

INSTITUTIONALIZATION AND AUTOMATION OF ADAPTIVE PROCESSES IN WIKIMEDIA PROJECTS

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Purpose: The aim of the article is to show the variety of forms of deployment of non-professional knowledge workers, in this case: volunteers working on Wikipedia, the most recognisable of the Wikimedia projects. An attempt was made to determine the relationship between Wikipedians' activity and the amount of potential social capital produced by people creating accounts on Wikimedia projects.

Design/methodology/approach: Using publicly available data, the activity of Wikipedians and the number of potential newcomers in the 20 versions of Wikipedia were compared. Two formulated hypotheses were tested using Spearman's rank correlation coefficient. The process of institutionalisation of newcomer adaptation processes in the Polish-language Wikipedia is presented using a netnographic approach.

Findings: A clear correlation was observed between the number of users registering and the number of people actively editing on Wikipedia. In these projects, there are different distances between the 'centre' and the 'periphery' in terms of editing activity, which may be relevant to different strategies for onboarding the newcomers. There are three phases that can be observed in the relationship between communities and newcomers, dominated by spontaneous, institutionalised and automated actions respectively.

Research limitations: The netnographic approach has made it possible to outline more broadly the evolution of changes in attitudes towards newcomers to the Polish-language Wikipedia. A full presentation of the various action strategies in this area would require research in dozens of the largest language versions of Wikipedia.

Social implications: Large free culture projects, of which Wikimedia is one, have a better chance of further community growth if more people are willing to join in mentoring activities. Further identification of the ways in which newcomers are onboarded would optimise the selection of appropriate strategies on a project-by-project basis.

Originality/value: The research conducted identified a framework for the interrelated processes of institutionalisation and automation of the onboarding of newcomers to knowledge-sharing work in the 20 language versions of Wikipedia. Previous research has been limited to descriptions of activities in this area in the various language versions.

Keywords: adaptive processes, knowledge sharing projects, free culture movement, Wikimedia, virtual communities of practice.

Category of the paper: research paper, case study.

1. Introduction

The massive introduction of remote working modes in a global pandemic has necessitated adaptation to a range of new conditions, and has also prompted intensified research on this topic. Although the new generation just entering the labour market is both more accepting of change and operates in a digital environment more naturally, this type of work has limited the possibilities of assimilating organisational culture and thus the relevant rules of operation that are socially accepted in individual organisations (see Pratt, 2023). For generation Z, remote working also prevents direct support from superiors and is problematic for these employees due to higher levels of stress and a disturbed work-life balance (Łukasiński, Wójcik, 2024). The pandemic period was stressful for a number of reasons, some business entities were terminating their operations. During this time, however, online communities focused on knowledge co-creation were becoming more active. In Wikipedia, which is the leading project of the free culture movement and the most recognisable of the Wikimedia projects, not only has the number of edits (activities performed) increased, but also the number of new participants has grown. In addition, communities were more forgiving towards them, which may indicate greater solidarity during the global lockdown (Ruprecht et al., 2021).

The mechanisms developed in virtual communities of practice to improve adaptation processes in cyberspace could potentially be useful for their implementation in other types of communities and organisations. This, however, warrants a notable caveat. In the social sciences, the phenomenon of this online encyclopaedia was noticed quite quickly. Some publications have even postulated that the work organisation and sharing models specific to this online culture could be transferred to commercial ventures (Tapscott, Williams, 2008; Aigrain, P., Aigrain, S., 2012). However, the mechanisms of interaction have not been understood well enough to be implemented outside this particular project. Besides, the value system (openness, freedom to share) would be difficult to implement in ventures where the core of the business is based on gaining a competitive advantage.

Although some researchers note that attitudes towards newcomers may be favourable, other studies have shown a number of adaptation problems, mainly due to the difficulty of adopting a rather complex system of operating rules (Gluzza, Turaj, Meier, 2021; Vetter, Sarraf, Woods, 2022). The aim of this article is to present the ways in which volunteers can be onboarded to the co-creation processes and to compare the different forms of co-creation activities in selected language versions of Wikipedia. Communities in the different language versions, noting the problem of poor retention of newcomers, are developing autonomous adaptation systems (Karczewska, 2022, 2023), often introducing mentoring activities.

The remainder of the article reviews the literature, characterises the methodological approach used including both quantitative and qualitative analysis and presents the findings.

2. Literature review

2.1. General issues of socialisation of newcomers in Wikimedia

Some researchers point out that the functioning of open systems requires a constant flow of new users to replace those who leave for various reasons. It is important not only that there is a visible flow of them, but more importantly that a significant proportion of them can move from the 'periphery' of activity to the 'centre' (Morgan et al., 2013). Indeed, in online communities, the phenomenon of the development of distinct centres with the growth of social networks is evident, which is also associated with certain aspects of the concentration of power among a few, outstanding persons (Rijshouwer, Uitermark, de Koster, 2023). In the case of Wikipedia, less than one promille of users are responsible for nearly half of the content produced (see Priedhorsky et al., 2007). Although a significant proportion of the most active users are bots, the disparity in engagement is very large. In contrast, integrating newcomers into the cooperation becomes increasingly difficult over time, as they have to master the adopted policies and guidelines.

