussion about this fluidity of boundaries of learning communities in this platform context. Talking again about the boundaries of learning communities might be seen as surprising, especially in the online context, as Gee introduced the concept of 'affinity space' precisely to address the problems associated with earlier conceptualisations of 'learning community' that required a demarcation of boundaries. Gee's work was in line with studies arguing that the boundaries around access to resources and experts, and who has and who does not have knowledge and expertise, would become more permeable due to the networked affordances of online spaces (Rainie & Wellman, 2012; Ünlüsoy et al., 2013). However, our results show that the introduction of platforms as portals to access learning communities creates the need for a re-evaluation of how boundaries play a part in the conceptualisation of online informal learning communities. Particularly as these boundaries introduced by platforms might control whether

and how young people are able to access (their) learning communities in a way that could be informed by the commercial goals of platforms, rather than young people's own learning desires. In summary, a new dynamic that needs to be considered when reformulating affinity spaces is how affinity spaces are characterised by how platforms as portals generate and take (partial) control over their boundaries by governing the visibility, access and reach of the affinity space.

Second, platforms as portals to informal learning communities generate a competitive hybridisation of the community's affinity with platform cultures that challenge the grammar of these affinity spaces. Whereas in work from the learning sciences on informal learning communities the grammar was seen as 'given' by the affinities of the learners, in a platformised context affinities have to actively engage with platform cultures, economies and dynamics to continue to exist on these platforms, giving rise, for example, to the examples of hybridised content mentioned above. In other words, a new dynamic that needs to be taken into account when reconsidering the idea of affinity spaces is how the grammar of affinity spaces in platformised contexts is co-defined by engagement with the platform culture and visibility regimes that affect how young people control their own ways of connecting to the affinities they might wish to learn from.

Third, platform hierarchies generate a new hierarchisation of expertise. Our results show that the relationships between novices and experts within learning communities on platforms are not as fluid as Gee proposed for affinity spaces. Platforms, through their reward system and infrastructure, introduce relatively fixed hierarchies between creators as experts and chatters/commenters as novices, that (although not all communities adopt those hierarchies), position creators as experts on these platforms. Although Gee perceived expertise, in line with literature on networked and informal online learning, as dispersed in the network and distributed among community members (Lankshear & Knobel, 2007; Säljö, 2010), it can be argued that platforms control to some extend the positionality of novices and experts in their design which generate relatively fixed 'expert' roles. In other words, a new dynamic the platformising online context introduces to the concept of 'affinity space' is how it is shaped by platforms generating creators as experts.

Given these latter new dynamics that platforms introduce, we introduce the term 'platformised affinity spaces' to allow for the analysis of online informal learning communities with particular attention to how platform infrastructures and cultures shape their boundaries, grammar, and hierarchies. We offer this as a first, not exhaustive, step towards conceptualising informal learning communities operating in todays' platformised environment, in which we mostly can share insights related to how platforms as portals might consistently play a similar role in how young people's learning activities are taking place within affinity spaces. We use 'affinity space' here rather than online informal learning communities as these communities still share characteristics with Gee's 'affinity spaces', such as convening around a shared interest and bonds between members being determined by having a shared interest with a shared grammar. Yet, 'platformised affinity spaces' is a further needed specification of Gee's concept that aids in a wider understanding of how online informal learning communities operate by adding three core characteristics. Young people's activities in these communities on platforms indicate that:

1. …platforms' visibility regimes take control of access and create boundaries around online informal learning communities, while their activities also indicate a perceived control over platforms' algorithmic sorting of content

2. …platform cultures invite hybridisation of interests to learn about them, which can be understood as both a dilution of niche interests and learning about them, as well as a way for eager learners to find a place to learn about niche interests

3. …platforms generate hierarchies for learning rooted in their positioning of creators that succeed in drawing an audience, which entails that the more fluid relation between novices and experts that Gee (2005) describes becomes more rigid on platforms, generally positioning popular creators as 'experts' for learning

