

Fracking, *Bildung* and a Lack of Democratic Citizenship in Communities: What can South Africa Learn from Poland?

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Abstract

Fracking is a widely contested phenomenon, and considerable attention has been paid to its effects on the environment and people. The concepts of *Bildung* and democratic citizenship in poor communities where there is fracking have not been explored, although people are the most vulnerable to its effects. This article is prompted by how the lack of democratic citizenship in resource-extraction areas has led to protests. This article discusses the lack of democratic citizenship in communities that are threatened by fracking in South Africa and it draws lessons from the Polish case study. The article responds to questions on the importance of democratic citizenship for communities under the threat of fracking, how the lack of democratic citizenship on fracking been a challenge in Poland and South Africa and it provides the significance of the concept of *Bildung* to promote democratic citizenship in communities faced by fracking.

Keywords: Fracking, Democratic citizenship, *Bildung*

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Introduction

The need for a reliable energy supply has led countries to rush to hydraulic fracturing (fracking), and South Africa is no exception. The literature on the effects of fracking on the environment has been widely discussed, with proponents of fracking highly marketing its benefits to the economy, opponents protesting against its detrimental effects on the environment, and the lack of interest in addressing its effects on poor communities is questionable. While proponents have ruled that fracking promotes the generation of revenues and job prospects (Merem *et al.* 2021), opponents claim that its detrimental effects are largely felt by poor communities (Tan 2022) who have to endure the grim impacts caused by the exploration and exploitation processes. Fracking is a slang word for ‘hydraulic fracturing’, an engineering process that aims to improve the recovery of shale oil and gas that cannot be recovered through conventional drilling because of geology by allowing oil and gas to flow more easily into a well (Soeder 2021). Fracking is different from conventional drilling in the sense that it further expands the pockets of shale laterally so that more oil and natural gas can be extracted, whereas conventional drilling simply pulls oil and gas readily available in the reservoir without expanding the surface with lateral fractures. According to Souther *et al.* (2014), threats to the environment from shale development include surface and groundwater contamination, diminished stream flow, stream siltation, habitat loss and fragmentation, localized air, noise, light pollution, climate change, and cumulative impacts, which are largely felt by communities where fracking occurs. Hence, prospective communities that could be affected, have a democratic right to preview information on project development concerning fracking in their neighbourhood.

This paper discusses how a lack of democratic citizenship affects poor communities in areas that are threatened by fracking and then we present the prospect of using one understanding of *Bildung* (a German concept which has spread across Europe for its applicability to multiple phenomena) for greater engagement with communities likely to be affected by fracking in the future in South Africa. In our paper, we also evaluate the significance of democratic citizenship or, rather, a lack of it in communities threatened with fracking. The article responds to the following questions:

- (i) Why is democratic citizenship important to communities under the threat of fracking?

- (ii) What are the loopholes identified in democratic citizenship linked to fracking?
- (iii) How can *Bildung* promote democratic citizenship in communities threatened by fracking?

The starting point in our discussion is to explore the relevance of *Bildung* and democratic citizenship in resource extraction to establish a relationship between *Bildung* and democratic citizenship and to explain how it relates to resource extraction. To answer question two, case studies from Poland and South Africa are used to expose some of the causes of democratic citizenship in fracking communities. For the third question, solutions are provided on how education can be used to empower marginalized communities so that people can become more practical democratic citizens.

Hydraulic Fracturing: The Process

The hydraulic fracturing technique to access underground oil and gas, also known as fracking, has enabled the extraction of oil and gas from deposits that are inaccessible through technological advancements in conventional drilling (Allison & Mandler 2018). According to Cooley and Donnelly (2013), conventional natural gas is generally held as a pocket of gas beneath a rock layer with low permeability and flows freely to the surface once a well is drilled, whereas unconventional natural gas is more difficult to extract because it is trapped in rocks with very low permeability. Unlike conventional mineral formations containing natural gas deposits, shale, oil- and gas-bearing rocks have low permeability, which naturally limits the flow of gas or water (Clark *et al.* 2013). Therefore, after vertical drilling, lateral drilling is performed by creating cracks or expanding natural ones by pumping a fluid composed of water, sand, and chemicals with high pressure into the layer, which exceeds the strength of the rocks in the area surrounding the wellbore (Zhironkin & Cehlar,).