By 2008, there were already hundreds of pages describing the rules in the English-language Wikipedia, including help pages, and new ones were being created in subsequent years (Li et al., 2020). In addition to this, it is important to acquire the technical skills associated with the MediaWiki environment, the interface of which is also evolving. Getting started without mastering this knowledge and skill is difficult, and power users involved in content control often become distrustful of newcomers and oppressive rather than supporting when it comes to make edits (see Morgan et al., 2013; Narayan et al., 2017; Li et al., 2020). Active Wikipedians frequently assume that most newcomers will not remain active, so it is not worth investing time in mentoring activities (Konieczny, 2021). It has also been observed that distrust is increasing towards users with the administrator rights (Skolik, Jemielniak, 2011). Furthermore, mentoring initiatives created in the early years of Wikipedia were blocked on the grounds that the project would become 'too social' and that such actions could draw users away from editing articles towards other activities (see Musicant et al., 2011).

Efforts to tie editors to the project have been evident in Wikipedia since 2009, when there was a marked decline in the number of newcomers (Morgan, Halfaker, 2018). Between 2006 and 2010, their retention rate fell from 25% to 5%, which was associated with more frequent negation of their work contribution (Narayan et al., 2017). These problems were also noted earlier. Between 2005 and 2007, on the English-language Wikipedia, the percentage of users who were still active one year after they made their first edition dropped from 40% to 12-15% (Musicant et al., 2011).

Problems with the socialisation of new (registered) Wikipedians as well as of anonymous editors arose from dilemmas relating to openness to collaboration. On the one hand, openness and assumption of goodwill was important to increase the number of editors, but on the other,

active Wikipedians focused on controlling newbies contributions. On the part of the community, it is not easy to assess whether users are striving to act in accordance with the accepted rules, even though they initially make mistakes. Newcomers, on the other hand, find it difficult to assess their own competence in contributing to encyclopaedia resources. Research has shown that new editors tend to act in accordance with norms when these norms are easily identifiable, clearly defined and when users have the opportunity to see examples of pronormative behaviour (Morgan, Filippova, 2018). It can be assumed, according to broken windows theory (Kelling, Wilson, 1982), that the rapid elimination of content created in violation of the rules should result in less exposure to the effects of rule-avoiding activities and also increase the chances of staying in the project. However, quality-oriented measures result in a focus on controlling new content rather than correcting deficiencies in existing articles.

The part of the community that seeks to identify the main barriers to entry can recognise them comprehensively during direct contact with newcomers, which takes place, among other things, during editathons. These are relatively rare meetings arranged with small groups of new users, usually students, where both parties can identify the main difficulties in starting a project activity. Some of these result in publications in the form of case studies (Vetter, Sarraf, Woods, 2022). Inconsistent user interface, lack of quick feedback and lack of guidance and support when editing articles were identified as barriers to entry, among others (Gluza, Turaj, Meier, 2021).

Early measures to support the retention of new users and their adaptation were two-pronged. On the one hand, there was an individual commitment to mentoring some of the active Wikipedians, and on the other, the interface changes were introduced to automate the socialisation process. The latter included templated rule-breaking messages that included hyperlinks to policies and guidelines pages. Their function was primarily to warn against vandalism, but they also acted as a deterrent to newcomers who also received them, although they had no intention of destroying the project's resources (Morgan, Halfaker, 2018). It is fair to say that engaging in empathetic support and technical improvements to provide faster information about rules on Wikipedia were not compatible. A tendency towards schematic behaviour was also observed in mentor role players. This manifested itself, among other things, in the fact that instead of adopting a proactive attitude towards newcomers and pointing out safe fields of action to them, they limited themselves to responsive behaviour, mainly to answering questions posed to them (Musicant et al., 2011). Research indicated that social support was more effective than technical support. The change in the style of support and warning messages has not led to a clear change. 'Early interventions' were more effective, also providing support (Morgan, Halfaker, 2018).

Both forms of support (social and technical) belong to institutional support, which is common in online services. However, large projects based on peer production, of which Wikipedia is an example, are dominated by individualised rather than institutionalised socialisation. New users determine for themselves which areas they want to be active in and

seek appropriate guidance to be able to engage, what leads to a situation, where some of them are not able to meet the requirements (Narayan et al., 2017; Li et al., 2020). Previous research indicates that the provision of an institutionalised, structured socialisation process, together with symbolic rewards not only increases the retention of newcomers, but also their engagement (Warncke-Wang et al., 2023), meaning that they move from the periphery of this social system towards its centre. It has also been pointed out that collaboration between newcomers may yield better results, also in terms of the quality of the content created, in comparison with interaction with committed community members (Li et al., 2020). In contrast, when newcomers are experts, they can expect to quickly find themselves at the centre of the community. However, when they are involved in a debate about the quality of their contributions, they usually have less time than the editors involved, and they also lack knowledge of the rules on Wikipedia. This can result in a relatively quick decision to leave the project (see Konieczny, 2021).