We now want to briefly broaden the focus from Gee's affinity space and use the insights from this study to critically examine the assumptions about online informal learning communities of both media studies' knowledge on platforms and learning sciences' knowledge about online informal learning communities. As introduced earlier, media studies state that platforms manipulate behaviour and take control over learning to such an extent that we can worry about whether it takes away freedom of thought (Alegre, 2021), critical thinking (Sefton-Green & Pangrazio, 2022), and agency (Koopman, 2019), skills that scholars argue are key to educating youth to become critical citizens in democratic societies and to participate in communities (Sefton-Green & Pangrazio, 2022). However, our results show that young people's online activities demonstrate the perceived ability to appropriate and resist the dynamics that platforms generate within their affinity spaces and push back against platform control over their learning. Therefore, to argue that they have no agency in their online informal learning communities could be seen as reductive of youth's online activities. Youth's activities in these communities demonstrate a power to appropriate and resist these platforms in order to create space for the ways they want to organise their learning within their communities, not only having an imagined idea of how the algorithm works, as described by Bucher (2017), but also actively curating these algorithms to achieve the goals of their online informal learning communities. By discussing youth as data subjects manipulated and controlled by platforms, they are rendered as passive objects, or as Zuboff describes, 'addicted users'. At the same time, we can be critical of the lack of attention to platform control in the literature on online learning communities. For example, Cousin (2005) and Ünlüsoy et al. (2021) showed how online spaces afforded access to seemingly infinite connections to resources and experts, connections that sometimes appeared to be accidental. In our results, we also see that access to learning communities on these platforms is in comments and chat sometimes described as random or accidental. If we interpret this 'accidence' through the lens of literature on platforms, such coincidence or accidence could be the result of manipulation by the platform which predicts for a young person what they should learn based on the data collected about their previous interactions (Alegre, 2021; van Dijck et al., 2018; Koopman, 2019; Sefton-Green & Pangrazio, 2022). Such a form of control by platforms is not necessarily only 'good' or 'bad', as, for example, young people may be 'manipulated' by the platform to deepen their understanding of history through the provision of increasingly in-depth history videos or manipulated to engage with increasingly toxic and radicalised online communities. Such manipulation raises concerns about the power of platforms to determine which learning communities are (easily) offered to young people for learning, and which are not. Overall, based on our results, we would like media studies and learning research to move forward with nuance regarding the role and control of platforms when researching online communities. It is valuable for these fields to understand that online learning communities are in part controlled by the dynamics that social media platforms introduce, while at the same time these learning communities' activities reflect a sense of control by the perceived ability to resist and push back against such platform dynamics to achieve their own learning goals.

Keypoints

- We introduce the term 'platformised affinity space' to describe the 'new' dynamics social media platforms introduce for learning communities.
- We argue that, first, social media platforms re-introduce a discussion about the boundaries of learning communities through their visibility regimes.
- Secondly, platform cultures introduce a practice of hybridising communities' core interests with other interests that are popular on the platform.
- Thirdly, a more fixated hierarchisation, informed by platforms' focus on creators, is introduced into learning communities' social structures.

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Appendices

Questions of observational tool

- Concept: Interest-based community of practice
    - Aim: to capture the interest-based learning community as a community of practice centred on an interest
    - Moment to capture: Fixating identity statements/performances for the community as a whole (territorialisation)
        - Fixating activities/performances about community's positions/positionality
            - 'We are not experts at hacking'
        - Disciplining activities/performances about fixating identity
            - Comment deleted from chat by moderator
- Concept: Learning
    - Aim: To capture moments that could indicate learning is taking place
    - Moment to capture: Moments that surpass the here and now (change)
        - Change in position/positionality community
            - As a community we became Twitch partners then because…
        - Change in position/positionality individual member
            - Well-liked comment says that the creator has helped them understand the trans experience better
- Concept: platform affordances
    - Aim: To capture the affordances of the platform for this community
    - Moment to capture: Explicit expressions by the community on how they use the platform
        - Specific features
            - "The emote is based on the Mario burn trick that our streamer demonstrates here."
        - Platform in general
            - Streamers consistently use the raid function of Twitch at the end of a stream to joke or support other streamers.