Pana *et al.* (2022) explain that these treatments are applied to layers consisting of consolidated rocks, sandstones, limestone, dolomites, and conglomerates with low permeability in order to increase the inflow of crude oil/natural gas/thermal waters. Cooley and Donnelly (2013) found that these fissures could extend more than 300 m (1,000 feet) from the well (Veil 2010)

and are thus extensive. The fracturing fluid consists of water, chemical additives which include biocides, surfactants, gelling agents (Faber *et al.* 2019), and a propping agent. The propping agent, typically sand, ceramic beads, or other incompressible materials, opens the newly created fissures to allow natural gas to flow more freely. However, although fracking has greatly increased the production of shale oil and gas, its adverse effects on the biosphere, anthroposphere hydrosphere, atmosphere and lithosphere (Meng 2017) has made it debatable which can lead to long term destruction of habitats.

***Bildung* as a Concept**

Bildung is not a new concept, and definitions by different scholars have been provided to create deep understandings of the concept of *Bildung*. The first use of the German term *Bildung* can be traced back to the 1750s where Nordenbo (2002) claim it was used in reference to educational enlightenment and he claims that the term is related to the verb ‘*Bilden*’ which means ‘to form, to shape’ (Tahirsylaj 2021: 2) and to the word *Bild*, which means image or an even perhaps a model image in agreement with which a student is to be developed (Sjostrom & Eilks 2020). Hotam (2018) points out that *Bildung* is commonly referred to as an emblem of rational, liberal, and enlightened educational ideas because it relates to an individual who practices universal rationality and makes autonomous decisions. The European Education Association of Adults (2021) states that *Bildung* combines education and knowledge necessary to thrive in your immediate society, and the moral and emotional maturity to both be a team player and to have personal autonomy.

From the given definitions, one can say that *Bildung* expresses education as a lifelong process that cultivates knowledge and argues for participative members of society. In *Bildung*, the importance of acquiring knowledge enables one to relate to the world, which could be described as the task of involving oneself in the world as a production of the world, which means both to encompass the world in oneself and to establish and express oneself in the world (Masschelein & Ricken 2010). Through the lens of the *Bildung* concept, an educated person should possess knowledge that liberates him from living in a solitary world by taking cognisance of the environment in which they live and contributing to its positive growth (Sjostrom *et al.* 2020). From a Humboldtian perspective, *Bildung* is both a process and an

outcome in developing a person through education (Tahirsylaj 2021) and acquiring attributes that make the individual into an acceptable member of the society in which he/she lives. According to Herranen *et al.* (2021) the two main elements of *Bildung* are autonomous self-formation and reflective and responsible action in (and interaction with) society.

As such, the concept of *Bildung* advocates for liberated individuals from failure to express themselves in the community wherein they live in, which can be achieved through an enriching education. This calls for assisting individuals to achieve their self-determination by developing and using their reason (can be without the guidance of others) and acquiring the cultural objects of the world into which those individuals are born and in which they are situated (Tahirsylaj 2021). *Bildung* gives room to individuals to be relevant and to take full responsibility for their environment and be able to navigate society at large. In *Bildung*, an enlightened member of the community is cultivated and can further develop in society (Tahirsylaj 2021). In this discussion, von Humboldt's approach to *Bildung* and education, which he also brings into politics by stating that the duty of the state as an 'educational state' is to help create these conditions (Hotam 2018), will also be used.

Democratic Citizenship

Many countries have associated democracy and citizenship with their ruling parties, where the rights and freedoms of their citizens are represented, hence the term democratic citizenship (Meylemans *et al.* 2022). To understand democratic citizenship, the two words democracy and citizenship will first be explained separately. In his definition of democracy, Popper, as cited in Nwogu (2015), identified two dominant variables: direct democracy, in which all citizens of a country are given direct and active participation in the decision-making process of their countries, and a representative democracy variable, in which the whole body of all eligible citizens remains sovereign power, but political power is exercised indirectly through elected representatives (But *et al.* 2022). Most communities practice indirect democracy where their voices are heard through their political representatives. De la Paz (n.d.) defined a 'citizen' as a member of a political community, which is defined by a set of rights and obligations, and citizenship representing a relationship between the individual and the state,

in which the two are democratic citizenship as a social construction, and many disputed and continually evolving ideas of citizenship often mirror the broader disputes about political ideology and the possibilities of government to perform a positive role in society, as well as the characteristics and actions that people should exhibit in a democracy if they are to be considered worthy and deserving of the privileges and rights of society. Holston (2022) further mentions democratic citizenship as the bedrock of representative democracy, in which citizens elect their representatives. While the term democratic citizenship has been widely used by governments in political circles, there have been challenges to fully represent citizens democratically, especially in marginalized communities (Diaw 2009). To further explain this thinking, Pimbert (2004), states that, in many countries, representative democracy has been heavily criticized for its inability to protect citizens' interests. Marginalized groups often do not effectively participate in such representative democracies. The poor are often badly organized and ill-served by organizations that mobilize their votes and claim to represent their interests (Pimbert 2004).