The question of how activity patterns develop over time is often found in the literature. Three stages of user adaptation are indicated: 1) the passive reader, who learns about the possibility of editing Wikipedia, 2) the new editor, focusing on selected topics, and 3) the engaged community member, taking on a broader perspective and administrative roles. People who are committed to the action usually show a very high level of editing at the beginning, and although it decreases later, it still remains high (Antin, Cheshire, Nov, 2012). However, there are cases of return and even intensive editing years after creation of one's account. The moment at which the newcomer decides to act is crucial. Behavioural patterns are assumed to develop at the time of inclusion, during the first edits, which translates into the rapid formation of specific social roles (Narayan et al., 2017).

2.2. Initiatives for the adaptation of new users to the Wikipedia environment

The problems of adapting new users in the Wikimedia environment were complex enough to lead to the establishment of a variety of solutions in this regard. In the early years of these projects, so-called welcoming committees developed in many language versions of Wikipedia. Their task was to inform the rules in this online encyclopaedia, as well as in sister Wikimedia projects. Members of welcoming committees posted personal or, more often, templated welcome messages on the discussion pages of users who made their first edits after registering an account. They included references to pages of rules, help pages, and outlined ways for community members to communicate and cooperate. Due to the template nature of the messages, a significant number of language versions have chosen to have them inserted automatically (by a specially programmed bot). The form and content of these messages depended on the general (ethnic) culture in which the users functioned (Karczewska, 2022).

The shift away from personal communication and its subsequent automation resulted in less emotional involvement in the adaptation process. It led to the need for new initiatives to 'improve' social relations between committed Wikipedians and newcomers, and between the newcomers themselves. Most of them were first tested on the English-language version of

Wikipedia. One of these was a project called Adopt-A-User, launched on the English-language Wikipedia as early as 2006 and developed, among other things, through the involvement of the Wikimedia Foundation (Musicant et al., 2011). Engaged users involved in this program invited newcomers in a personalised way to interact in thematic WikiProjects. However, this personalisation was only possible after the new user had made some edits, so that it could be determined which areas of knowledge they were interested in. Newcomers were therefore individuals who were already able to cope with the barriers to entry and adapt to the system to some extent (Morgan, Halfaker, 2018).

Many more such initiatives were created after 2010. In 2011, The Wikipedia Adventure project was launched. In it, newcomers are invited to perform a series of edits according to scenarios that mimic the activities performed when editing articles (Narayan et al., 2017). A year later, a special Wikipedia: Teahouse page was created, which was a special internal forum for new users of the English-language Wikipedia. Its main purpose is to be able to provide quick assistance to users asking questions. It is important that support appears within the first 24 hours in order to retain a new Wikipedian. In addition, a script has been created that reports info on 'promising newcomers' once a day. At the Teahouse, the socialisation of newcomers is not formalised; instead, they are advised to engage in simple, non-controversial activities. Individuals who participate in this form of socialisation make more edits and stay active longer in the project (Morgan et al., 2013; Warncke-Wang et al., 2023).

Since 2013, the English-language Wikipedia has also been developing a Wiki Education Programme with the support of a specially established organisation called the Wiki Education Foundation. The basis of this programme is institutionalised socialisation via tutorials, training modules and schedules. By 2020, more than 63,000 students had edited close to 83,000 articles, so slightly more than one article per participant. This means that it did not explicitly contribute to the retention of newcomers, but provided an introduction to the Wikipedia environment. The tutorials used were well appreciated by the participants, but did not contribute to increasing their engagement. Only one in five programme participants completed all seven stages of the tutorial. Nevertheless, its participants stayed longer on Wikipedia than those who joined the project in the traditional way (Li et al., 2020). According to Konieczny, this initiative, although effective in the case of students, does not work for experts. This is not so much caused by their discouragement by discussions with amateurs, but rather by the fact that they find editing Wikipedia less attractive than their professional activities (Konieczny, 2021).

The technical support to get involved in improving articles at the start is to provide newcomers with links to problematic articles. A program (SuggestBot) is used in this case, indicating to newcomers the articles in which various types of problems need to be fixed, along with an indication of the degree of difficulty (Warncke-Wang et al., 2023). In addition to locally initiated projects, the WMF Growth Team has been active since 2012 as a special team within the Wikimedia Foundation. Its main aim is to increase the retention of newcomers. However, according to Rijshouwer, Uitermark and de Koster (2023), the Wikimedia Foundation's

commitment to encouraging participation in Wikimedia projects can only be observed from 2014 onwards. Until 2007, there was an expansion of bureaucratic rules and then a professionalisation of the foundation itself and an increase in its influence in the Wikimedia environment under the leadership of a technocratic executive director.

