The Use of Learner-Centred Pedagogy to Improve Teachers' Interpretation of Geomorphology on Maps in Geography Teaching

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DOI: https://doi.org/10.23918/ijsses.v13i1p3

Abstract: Learner-centred geography teaching across South African schools involves pedagogies that move from the teacher being a source of all the information and create space for learners to take responsibility for their learning. The learner-centred approach requires the arrangement of learners in the classroom, learning programmes, and practice. This involves learners actively engaging together on the interpretation of geomorphological maps to construct knowledge and application towards the learner-centred principle. However, learners in geography classes are not granted more chances to be independent due to the fast pace of completing the syllabus. Hence, this study is explored using a learner-centred approach to improve teachers' interpretation of geomorphological maps in geography teaching. Using an interpretive paradigm guided by a qualitative approach, a multiple case-study design was used to look at teachers' practices and implementation of a learner-centred approach in their classroom when teaching an interpretation of geomorphological maps. A purposive sample was used to select six geography teachers who performed poorly in the geomorphology and Map work section during the academic year 2021-2024. Experiential learning theory was applied as a theoretical lens. The present study revealed that a learner-centred and teaching-centred approach improves learning, leading to better academic performance in interpreting geomorphological maps. The study concluded that a learner- and teaching-centred approach should be applied for all learners' effectiveness and involvement in learning geography. The study recommends adoption of effective learner-centred approach on this topic, activity based-learning and teacher-learner content play-game, as teaching strategy for geomorphological maps. The study add knowledge to content application through learner-centred support and engagement in geography teaching.

Keywords: Experiential Learning, Geomorphological Topic, Improvement on Pedagogy, Learner-centred, Topographic and Orthophoto Maps, Teacher's Interpretation on Geography Teaching

1. Introduction

Globally, teachers are trained to administer and implement learner-centred approaches in the classroom. Similarly to South Africa, teachers are expected to use various teaching pedagogies, including a learner-centred approach, which they do not often implement in their classrooms.

Received: 17.08.2025
Accepted: 11.04.2026
Published: 12.04.2026
Molapo, K., & Malatji, K. S. (2026). The Use of Learner-Centred Pedagogy to Improve Teachers' Interpretation of Geomorphology on Maps in Geography Teaching. *International Journal of Social Sciences & Educational Studies*, 13(1), 51-63.

This could emanate from influence of time, pace setter and completion of content teaching. In geography, Van del Pol et al. (2019) argued that teaching map work should allow communication or discussion among learners. Communication can be used to teach learners how effectively they can work collaboratively in a classroom. Such initiatives allow a better flow of interpretation and analysis of theoretical questions asked in map work. Warner et al. (2022) added that when words with double meanings are explored, they can be explained to learners for a better understanding. To further emphasize the interpretation of the concepts (drainage patterns) and process of river capture of geomorphology on map work. In a classroom, map work is well managed when a teacher presents knowledge to imply a set of thinking skills that make it possible for learners to visualize graphic instruments to represent a theory on maps (Hsu et al., 2018). The classroom of teaching interpretation of geomorphology and mapwork is managed in a way that makes learners understand how to interpret concepts on maps. These geomorphological concepts are understood as a set of objects, events, and ideas for application on maps (Keller et al., 2020).

Concerning the learner-centred approach, teaching the interpretation of geomorphological maps requires teachers to monitor the learning progress of learners. Such should happen specifically in the interpretation of geomorphological maps, requiring teachers to frequently check learners' progress in how they respond to the interpretation of geomorphology concepts on maps. Whitmeyer and Dordevic (2021) admit that learners can be positioned to use map symbols to confirm their understanding. Individual learners' position will include identifying blue colours on the map representing rivers, to test their level of understanding. Moreover, Griffin et al. (2019) state that even though learners are positioned, teachers should confirm learners' thinking and processing of the content. In a simple context, teachers should prioritize monitoring tools when teaching lessons for better learner feedback.

Such learner-centred requirements reveal how concepts in geomorphology can be understood by learners using English as a classroom instruction medium, where learners are exposed to interpret geomorphology and mapwork content (Mahlaba, 2017). The two sections can be understood if learners understand the language of teaching, showing that the language teachers use to teach map work plays a vital role in the geography classroom. It requires teachers to be mindful of English language used in geomorphology and Mapwork. Such practice simplifies the approach of questions asked in the classroom and shows how learner-centred learning is possible in a geography Classroom. This paper explored how learner-centred teaching can possibly reduce difficulties experienced by learners in different sections of geomorphology, which makes individual learners not interpret the question correctly on the map. The explorative study was sparked by the NSC Diagnostic Report for Geography (DBE, 2021).