The World Development Report (2001) further confirms that poor members of society lack confidence in state institutions even though they still express their willingness to partner with them under fairer rules. Citizenship is learned through education, socialization, exposure to politics, public life, and formal or informal day-to-day experiences (Keating & Janmaat 2016). Marginalised communities are often overlooked to engage in practicing their rights as citizens, it should be noted that it is the governments' duty to ensure that a conducive environment is cultivated for their voices to be heard (Masiya *et al.* 2019). According to the World Development Report (2001) a common vision of citizenship is helpful in advocacy and recognizing the value of their opinions (Diaw 2009). This clearly explains how democratic citizenship has been heavily criticized for its lack of representation in poor communities.

The poor practice of democratic citizenship or lack thereof in communities where there is fracking leads to conflicts and protests as citizens fight for their voices and opinions to be heard during the planning and implementation of projects that directly or indirectly affect them and their environments. Such protests have become common in a world where political decisions are imposed as laws and policies and the citizens end up assuming the role of audience democracy or spectatorial democracy (Saward

2006) in which citizens are only consumers or implementers of governmental laws without them being part of the decision-making process.

Democratic Citizenship and Fracking

The 21st century is distinguished by the irreversible impact which the human species is making on earth, designated as the era of the Anthropocene (Hadjichambis & Reis 2020; Malhi 2017). When left unchecked, governments can indulge in resource exploitation sprees without paying particular attention to how the communities have to live with short- and long-term effects afterward. Hadjichambis and Reis (2020) claim that treating the environment as an inexhaustible source of profit without thinking about the (near) future seriously endangers the planet and threatens to drive society into an economic and demographic catastrophe. It is unfortunate that, in some instances, communities are not so much aware of the effects of resource exploitation in this case, fracking, hence their ability to exercise their democracy becomes limited.

Soresen (2020) states that a democratic society requires both the active participation and self-restraint of its citizens; therefore, democracy must be an ideal both cherished and respected by the citizenry. The need a communities to be able to fully exercise their democratic citizenship is very important as they are custodians of the environment; however, where the community is not aware of their democratic rights as citizens, the need for them to be educated will enable them to engage more on issues related to the effects of fracking in a democratic way. Albulescu and Albulescu (2015) state that the process of forming individuals for democratic citizenship does not imply only the acquisition of information on the democratic mechanism, but it also involves creating capabilities and attitudes that can transform a behavior into a building and rebuilding process. In other words, a democratic citizen should be freed academically, politically, and socially to fully execute their democratic rights.

The need for citizens to understand their role in their communities is important for them to make sound decisions. However, if the concept of democratic citizenship is not fully cultivated, its role in communities will not be fully understood. Communities have deep connections to their immediate environment and have indigenous and local knowledge that they have been practising to preserve their ways and preserve their environment; however,

when faced with new environmental challenges, they must adapt to new challenges.

Theoretical Framework

The theoretical insights that drive this paper emanate from the concept of *Bildung* and democratic citizenship, and the latter can be connected to John Locke's Democratic Theory, which advocates a vibrant community of thinkers and ideas from different people and institutions throughout the world (Dean *et al.* 2019). The theory offers opposition to anti-democracy, where so ever it is to be found; seeks the nonviolent resolution of problems; longs for open, recurring, challengeable, decision-making; dreams about life that is somehow better for us all (including nonhumans); and so much, much more (Dean *et al.* 2019). All of this has resonance with fracking as a challenge that will be experienced by communities which will be affected by exploratory endeavors to find oil and gas. In a democratic world, the role of the government is to favor the general advancement of the community, to operate with the greatest effect on public affairs; hence, the government should be judged by what it makes of the citizens (Lues 2014).