3. Methods

In order to determine the variety of ways in which newcomers are onboarded to collaborate on knowledge sharing in Wikimedia projects, a qualitative and quantitative research was conducted among 20 language versions of Wikipedia in June 2024. The research sample consisted of the language versions with the highest number of active Wikipedians, who could potentially also engage in helping new users: English (en), German (de), French (fr), Russian (ru), Spanish (es), Japanese (ja), Portuguese (pt), Italian (it), Polish (pl), Chinese (zh), Persian (fa), Arabic (ar), Dutch (nl), Hebrew (he), Ukrainian (uk), Turkish (tr), Indonesian (id), Czech (cs), Korean (ko) and Swedish (sv).

In the first stage of the research, the average number of active Wikipedians, the average number of new accounts created in these versions, the average number of edits made by the total number of registered Wikipedians and by the most active members of the community were calculated on the basis of available aggregated statistics on Wikipedian activity (*Wikimedia Statistics*, 2024). An indicator of the number of active Wikipedians was the average number of accounts with at least 1 edit per month for 2023. Also, the number of registered accounts referred to the monthly average in 2023.

The average edit counts of the total registered Wikipedians and the most active ones were examined for three periods: January 2023, July 2023 and January 2024. An indicator of the most active Wikipedians was the number of 20 users who made the most edits in a given month. In this case, monthly averages were not determined, as there may have been different people among the most active in each month. The accumulation of this data allowed two hypotheses to be tested:

H1: There is a clear statistical relationship between the number of active Wikipedians and the number of new users registering their accounts in the largest Wikipedia communities.

H2: There is a relationship between the average number of edits made by a Wikipedian and the average number of edits made by the most active members in the largest language versions of Wikipedia.

A positive verification of H1 would allow to conclude that the size of the potential for new Wikipedians is dependent on the size of the community that contributes to a given Wikimedia project. In contrast, a positive verification of H2 would mean that the distance between the

centre and periphery of activity in Wikimedia projects is similar. It could also mean that the engagement of the most active Wikipedians translates onto the engagement of the general user base, and thus leads to a social facilitation effect.

In the second stage of qualitative research, selected language versions of Wikipedia were compared in terms of initiatives to include and socialise new users. In this respect, it was verified which initiatives were launched in which language versions. Research to date has mainly focused on the English-language version and has only analysed individual programmes for the benefit of the onboarding of the new users. However, an in-depth analysis of all versions would not be possible for organisational reasons. It would require the knowledge of various languages and substantial time necessary to get acquainted with the operation of communities working on the respective language versions. Therefore, in order to present the process of automating the relationship between new and committed users, the analysis focused chiefly on the Polish version, where the author of this article has been conducting participatory observation since 2005. This part of the study was netnographic in nature (Kozinets, 2015) and no research hypotheses were formulated at this stage.

4. Results

4.1. Users activity, power users and new accounts in largest Wikipedias

For 2023, the monthly average of the number of created Wikipedia accounts ranged between 820 in the Swedish version and 99,655 in the English version. The difference between the two extreme positions among the 20 most active Wikipedia communities is as much as two orders of magnitude. Similar disparities could be observed when the numbers of active Wikipedians were compared. The Korean version had the fewest active Wikipedians, with an average of 1850 users making at least one edit per month, while the English version had the most: 120,636 people. Only a small percentage of those who set up accounts uses them for making edits, so the relationships between these variables are not obvious. However, the statistical test showed a statistically significant relationship between the two for $p < 0.05$. Spearman's rho correlation equals 0.864662. Thus, H1 can be accepted. The results on logarithmic scales are shown in Figure 1.