2. The Study Purpose and Theoretical Framework

The study aimed to explore how teachers use a learner-centred approach to improve the teaching of the interpretation of geomorphological maps in the geography classroom. Six multiple case studies from geography teachers were used as participants to understand the study. This paper fills the gap in the existing literature on learner-centred pedagogy, specifically on geomorphology and Mapwork in geography teaching. To achieve the aim, three research questions guide this paper:

- What challenges do geography teachers face when using the learner-centred approach to teach the interpretation of geomorphology on maps?
- How best can integrating geomorphology and mapwork be taught in the classroom using a learner-centred approach?
- What strategies can be implemented to improve teachers' interpretation of geomorphology on maps in geography teaching?

The present study focused on geography teachers for two main reasons. Firstly, in secondary schools in various countries, geography teachers use teacher-centred pedagogy to teach the integration of geomorphology and map work to fast-track completion of the syllabus. At the same time, the implementation of curriculum policies emphasized learner-centred pedagogy. The negligence and use of a teacher-centred approach led to the failure of approaching formative and summative assessments given to learners. Secondly, the present researcher has been a geography teacher more than five years of teaching and 2 years as a geography lecturer; the second researcher has been a 10-year geography lecturer. Thus, the geography curriculum falls within their expertise, experience, and niche area.

The theoretical lens for this paper is experiential learning theory, used to inform and guide the study. Experiential learning theory has been applied to the study, emphasizing how learners in geography classrooms learn. Kolb (1984) on learning style 'diverging 'means people diverge to gather information after brainstorming together to form a concrete idea. In the geography classroom, learners engage in groups and share ideas before making conclusions. Some of the pedagogies teachers use at this stage are discussion and collaboration, which allow teachers to help learners work with their peers to understand and interpret concepts on geomorphological maps and will enable learners to give their input about learning content (Lane & Caldis, 2018). Kolb presents such practices to accommodate learners' different views and promote learning.

The second stage, identified as assimilation, involves people who prefer clear explanations rather than practical platforms (Kolb, 1984). Most learners in geography ascribe to this stage of learning because geography content contains more theory than practical. In the context of geography teaching, teachers should teach learners how to apply theoretical knowledge to practical questions in map work (Mitchell, 2018). The third stage, converging, allows learners under a converging learning style to think before attempting to solve problems or make conclusions (Özdemir & Kaptan, 2017). They tend to find solutions to practical issues, such as river profiles. Additionally, they are concerned about activities in the subjects rather than focusing on learners across the classroom. Learners who fall under the converging style use practical ideas to solve problems and make informed decisions (Kolb, 1984).

The fourth stage, the accommodating style, involves people who rely more on their instincts and reasoning than logic (Kolb, 1984). Learners who are accommodating use other pupils' analyses to find solutions to new challenges encountered at this stage. They use instincts to attach meaning to the problem observed. At this stage, the learner-centred approach allows a teacher to teach geomorphological concepts without interpreting those concepts to accommodate all learners in the classroom. By accommodating, all learners are given a chance to work on their own (Kolb, 2005).

3. Literature Review

The focus on a literature review provided precise details on both international and national perspectives. However, this paper explores the literature across countries and informs the reader of using the learner-centred approach model to improve teachers' interpretation of geomorphological maps.

3.1 Problem based on learner-centred education

In countries such as Turkey, learners are always provoked by the content and pedagogy of teaching in geography. Chisango et al. (2020) argue that the maps used by learners help individual learners develop attitudes towards reading, analysing, and interpreting the concepts of geomorphology in map work. The concepts mentioned above linked to the map because learners fail to understand geography concepts that revolve around comparing the symbol's singular properties and acquiring knowledge properties of symbol groups on a map. Map tools are used in decision-making and constructing knowledge by interpreting

information from geomorphology to maps (Pereira et al., 2018). However, in a society, individuals encounter different challenges and difficulties in reading and interpreting content on geomorphological maps and using the maps correctly. Scholars like Darcy and Rocca (2022) further argue that secondary school learners fail to locate provincial areas, geographical formations, and the distribution of maps due to their attitude towards the content. Furthermore, teachers who are unable to give clear and comprehensible directions on learner-centred pedagogy are not of benefit to learners.

