

## **An analysis of the improvement requirements for school-based formative assessment modules in Geography subjects**

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### **Abstract**

The educational transformation initiated in 2010 emphasizes holistic student assessment covering cognitive (intellectual), affective (emotional and spiritual) and psychomotor (physical) aspects in line with the National Philosophy of Education. School-based assessment (SBA) is not a new concept but rather an improvement to the existing National Education Assessment System (NEAS), with a greater focus on non-examination aspects. Through this system, academic assessments of students are continuously conducted using both formative and summative concepts, referring to standard reference assessment models. This study aims to assess the need to develop the illuminative model formative assessment module (PERFORM-i) for the topic of population and settlements in Malaysia in Form 1 geography. PERFORM-i is a formative assessment module focusing on task-based assessment, assessment in learning and assessment for learning. The study is conducted in three phases. The first phase involves building the assessment module based on mastery learning theory. The second phase involves developing assessment activities for the population and settlements topic in Form 1 geography. The third phase involves a survey to assess experts' views on the need for the PERFORM-i module in teaching and learning in the classroom. The results of this needs assessment are crucial to ensure that the development and evaluation of the PERFORM-i module positively impact implementation of SBA.

**Keywords:** Assessment module, classroom, formative, illuminative module, school-based assessment, teaching geography

### **Introduction**

Teachers play a significant role in assessing students' abilities, progress and achievements. Various efforts have been made to improve, maintain and increase this progress in line with current world developments, especially in the context of the country's education system (Aziz, 2011; Chen et al., 2021; Hanifah et al., 2020). At the school level, teachers play an important role in determining the

learning outcomes to be assessed, designing and developing assessment instruments, analyzing assessment information, reporting, making follow-up actions and reviewing actions. Through these assessment activities, the development of students' potential, including integrated intellectual, emotional, spiritual and physical aspects, can be monitored in line with the aspirations of the National Philosophy of Education (FPK). This is in line with the principles of school-based assessment (SBA), which is an assessment process managed and carried out by school teachers (Franchis & Maslawati, 2023; Saima et al., 2024).

The Education Development Master Plan (PIPP) in the 9th Malaysia Plan (RMK-9) has established six strategic cores to strengthen the country's education system. The six cores include fostering the nation state, empowering national schools, building human capital, dignifying the teaching profession, reducing educational gaps and increasing the brilliance of educational institutions (Kementerian Pendidikan Malaysia, 2016). In line with that, School-Based Progress Assessment (SBPA) is an assessment concept that focuses on assessment and assessment activities by agencies outside the school, especially through examinations carried out by the Malaysian Examination Institute and the Malaysian Examination Council (Gultekin & Demirci, 2020; Mohd Azry et al., 2021). PKBS also provides important information to teachers regarding the continuous development of students' learning. Therefore, SBPA is considered an important component in the teaching and learning process (Schildkamp et al., 2020).

The Malaysian Ministry of Education needs to expand the use of SBPA to all assessment levels in Malaysia (Zulkarnain et al., 2019). This includes assessing students' progress while carrying out formative assessment in the classroom through aspects of feedback, correction, active participation of students and reinforcement of students in line with the preparation of the learning environment (Farrah Dina & Amira, 2022). Teachers need to ensure control of the assessment process, such as identifying time constraints and overcoming situations that disrupt learning. To achieve the designed educational goals and objectives, assessment activities must provide important information to teachers to carry out further actions (Zi & Brown, 2021). This assessment also aims to obtain information for curriculum improvement through formative assessments that are carried out continuously in schools.

In the context of geography subjects, assessments and approaches to teaching and learning in the study hall must be adapted to the objectives of learning geography at the secondary school level to monitor students' learning progress, providing feedback for both teachers and students needs and enhance instruction and learning (Lebona & Ayanwale, 2024). Teaching and learning activities based on assessment need to be improved to form a meaningful collaboration of activities to improve teachers' skills. Assessments that are prepared systematically based on learning models and implementation protocols in the form of clear teaching and learning modules can also provide evidence of the learning outcomes that have been achieved (Kumaran et al., 2023).