Methodology

The study was desktop research based on data from published articles and websites where the authors sifted various sources to find relevant information. These resources were selected through Google Scholar (GS) and the Western Norway University of Science (HVL) online library. The reason for choosing South Africa as a case study is that fracking is a new phenomenon that will soon unfold onshore and one of the authors is currently undertaking studies on fracking in the Drakensberg in South Africa. However, during the time of writing this paper, she was on a scholarship in Norway and saw resonance with concepts and debates on fracking abroad. Hence, she was exposed to literature on the need for communities, where there are existing exploration rights, to be rightfully educated and be in a better position to take part in the decision-making process. Poland was selected because as a case, it offers instruction due to a lack of democratic citizenship which led to public protests. In South Africa, there have been public protests that have been bubbling and spreading in opposition to fracking. As such, some similarities

and lessons can be drawn from these two countries.

Fracking and Lack of Democratic Citizenship in Poland

Although Poland had a pro-fracking government (similar to South Africa in this respect), the failure to produce gas on an economic scale and mounting pressure from environmentalist organisations have led companies to abandon fracking interests (Maierian 2021). The wide economic success of fracking in the USA (Cooper *et al.* 2016) triggered the interest of Poland to explore its fracking possibilities in the shale and gas industry with great hope to substitute its high reliance on energy from Russia, improve job opportunities, and meet energy demands at a much cheaper price as gas was aimed to be (Cantoni *et al.* 2018). However, these estimations claimed that the country possessed large volumes of technically recoverable shale gas resources (Wachtmeister *et al.* 2021). The fracking scenario in Poland has been characterised as a great injustice to democratic citizenship rights. This is the result of numerous grey zones during the planning and implementation phases of the project from the position of government and fracking companies which lacked transparency for citizens. The strategy used by the shale gas companies, as stated by Tony Hayward, BP Executive, was to make a hushed encroachment of shale gas exploration in Europe a quiet revolution (Mateka 2012).

For the shale gas revolution to be complete, companies and their allied governments must act faster than the European public can organize, mobilize, and counter them. For the revolution to work, companies and governments must be several pages ahead of the public: concessions must be granted before the public agrees, companies must drill boreholes before the public demands that more coherent shale gas laws be passed, companies must test shale gas with hydraulic fracturing ('fracking') before the public can ask what chemical concoctions are being used in the process, companies must jump from site to site ('wildcat') before the public demands compensation for several kilometers of deep boreholes that are drilled into their backyards, and contaminating their fields (Tony Hayward in Mateka 2012: 190).

The above extract clearly shows how fracking companies were willing to

connive with the government to be less transparent and not willing to account for their actions if the community needed accountability. According to Cantoni *et al.* (2018), the state disallowed any role for non-state and non-cooperative participation in decision-making, as they interpreted societal actors as a potential hindrance to their industrial plans, so the state partnered with domestic and foreign gas and oil companies to reach its goal. According to Rimple (2013), the people of Zurawlow once supported the proposal to drill in the hope that it would create much-needed jobs in the region, but this changed when two families' well water turned black after Chevron's seismic tests in 2010. The consultations that were conducted before fracking with the community members had spread the wrong information by the Chevron spokespeople. One of the farmers in the community commented on how the oil and gas company lied to them and treated them as uneducated people:

We were at a village meeting with the head of Chevron, Poland. He told us the chemicals they will inject into the ground will be salt and lemon juice. That's when I realized they treated us like we were ignorant (Wieslaw Gryn in Rimple 2013: 1).

The literature reveals that as fracking started, the water in Polish communities became contaminated with fracking chemicals, and the news of their public protests quickly spread despite the government pressuring the protestors not to make their concerns a great concern (Rozmysłowicz 2014). Citizens began to educate themselves as they were eager to know the truth about fracking, and people researched fracking online and found evidence that contradicted what they had been told (Rimple 2013). In a paper, Neslen (2015) revealed how Maria, a citizen, began to reject fracking after weighing the negative impacts for their communities as they were experiencing it daily despite the narratives they were told about job creation.

We don't need shale gas. It's one big scam. Nobody informed us of what was happening. The former mayor was useless. He promised work for everyone, but there was nothing. We are not going to work on the well. The people who have agro-tourism businesses know that it's not beneficial as the environment will be destroyed and people won't come here anymore (Neslen 2015: 1).