To this concern, learners begin to misunderstand geomorphological concepts and processes that majorly impact learners' interest in the subject, causing learners not pay full attention to the proper content and apply concepts to the maps. Furthermore, issues related to parents' educational backgrounds, peer influence, and parental expectations play a role in influencing learners' attitudes toward geography as a subject (Opoku et al., 2021), revealing how the contribution of external and internal factors influences individuals' learning in the classroom. Generally, learners are motivated to learn if the educational content presented is very interesting and successfully leads to the attainment and understanding of concepts and processes on maps. However, learners of the geomorphology content would further influence their achievements and learning outcomes (Güneş et al., 2020). Scholars like Alabaş and Yinilmez Akagündüz (2021) conclude that learners' attitudes in Turkish secondary schools' range across the grade level towards the geography subject with negative impact on performance. Hence, the present study focuses on the use of a learner-centred approach to improving the interpretation of geomorphological maps.

3.2 Teacher to learner: learning-centred

Teaching and learning remain the core focus in any subject across various countries. In geography teaching, Naxweka and Wilmot (2019) contend that if learning to think spatially and interpret information found on a map involves learners, teachers should play their part by being able to read and interpret concepts on maps. The Namibian geography curriculum has explicitly supported these in the sense that if geography teachers are unable to make proper reading and interpret content on maps, learners are likely not to understand the importance of interpretation of content on maps. Similarly, Hungerford-Kresser and Vetter (2017) argues that teachers' lack of understanding of the learner-centred education policy involves learners in the classroom to understand on their own during teaching and learning process of the geomorphological concepts. However, without application of the concepts on maps, learner-centred approach will not achieve its purpose of teaching geography.

Changwe and Mwanza (2022) further argues that a lack of proper understanding of curriculum transformation among teachers has created gaps between the intended and implemented curriculum, meaning that geography teachers are not implementing the original ideas and intentions of the curriculum developers. However, some of the teachers in Namibian educational system do not understand and know how to implement the learner-centred curriculum policy at a classroom level. The teachers' inability to make learners the centre of the lesson leads those learners not to have knowledge and skills of reading and interpreting content on maps.

Kinchin et al. (2019) believe that map interpretation can be described as a way of teaching by applying content knowledge to maps. As map work teaching in various countries such as Namibian, Nigerian and South African schools requires both teachers and learners to interpret geomorphology on maps. The problem lies with a shortage of geography textbooks or information in the textbook that is not enough to understand the interpretation of concepts on maps. Learners are also not given maps to practice the content knowledge taught in the classroom without teachers. These hinder their learning progress in terms of reading and interpreting concepts of geomorphology on a map. Ockhuizen (2018) maintains that the lack of resources for teaching the interpretation of geomorphological maps is among the aspects that give the subject an unstable status. This issue is also encouraged by textbooks with few map extracts, which makes

learners passive recipients of the content without proper application. Wilmot and Dube (2016) asserts that the unevenness in the subject of geography concerning the standard of teaching interpretation of content and processes on geomorphological maps in classrooms is questionable, along with the teacher's knowledge and performance. Hence, a need for consistent learner-centred approach to the teaching of mapwork in classroom be a norm.

3.3 Learner-centred approach as a strategy

In geography teaching, geomorphology and Mapwork continuously show challenges that require a practical strategy with pace consideration. In relation to such, Lee et al (2021) argues that in South African geography classrooms, learners are not given a reason to study map work. These create problems in the geomorphology and Map work sections (Chandler et al., 2018). As the problem learners have with learning determines how they approach the given work or how they understand the content taught in the classroom. Aydın and Tülümen (2018) assert that a positive attitude towards learning geography can lead to high academic achievement. Suppose learners have negative attitudes towards the content, such as geomorphology and map work. In that case, they are likely not to understand the key concepts that seem to be significant in teaching and learning in geography. However, Landicho (2020) asserts that secondary school learners who show a positive attitude toward learner-centred pedagogy understand the content of the subject better than those with a negative attitude towards geomorphology content and map work. Ahammad (2021) further asserts that the correlation problem learners showed in the classroom of geography reveals that the more positive attitudes learners have on learner-centred pedagogy, the higher level of understanding and achievement.