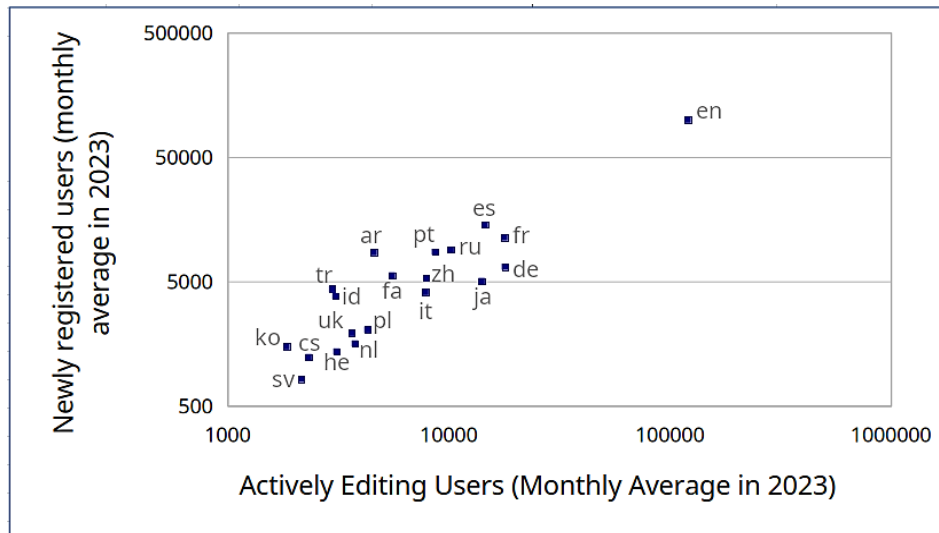


Figure 1. Relationships between the number of active Wikipedians and the number of Wikipedian accounts created per month in the analysed language versions of Wikipedia. Monthly average for 2023. Source: own work.

The differences between the average number of edits per one registered Wikipedian were relatively small, ranging between 15 and 50 edits across the language versions studied. A greater disparity was observed when comparing the average number of edits made by the most active Wikipedians. These ranged between 1000 and 7000 edits apart from the English-language version, where the average was approx. 20,000 editions. Statistical tests using Spearman's rho correlation equals for $p > 0.05$ showed no relationship between the two variables. This means that the activity of power users (understood as the number of edits performed) does not translate into overall Wikipedians activity and does not contribute to facilitation in this respect. However, it was observed that the ratio between the two quantities was similar across language versions for the data from the three analysed months (Figures 2-4).

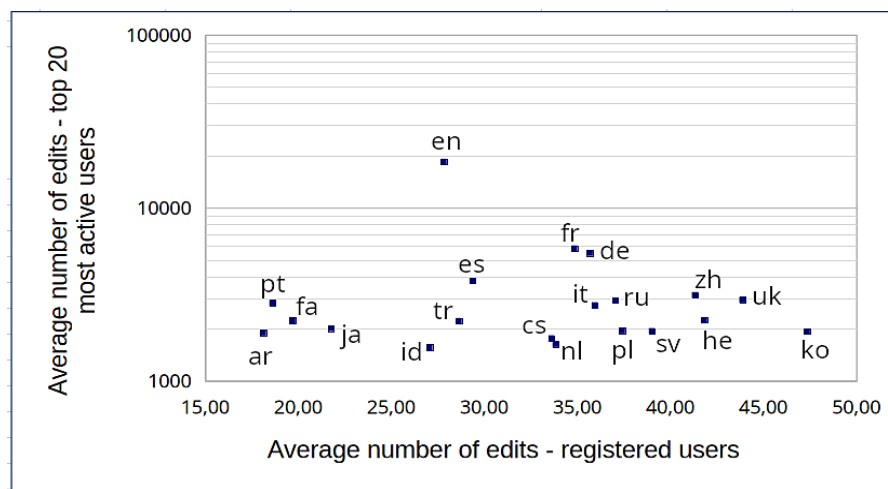


Figure 2. The ratio of the average number of edits by all registered Wikipedians to the average number of edits made by 20 most active users. Data for January 2023. Source: own work.

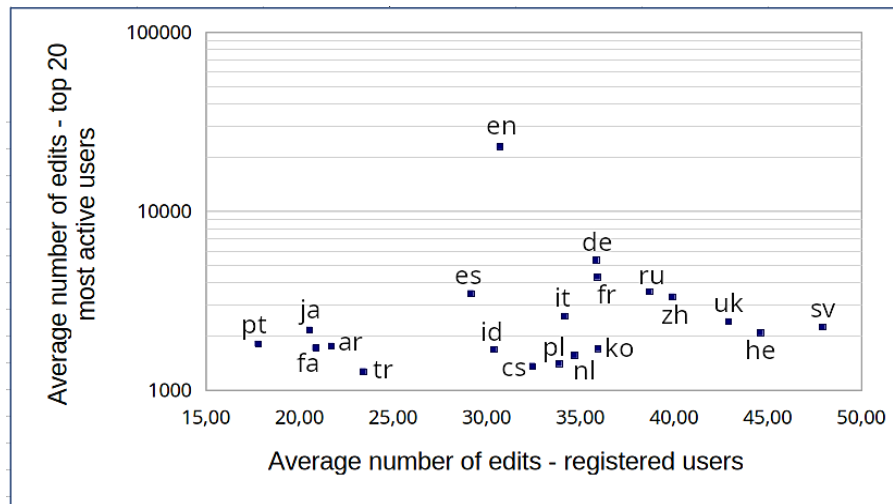


Figure 3. The ratio of the average number of edits by all registered Wikipedians to the average number of edits made by 20 most active users. Data for July 2023.

Source: own work.