The community had only supported shale gas because they were not fully

informed about fracking in Poland; the news media's only focus was on the potential profits of fracking while the negative effects received very little media attention reveals Rimple (2013). This misinformation led to protests against fracking and Chevron, the designated fracking company. However, Chevron would not be easily dislodged and the company counter-sued the protestors, in an effort to hit protestors financially and intimidate them (Rozmysłowicz 2014). According to Neslen (2015), many more protestors were filmed by mystery cameramen in an effort to identify the protestors, and other protestors believed that their phones were being tapped. Environmental NGOs in Poland claimed to be operating in a 'climate of fear' (King 2013: 1). There were also allegations that some protestors were being bribed to change their attitude towards fracking by offers of employment and some economic incentives, such as renovating their homes with the hope that they would stop complaining about fracking (Neslen 2015). Eventually, Chevron was forced to abandon its exploration efforts due to mounting pressure from Polish protests. The above case of Poland offers a multitude of lessons for South Africa and fracking.

Fracking and a Lack of Democratic Citizenship in South Africa

The indigenous communities of the Karoo, in the Northern Cape of South Africa, where shale gas reserves were discovered, are poor and marginalized. The Karoo is a semi-desert area that is already experiencing the impacts of climate change and scarce water sources, and it is ecologically sensitive (Clark *et al.* 2021). Oil reserves in South Africa were first discovered by Soekor in the Karoo in the 1960s (Clark *et al.* 2021; Enslin *et al.* 2019). In addition, South Africa's economy is carbon-intensive (Orthofer *et al.* 2019), thus crying out for a more climate friendly alternative. Thus, the decision to develop shale oil and gas in the Karoo has been under pressure because of energy shortages. It is known that the Karoo region is a water-stressed area, the water supply is insufficient to meet the demands of local communities from both the surface and underground reserves. Therefore, apart from water stress to the communities, fracking will bring other challenges, such as GHG emissions, earthquakes, and biodiversity changes in the area as argued by several researchers. The capacity of the Karoo area to meet the water requirements for shale gas fracking without putting pressure on communal

water resources is said to be highly questionable (Orthofer *et al.* 2020).

According to Willems (2016), shale gas exploration involving hydraulic fracturing (fracking) has been on South Africa's energy agenda since 2010, as a potential alternative to coal. Internationally, the desirability of fracking has been debated due to increasing evidence of associated environmental and health risks (Fig 2013). The discovery of large potential resources for shale gas in South Africa has brought excitement about resource development regardless of its effects on the environment, with the government allocating most of the Karoo Basin for technical cooperation permits, whereby desktop studies and surveys could be conducted, but no exploration drilling (Clark 2021).

Many fracking companies have shown interest in developing the shale gas industry, including Western Cape, Eastern Cape, Northern Cape, Free State, and KwaZulu Natal, with Royal Dutch Shell, Falcon Oil and Gas, Sunset Energy, and Bundu being granted exploration rights (Development Bank of Southern Africa 2014). The execution of the whole process was paced up, such that many of the questions regarding the effects of fracking on the environment were not discussed and instead of the government creating a space for a transparent public policy discussion about whether the fracking is appropriate for South Africa's development needs, it chose an obscure administrative process in which the public had little say.

According to the Guardian Environmental network (2011) in South Africa, farmers and homeowners own the surface of the land, while rights to any minerals or resources that lie underground are the government's to exploit, this means that people in Karoo did not stand to benefit by directly earning any royalties. For the poor people in the Karoo, their engagement in the shale gas development in their area was not prioritized by fracking companies (Quartey 2015). The need for public participation in environmental and health impacts was constantly watered down, protocols associated with environmental impact assessments were thinned out, no efforts were made to engage locals fully, and no resources were set aside to facilitate or promote effective public participation. This often resulted in too little time for sufficient public consultation, as it was seen as a hindrance to the economic development of the area (Fig 2013). The Karoo community was not satisfied with the government's consultation program; hence they sought to stop fracking companies from pursuing their own interests, thus the Karoo Action Group (TKAG), an anti-fracking environmental group, was formed to protest against fracking (Development Bank of Southern Africa

,2014). However, the protests were seen as a fringe group being called by names such as ‘bunny-huggers’, ‘emotional’, ‘standing in the way of development, growth, and jobs for the poor’, ‘selfish’, ‘rich landowners’, ‘anti-development’, ‘Nimby-ists’. Le Roux (2021: 1) claimed there were threats and personal verbal attacks, smear campaigns and many sleepless nights which resulted for some who opposed fracking in the Karoo (Quartey 2015). The pressure from the fracking opponents then led to a temporary ban in 2011, which was lifted again in 2012, and the fracking companies renewed their interests in KwaZulu Natal.