Obeka (2021) contends that a strong correlation exists between learners' positive attitude and academic attainment. The researchers' view lends to a position that indicates the attitudes on learner-centred pedagogy need to be well addressed to make individual learners play a role in understanding key concepts in geography. Njapha (2021) continuously believes that learning depends on significant factors, such as the attitude and commitment of learners in geography. If learners fail to be at the centre of a geography lesson, they are likely to fail at the interpretation of geomorphological maps. Moolman et al. (2020) conclude on a note that learners' achievement in a subject is more affected by the attitude towards the subject rather than the school climate or environment. Peixoto (2023) supports the view that learners' understanding of the interpretation of geomorphology and maps can be linked to a variety of factors, including self-efficacy and learner-teacher efficacy.

To sum up, researcher's like Mukondeleli (2018) admits that learners in geography classrooms have different types of intellectual capacities regarding the content of geography; therefore, they should be catered to in the subject. If the issues mentioned above are not fully addressed in teaching the interpretation of geomorphological maps, learners will never understand and be able to interpret content on maps. Benjamin and Adu (2019) conclude that learner-related issues or problems about learning the content have a significant effect on the content taught by teachers which is seen when learners are unable to distinguish between right and wrong content after it has been delivered in the classroom. As teachers continue to do more work than learners instead of application throughout the lesson. Such results or findings show poor learner engagement, use of learner-centred teaching and experimental interpretation of concepts on maps. Hence, there is a need to explore the use of learner-centred approach with intention to observe improvement on teachers' interpretation of geomorphological maps in geography teaching. The paper further discusses methodology, and results on learner-centred approach and how they can use such approach to integrate geomorphology and Mapwork.

4. Method

To address the above research question, a qualitative approach and multiple case study design were adopted to understand the use of a learner-centred approach model to improve teachers' interpretation of geomorphological maps. This paper used an explorative case study design focusing on six geography teachers with more than five years' experience. Collins and Stockton (2018) assert that a qualitative research perspective assumes that knowledge is built from experience to push the boundaries of what is known and illustrates the empirical context. The explorative case study design used was relevant to explore the challenges and experiences of the use of learner-centred pedagogy in the interpretation of geomorphology and Map work.

De Vos et al. (2017) and Ebneyamini and Sadeghi Moghadam (2018) assert that a case study in research entails deciding the topic to be studied, the population to choose, how to sample, and data collected to be analysed. It further provides both the researcher and the reader of the research report with real people in a real situation. Six teachers in three secondary schools were purposively selected among the ten schools in Moletlane circuit, Capricorn district, South Africa. The selected secondary schools were based on the performance in both geomorphology and Mapwork. Another criterion used to select the geography teachers was for each teacher to have a four-year degree in teaching geography.

Data collection and analysis occurred concurrently to allow the researchers to check the trustworthiness of the data about the insights provided rather than collecting data as a one-off. Cresswell (2013) advises that data collection and analysis in a qualitative study must be conducted concurrently for credibility. Each piece of data collected from the perspective of challenges and integration of geomorphology and maps was recorded and kept safely for confidential purposes. Common ideas about learner-centred pedagogy emerged into themes used to present the findings and analysis.

5. Ethical Considerations

Permission to carry out the study was obtained from the relevant authorities of the Tshwane University of Technology with reference FCRE/PE/STD/2022/10 and the Limpopo Department of Education. The targeted participants in the study were informed of the purpose of the study and were asked to participate voluntarily, obtaining their consent (Manti & Licari, 2018). All geography teachers who formed part of the study signed a written agreement to ensure anonymity of the information regarding the study.

6. Results

Each geography teacher's views and practices on the use of learner-centred pedagogy and practices are presented verbatim in six case study profiles. The three themes that emerged are:

6.1 Difficulty on teaching the integration of geomorphology and Map work

The teaching and learning in educational institutions are observed through good management of the school, class attendance, and regular activities given to learners. To maintain the geography teaching and learning standard, teachers must adhere to their lesson plans and use all the necessary instructional materials applicable to the learning content. Regarding challenges on using learner-centred to teach geomorphology and Map work, participants had this to say,

> *"Incompetency on both geomorphology and Mapwork content, I think in a school, teachers who know map work teach those sections, and the same applies to the content of geomorphology."*

> *"In addition, content needs to be intertwined to meet the requirements for interpretation of geomorphology on maps. Teachers should make it a point that map work interpretation is taught every week. Most of the challenges on learner-centred will rotate around teacher development to support teachers regarding the quality of teaching interpretation and geomorphological maps."*

The quotation gives a reflection that teachers who are responsible for geography teaching and learning in secondary schools focus on different sections. One can argue that participants believe a teacher can be competent by teaching the sections as far as competency is revealed.