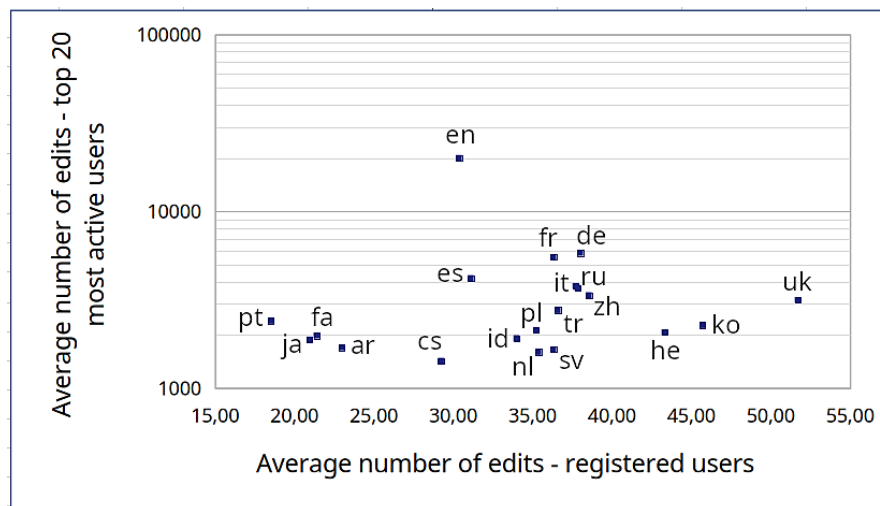


Figure 4. The ratio of the average number of edits by all registered Wikipedians to the average number of edits made by 20 most active users. Data for January 2024.

Source: own work.

Taking into account the overall activity of Wikipedians and the activity of power users (the people with the most edits made at any given time), certain trends can be identified in some language versions. In the English, French, Russian and Spanish versions, which are the largest Wikipedias, power users make more edits than the same category of users in other language versions. At the same time, the number of edits made by Wikipedians in general is close to the middle of the scale. In the Ukrainian, Swedish, Hebrew and Korean versions, power users are less active, with the relatively high activity of registered Wikipedians. These are also versions where the number of active Wikipedians and the number of new accounts created is relatively low. So it can be said that there is a lot of mobilisation in small communities. The Portuguese, Japanese, Arabic and Persian versions, on the other hand, show low activity of both power users and general Wikipedians. They are characterised by relatively large communities –

with numerous active users and a high number of new accounts being created. The size of the community compensates for their lower activity in order to be able to achieve project development in terms of the number of articles and corrections or updates. One can assume that each of these categories faces different relationship problems between the users involved and the Wikipedians joining the project.

4.2. Evolution of the forms of supporting and engaging newcomers

In the early years, the English-language Wikipedia was a model for other language versions. Solutions for supporting newcomers, including help pages, advice, and recommendations and the assumption of goodwill were therefore also copied from it. Hence, a 'system' solution was initially introduced in the form of a help desk page, where questions could be asked about the functioning of this online encyclopaedia. This solution was adopted by all of the language versions studied. Within the first few years of Wikipedia, another initiative emerged in the form of the *Welcoming Committee*. This committee brought together users who devoted part of their time to inserting welcome messages to newcomers. They also agreed on the content and form of these messages in order to communicate the basics of the project activity as effectively as possible.

Although the template messages themselves were adopted in all major versions, committees only functioned in some of them, including English, German, Polish and Japanese, which until 2010 were (not counting the French-language Wikipedia) the versions with the largest number of articles. Subsequent initiatives emerged as a development of these two initial ones. Some of the most popular initiatives are shown in Table 1.

Activity in the *Welcoming Committee*, once the wording of the welcoming messages was established, was usually limited to their insertion into the users' discussion page. There was no expectation of feedback from newcomers and even though the latter were informed of the rules and recommendations, they were often nonetheless breaking the accepted rules. This form of information about the system of adopted standards was therefore not sufficient. Therefore, broader communication with newcomers was advocated on the basis of bilateral relations between mentors and joining users (e.g. the *Adopt-a-User* initiative in English version). Often, however, this was only limited to replies to questions directed at the mentors. Due to the lack of active involvement in the support, the initiative contributed little in comparison with the help desk. Mentoring has been included in the largest language versions, including French, Spanish and Russian. In the Japanese version, as in the Korean and Chinese versions, where *Welcoming Committees* were also formed, this initiative was, however, omitted, possibly due to the cultural differences. Help desk has been developed into forums for newcomers, which include *the Teahouse* on the English-language Wikipedia. Although the initiative has been widely promoted, including in academic publications, it has only been adopted in English, German and Russian versions, and a few more (Arabic, Chinese, Czech and Swedish) have only

been set up with websites for newcomers. However, they were not active, probably due to too few people operating with newcomer status at the same time.

Table 1.