***Bildung* Meets Democratic Citizenship in Fracking Communities**

Democratic citizenship is crucial in the development of a strong moral code of individuals; it enables citizens to participate in their communities (Peters 2017). In the 21st century, participation among citizens is becoming low and unequal globally, and increasingly in favor of those that are at the helms of wealth and income distribution as a result of political power leading to a lack of democracy in communities (Parvin 2018).

From the two case studies, it is evident that a lack of democratic citizenship often leads to political instability as communities fight for their voices to be heard. It is important to note that, societies are not ‘*tabula rasa*’ as claimed by John Locke (Duschinsky 2012), they are born with inner knowledge of how to live in their immediate environments, and as they grow their knowledge which they acquire from formal educational institutions, together with their indigenous and local knowledge, this can enable them to apply it to new experiences. By bringing in scientific knowledge and building on what they already know, knowledge can improve their roles as democratic citizens. However, in the event that communities fail to fully adapt to the newly prevailing conditions, education in communities is important. Educational activities should not be limited to school-age or school buildings. Piepa *et al.* (2008) state that the *Bildung* has different connotations for many people because their meanings have changed during history and will sometimes be associated with a set of manners or behaviors associated with upper-class or elite values. To educate communities on fracking and democratic citizenship, different stakeholders such as NGOs and the government can step in and facilitate the learning that communities need on

fracking so that they can be more democratic in their orientation. The following are various ways that can be used to empower the communities on fracking and promote democratic citizenship through education.

Recommendations

The use of social media in the 20th century has provided various platforms for communication and education. According to Popa and Voinea (2017: 14), social media is a revolutionary concept, defined in the broadest sense as ‘any online service through which users can create and share a variety of content’. Social media include blogs and micro blogging (Twitter), social networking sites (Facebook, LinkedIn, ResearchGate, Google, forums, etc.), communities that share information in different formats (audio and video), and collaborative projects (Wikipedia, Google doc, Edmodo, Prezi, etc.) (Gedda-wy *et al.* 2022). The most accessible gadget, which is the phone, can be reached through WhatsApp groups, community Facebook pages, etc., so that people can be educated on how they can practice their rights as democratic citizens on resource extraction in their environments. Volunteers with expertise in these issues of concern can share their knowledge on community platforms.

Non-Governmental Organizations can bridge the gap between communities and democratic citizenship through education. According to Brophy (2020), many different non-governmental organizations (NGOs) support education in Africa, and some NGOs, such as Save the Children and OXFAM, are large multinationals, whereas others consist of a small number of volunteers helping to raise funds for a school in a particular village. For larger organizations, education is only one part of their work, along with other areas such as health, water and sanitation, and child protection. Smaller NGOs are more likely to specialize in one area, such as education, but they can extend for different purposes and to meet different needs within education (Brophy 2020). However, NGOs have not paid much attention to educating communities on emerging issues to sharpen their knowledge of resource extraction, it is another gap they can fill in the communities.

Conclusions

In this study, which examined the educational measures that can be used to

empower communities to fully play their role in democratic citizenship, different measures were suggested. The literature showed the lack of democratic citizenship in communities where there is fracking, so protests are bound to occur as they push for their democratic voice to be heard. It was also found that the education acquired in class or their indigenous knowledge systems prepares them for life. They can understand the effects of resource extraction and link them with the likely effects of fracking, showing how education, as a lifelong process, can inspire people to stretch their minds when thinking and to express themselves. The research emphasized the need for communities to be educated, not necessarily in the classroom but alternatives to the classroom's institutions were given.

Zaphir (2019:9) claims that through democratic procedures, citizens are subject to a collective learning process by being part of communal decision-making and in so doing can develop their capacities for liberation with practice over time, such that, by viewing democracy as both a learning process and a decision-making mechanism, the quality of liberation and participation can improve as well. Most of the information from the research was acquired from the literature. In the future, the need to increase studies on *Bildung* and democratic citizenship in resource exploitation should be increased to further understand the concept of *Bildung* and democratic citizenship in resource extraction. The *Bildung* concept is usually associated with what the school can offer; however, in this article, the school is not limited to the classroom, but it also stretches to non-formal and informal education in communities, because learning is a lifelong process, restricting school to a normal class limits the spheres of learning. By describing learning as a lifelong process, the privileges of exposure to education differ; some community members are well exposed and get educated by life events through exploring on their own, whereas others lack the exposure to explore more about life due to different reasons or lack both opportunity and privileges, and this may be to their detriment if they are unable to participate in democratic decision making regarding their future and fracking in their communities.

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