In the educational institution, challenges are observed from teaching practices. The practice can be applied in the classroom and outside classes. Additionally, the participants said:

> "*Use of different approach do not fit all learners found in the classroom, giving learners more class activities based on the interpretation of geomorphological maps. I bring chocolate to the classroom, and we play for 30 seconds using geomorphology concepts and definitions to make learners participate in the classroom. In addition, regular assessments should be made on videos, slides, and learners be taught how to interpret on their own."*

The above quotations reveal that teachers believe more class activities can encourage learner-centred pedagogy with knowledge of the interpretation of geomorphological maps and challenges on these two sections. Additionally, assessment can be in the form of playing a game using concepts of geomorphology to make the content sink in learner's mindset.

6.2 The link of two content section in geography teaching

Participants believe that collaboration between teachers from different schools can make a huge change as they share ideas on how to teach the interpretation of geomorphological maps. The participants had this to say:

> **"***Collaboration of teachers from different schools should have advice on how to attempt content in a better way. Always teach Geomorphology with maps to make learners understand; if not, learners will not improve. Learners need to be exposed to an excursion regarding the interpretation of geomorphological maps, where they observe the ridges and gradients of different mountains."*

The above quotations clearly show that learners need to get variety approaches, such as learner-centred pedagogy, from teachers to teach the content of geomorphology and maps. Additionally, teachers should consider outdoor teaching of geography to help learners gain the strength of participation in learning the interpretation of map content.

Learners are vessels with knowledge transferred from their early development until the end of their existence. In teaching and learning, teachers should apply team teaching to clearly understand where the problem in the section of geomorphology is observed. In response to ways of approaching geography teaching, participants said:

> "*Peer teaching for interpretation of geomorphological maps should be encouraged to make it clear that learners understand the interpretation of geomorphological maps. Teachers have challenges regarding the interpretation of geomorphological maps. Proper mitigation of the geomorphology and maps can be placed."*

The quotations show that teachers have views that are aligned together, as they strongly believe that team teaching/work is the best weapon for such topics as geomorphology and map work. One can argue that geomorphology can be easily understood from the angle of team teaching or teamwork.

6.3 Initiatives in geomorphology and Mapwork

The participants further believe that teaching can be in different forms, where learners are engaged in various activities that build on the knowledge and understanding of learners in the classroom. The participants had this to say:

> "*Extra-lesson could be the way to escape from learners who do not understand the interpretation of geomorphological maps. Extra lessons are needed because there is too much work; therefore, they will enable learners to understand the concepts of geomorphology. Learner profiling can make a difference. Additionally, teachers need to bring videos and use projectors to outline the features of geomorphology. Teachers should use question papers to test learners. Arrangement of learners in groups such as level 7 and use of peer Assessment games and classes to give feedback or be on a one-on-one session to give constructive feedback."*

From the quotations, participants argue that extra lesson and opportunities can make a difference in teaching the interpretation of geomorphological maps. Additionally, one argued that learner profiling needs to be encouraged to group learners according to their intellectual capacity and intelligence.

To add, geomorphology should always be taught with a link to map work to train learners on how to respond to the interpretation of geomorphology on maps. The link should include all aspects to familiarize learners with how the question is emphasized. Local maps should be in line with the given resource. The participants in the study explained that:

> "*If we can be provided with local maps to teach interpretation of geomorphological maps, these will allow learners to observe features in the local area. Additionally, expose learners to their local area and fieldwork, even if it can be allocated one hour on the timetable, to develop the surrounding maps before learners can be exposed to other maps. I think that would be a better way to improve the interpretation of geomorphological maps. Additionally, regular visits by the head of department and educational specialists to see whether learners are given a chance to participate ."*

The quotations further emphasize that teachers must be well-developed to allow smooth teaching and learning in the classroom. Therefore, departmental heads need to constantly conduct classroom visits to check how the geomorphology and Map work content is taught. One can argue that a conclusion can be drawn from the class visits.

7. Discussion

The quality of geography teaching is observed through the preparation of the lessons and sustainability of learner-centred pedagogy. Hence, geography teachers remain at the forefront of teaching and learning content to make learners understand the learning concepts and processes to maintain quality teaching and learning. In their studies, scholars like Boadu et al. (2022) argue that teachers should be able to interpret the subject matter, prepare lessons, and evaluate the lesson outcomes. This is supported by Mutebi (2019), who states that the quality and success of teaching geography rely on the inputs, knowledge, and skills of geography teachers with learner-centred pedagogy. The capable quality teachers are a challenge in the

profession of teaching, and they need to be accountable for their teaching to promote significant of the subject in schools and career society.