Forms of support and activation of newcomers in the studied language versions of Wikipedia

Language version	Help desk	Welcoming Committee	Traditional mentors (adopters)	Forum for newbies	Automatic welcoming	Semi-automatic mentors	Suggest Bot	Reporting mistakes	Editor Retention
English	+	+	+	+		+	+		+
German	+	+	+	+		+			
French	+		+		+	+	+		+
Spanish	+		+			+		+	+
Japanese	+	+							
Russian	+		+	+	+	+	+	+	+
Portuguese	+				+	+	+	+	
Italian	+				+ every hour	+			
Chinese	+	+		doesn't work	+	+			
Persian	+				+	+	+		
Polish	+	+	+		+	+	+	+	
Arabic	+	+		doesn't work	+	+			
Dutch	+		+			+			
Hebrew	+	+	+			+		+	
Ukrainian	+				+	+			+
Turkish	+					+			
Indonesian	+		+			+			
Czech	+			doesn't work		+			
Korean	+	+			+	+			
Swedish	+			doesn't work		+	+		

A '+' sign indicates the existence of a website with a description of the initiative in question. Note 'doesn't work' in the case of a forum for newcomers means that such a forum has been set up, but newcomers do not participate.

Source: own work.

If it is assumed that the first forms of newcomers' onboarding were spontaneous and schematic, the introduction of forms of mentoring and the creation of forums for newcomers can be seen as a development of institutional support that eliminated spontaneity to a certain extent. In contrast, the aftermath of the schematisation of activities was their automation. Since the welcome message containing information on forms of collaboration on the creation of the encyclopaedia was inserted by users in the same shape, in some language versions it was decided that such actions could be performed by bots. In such cases, users receive welcome messages as soon as they create an account. Where such an automatic device has emerged, it has simultaneously led to the sunsetting of the *Welcoming Committee* initiative.

The process of building relationships between mentors and newcomers itself has also been partly automated. The automation here consisted of assigning a new user to a randomly selected mentor with whom they can interact. The form of communication, which in the case of wiki-type sites is specific and unintuitive for internet users, has also been facilitated in this aspect. This form of partial automation of the communication process was implemented in all language versions of Wikipedia studied. In some of them, newcomers also get information about tasks that are recommended to be relatively easy in the initial phase of the activity. Lists of such tasks are generated by yet another program called SuggestBot. The tasks refer to problem articles, marked with special templates. However, such labelling is done spontaneously, and its purpose is to improve content, not to socialise newcomers. Therefore, suggestions to perform a task can breed frustration.

Table 1 identifies two more initiatives that involve the socialisation of new users. In the Spanish, Portuguese, Russian, Polish and Hebrew versions, readers can use the tab (link) available in the menu to report errors in articles. As editing Wikipedia does not require the creation of an account, much of this is done by unregistered users. For some, this may be their first activity on Wikipedia, and the Wikipedians involved may encourage them to create an account and become more active in correcting articles themselves. The initiative has also become popular in smaller language versions being developed in Eastern Europe and Central Asia. The latest initiative is the in-house *Editor Retention* project, developed in English, Spanish, French, Russian and Ukrainian versions. As with other in-house projects, this is not a single solution, but a working space to discuss ways of retaining newcomers inside projects and increasing their involvement.

Various factors may have influenced decisions to launch initiatives in individual projects. In order to recognise these, it would be necessary to conduct qualitative research on a larger scale, mainly through interviews with long-established Wikipedians who are also involved in the problems of the website operation. The following part of the article outlines the process of ongoing changes in the socialisation of newcomers in the Polish-language Wikipedia. This has been made possible by participatory and non-participatory observation over the past two decades, including activities aimed at engaging new Wikipedians.

4.3. Case Study of the Polish Wikipedia

In the early years of the Polish-language Wikipedia, when the interface was not yet extensive and the community was small, newcomers were greeted by spontaneously typing a few sentences on their user page. The general rules had not yet been codified, and greetings primarily encouraged them to produce more articles. Once the rules were written on the relevant pages, schematic greeting templates began to be created. From 2005 onwards, committed users began to be invited to join *the Welcoming Committee*. During this time, there was a significant growth of the community and a constant increase in the number of newcomers, which required more time for the 'welcoming movement'. Therefore, gamification elements have been

introduced to increase the motivation for this form of activity. A certain image problem was allowing people whose substantive and social competence was questioned to be a part of welcoming committees. People critical of such egalitarianism included those Wikipedians who also insisted that the community should focus on the quality of content rather than the number of articles.

An important issue was to determine what content, in what form and in what order, should be included in the welcome message. It was assumed that too much information and too many links would cause the newcomer to be discouraged from reading them. For this reason, they briefly outlined the essence of the main policies, while pointing to the more extensive assistance pages. During the period of the most intensive use of these messages, six forms were in operation at the same time, each of which was subject to irregular modifications. With the emergence of the institution of the guide (the Polish variant of mentoring), a special message was created so that guides could post it to their 'mentees'. In addition, there were several templates for foreign language users and templates for people editing without creating an account with the request to register with the service. When the community of the Polish version of Wikipedia decided that the welcome message should be posted by a bot, another content modification took place. However, it then occurred that it was much more common for such messages to be inserted to people whose intention was to commit acts of vandalism or to troll. Some Wikipedians involved in detecting such deviant actions have even advocated the abandonment of the automatic greeting. Consequently, the word 'welcome' was dropped and the use of a colour scheme that was intended to bring a positive emotional charge was abandoned. In addition, an streamlined iconography was used.

The dominance of the typographic approach over the iconographic one was also evident on the page presenting the guides (mentors). In the initial stage, people joining this group were encouraged to briefly describe on a special page what they could help with and to include a photo or possibly an avatar of themselves. This approach was intended to 'humanise' the forms of contact and to point out to the newcomers that different people can help them, and that they can make a choice in this regard. As of 2024, the old version of the guides page has been replaced by a new form, linked to the *Growth* tool, which gives newcomers easier tips on how to act and communicate with the guides. In this system also dispensed with colour, including colour iconography.

Some tools are often sunset by general changes to the Wikimedia interface. The author of this text co-authored a special message which, together with motivational images, was displayed to account-creating Wikipedians and encouraged them to include a set of useful links by clicking on one of the selected options. his tool was deactivated with the redesign of the interface and the deactivation of the information about account creation confirmation (system message *Welcomecreation*). An earlier attempt to introduce it in an English-language version was also unsuccessful. Although it met with the approval of power users, it was not consulted with the community and was consequently rejected.

5. Discussion

Positive verification of H1 means that the larger the communities, the more opportunities there are to incentivize new users before they make their first edits. Continued growth of the community is potentially possible if more of the active Wikipedians are persuaded to spend more time playing the role of mentors (guides) for newcomers. In some language versions, however, there may have been a situation typical of the Polish-language Wikipedia, where the same people have been the guides for years. If such users engage in more difficult administrative situations and conflict resolution, this may also project their emotional response towards other users, including newcomers. This is because the greater the involvement in a project, the greater the willingness to intervene in problematic situations. However, a positive aspect of such multilateral engagement may be that newcomers perceive that their mentors are working towards quality. This in turn means that they may witness pronormative actions, as pointed out by Morgan and Filippova (2018).

The differences in activity between power users and general Wikipedians could perhaps be linked to the relationship of the community to experts. Konieczny (2021) indicated that experts with novice status do not want to spend too much time familiarising themselves with internal (often heavily bureaucratic) policies and procedures. The qualitative changes that take place in a project are very often initiated by experts who have chosen to actively participate for many years. This also applies to changes in the policies themselves. In contrast, the implementers of these policies treat them less critically and more literally, and are often the ones patrolling the changes made by newcomers. Persuading experts to stay in the project would therefore rather require intensive dialogue with other experts. While institutional support is beneficial (Warncke-Wang et al., 2023), forms of individualised support should still be used with newcomers who could become power users.

The tendency towards routine and schematic thinking in interactions with newcomers, evident in Wikimedia projects, reduced overall proactive engagement (Musicant et al., 2011). The result was the creation of warnings that were more discouraging to newcomers acting in good faith than to those with destructive intentions (Morgan, Halfaker, 2018). The automation of interactions was supposed to free up social capital and channel the energy of Wikipedians into forms of proactive implementation of new users. While such a shift in activity was evident in the insertion of welcome messages, further activity in this area led to further problems. The inclusion of SuggestBot to present newcomers with articles in need of improvement was linked to the fact that the choices made by this program were not directly controlled by the communities. In the Polish language version, for example, the suggestions for improvement included entries with multiple issues existing at the same time. Attempts to improve such entries can sometimes even lead to a discussion concerning the removal of such article due to other, more serious problems. The situation is similar with automatic suggestions for translating

articles or adding hyperlinks and illustrations, as newcomers are often not familiar with the recommendations made for such actions beforehand.

6. Summary

The collapse of the trend of continuous growth of the number of newcomers to Wikimedia projects prior to 2010 prompted a search for solutions that would facilitate growth of the community. Earlier research conducted mainly in the English-language Wikipedia led to some solutions, some of which were also implemented in other language versions. Some solutions introduced by the communities were only provisional and over time they were replaced by other forms, more institutionalised and automated. Previous studies have overlooked local conditions and the different ways in which new volunteers cope with adaptation to knowledge-sharing activities. This article outlines a framework for linking the institutionalisation and automation processes of new user onboarding that can be complemented by qualitative research.

Further research would require a broader, qualitative comparison of the strategies for attracting new community members developed in many language versions of Wikipedia and in other Wikimedia projects. Such research, however, would require the involvement of several teams working inside these projects. At the level of implementation, attention should also be paid to the fact that solutions created on the basis of experiments limited to one or a few language versions may create distrust among members of the wider community. This, in turn, may reduce the motivation to participate in the postulated programmes.

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