The study revealed that geography teachers should use different pedagogy to maintain the good quality of teaching of the interpretation of geomorphological maps. However, several characteristics and traits are used to identify the quality of geography teaching. These can be different types of assessment, and teachers should also be assessed to check whether they have been trained to teach the section of geomorphology and mapwork using learner-centred pedagogy. Maulana et al. (2017), in their study, point out that the identified attributes of what makes a quality teacher in terms of experience lie in knowledge and understanding of content and results from learners.

Although teacher-centredness is discouraged, Mahlangu (2020) posits that for a teacher to maintain good quality, geography teaching should cater to the learning needs of learners in the classroom and address the gap in knowledge and skills. The researcher observed that teachers do not prepare their lessons daily because, amongst all the observed teachers in the sampled school, few teachers provided their lesson plans. Such practice leads to teacher-centred instead of learner-centred pedagogy. This shows that teachers decide what to teach on the exact day of the lesson instead of before the lesson. Kolb's (1984) theory reveals that reflective observation allows the teacher to do self-assessment or reflect on the teaching experience to maintain quality teaching. All geography teachers can do this to maintain the high standard of the subject in the teaching and learning classroom.

The study further revealed that geography should be taught by teachers who demonstrate competency in the subject. The only way team teaching in the subject can be applicable is to monitor the strengths and weaknesses of teaching to give individual teachers training on the sections they find challenging to understand, and make learners contribute to learning and apply the theoretical knowledge on topographic and orthophotography maps. Malatji (2019) argues that teamwork can curb the spirit of subject ownership, where sections of the subject are avoided because they are deemed too complicated by a teacher and can be covered by others. This is supported by Hoffmann and Ramirez (2018) that in a classroom, co-operative learning with teachers planning can make learners understand the sections that underpin the research question. For teachers to maintain a good spirit of teaching, learner-centred pedagogy and teamwork are pre-requisites.

In the study of Malatji and Singh (2018), it was discovered that teachers should be trained on geography, especially on sections such as geomorphology and map work, which allows learners to apply theoretical knowledge to maps. Hagger and McIntyre (2018) further point out that seniors should apply teacher training to show teachers effective ways to co-operate, plan, and work together with teachers and learners in geography teaching. The researcher recognized that geography teachers do not believe in team teaching, which is a disadvantage for learners in terms of geomorphology and Mapwork teaching. Therefore, a proper understanding of the interpretation of geomorphological maps requires teamwork teaching with the application of learner-centred pedagogy. This is supported by Kolb's (1984) theory, where teachers review and reflect on the structural discussion of the lesson to apply team teaching. Proper teamwork among geography teachers should be maintained to guide and tackle the sections such as geomorphology and map work.

8. Conclusion

The study concluded that learner-centred pedagogy should be applied for the effectiveness and involvement of all learners in the teaching of geography, specifically in sections such as geomorphology and Mapwork. The study further emphasizes that for any secondary school that requires improvement on the teaching of the interpretation of geomorphological maps, learner-centredness should be prioritised.

Additionally, teachers should be trained to teach geomorphology and maps concurrently. The teaching pedagogies, such as small groups, whole class, discussion, cooperation, and collaboration, should be strengthened to allow learners to share ideas about the teaching content of geomorphological maps. Furthermore, teacher seminars should be held weekly to tackle the application of geomorphological content and maps. Teamwork in teaching geography is outlined in the study, which can help geography teachers work together using the learner-centred approach to teach the content of geomorphology and maps.

9. Suggestions for Future Research

The study recommended a learner-centred and teaching-centred pedagogy as a pillar to the teaching and learning of geomorphology and Mapwork. Adoption of effective learner-centred approach on this topics, activity based-learning and teacher-learner content play- game, as teaching strategy for geomorphological maps. The inclusion of learner-centred instructional materials for teaching and learning should be in consideration. Weekly meetings encouraged to reflect on the use of a learner-centred approach to topics such as geomorphology and Mapwork, to check progress, and give quick reminders on how to tackle the teaching of geography. In the classroom, learners be given a chance to apply geomorphological content on a map to gauge its effectiveness daily. Future research studies can focus on experiences of teaching climatology and geographical Information Systems concurrently to identify the gap between assessment structure and performance. There is a need to examine such experiences to check low achievement in these sections, as the South African geography teachers' practices show that the use of learner-centred pedagogy is easily encouraged in the teacher development programme lead by Department of basic education with less implementation in the teaching practice.

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