To avoid differences in school assessment systems with standard references, this study was created to help teachers solve problems by developing a formative assessment development module using the illuminative assessment model founded by (Parlett & Hamilton, 1972). It is hoped that the use of this new teaching style can help educators understand the students' learning process, reduce the impression of examination-oriented learning, emphasize creative and critical thinking among students, improve communication skills and critical thinking, generate ideas and independent problem-solving skills among students (Hanifah et al., 2024; Pinchok & Brandt, 2014). Although formative assessment has been widely recognized for promoting higher-order and student-centered learning in geography education, there are still few studies developing structured, topic specific formative assessment modules aligned with SBA. This study introduces the

Illuminative Model Formative Assessment Module (PERFORM-i) for the *Population and Settlements* topic in Form 1 Geography. PERFORM-I integrated task based assessment for learning that aims to ensure PERFORM-I's relevance and impact in enhancing formative assessment practices and strengthening SBA implementation in geography teaching and learning sessions.

## Literature review

The last decade in Malaysia has experienced a transformation in the implementation of the education curriculum with the aim of improving learning in terms of content, pedagogy, and assessment in line with the Malaysian Education Development Plan (PPPM) 2013–2025, the aim being to produce students who are knowledgeable, think critically, have leadership, are bilingual, practice ethics and spirituality and have a national identity (Kementerian Pendidikan Malaysia, 2016). There are two types of assessment systems in Malaysia, namely school-based assessment (SBA) and public examination. SBA involves formative assessment at all school levels in line with the national education philosophy which emphasizes physical, emotional, spiritual and intellectual aspects.

In terms of purpose and time, assessment can be divided into four types: formative assessment, summative assessment, interim, and summative (William, 2014; Schildkamp et al., 2020) emphasizes that no single assessment can simultaneously achieve all assessment objectives. Paiva et al. (2020) classify assessment according to several main focuses such as cognitive development, psychometrics and processes. Assessment can also be classified into two forms of examination, namely criterion reference assessment and normal reference assessment (Huck, 2014).

An experimental study by McMillan and Hearn (2014) on project-based learning (PBL) shows that group conversation allows students at school to communicate to solve persistent problems. The study is systematic and depends on students' knowledge of the practice of recycling. This qualitative study involves observations, interviews and document analysis to examine the effectiveness of the PBL technique following the implementation phases of the Reiser and Dick model in geography subjects.

Based on the results of several studies (Sidek & Jamaluddin, 2005; Pinchok & Brandt, 2014), Sidek and Jamaluddin (2005) developed formative assessment components. They stated that there are six dimensions of formative assessment that can be used as a guide for implementation to make it more effective. The six dimensions are as follows:

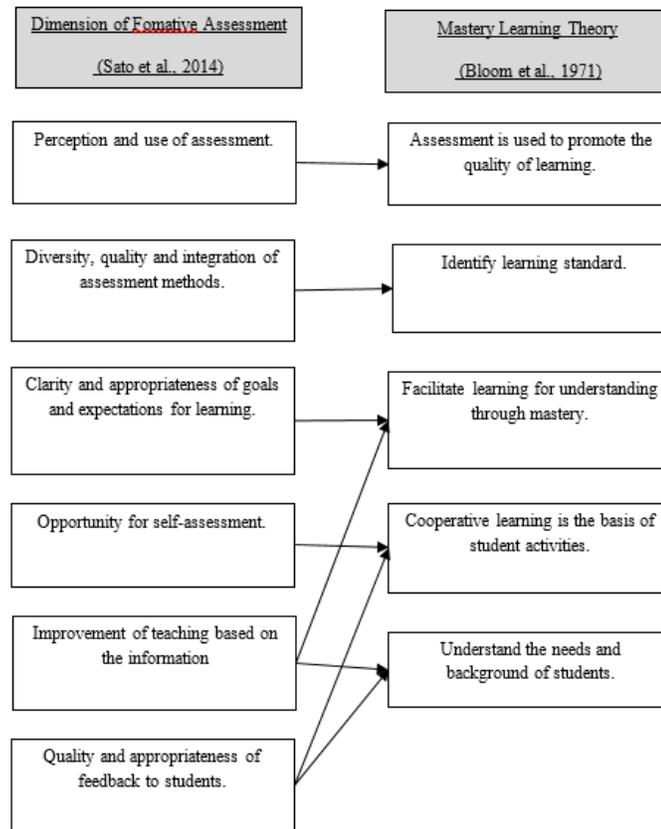
- i. Perception and use of assessments.
- ii. Diversity, quality and coherence of assessment methods.
- iii. Clarity and suitability of objectives and targets for learning.
- iv. Opportunities for self-assessment.
- v. Teaching improvements based on information obtained.
- vi. Quality and suitability of feedback to students.

The relationship between the Theory of Mastery Learning (TML) introduced by Bloom et al (1971) and the six assessment dimensions presented shows that formative assessment is the basis for TML. Formative assessment was an important tool in the college classroom more than 40 years

ago (Jamaluddin & Sidek, 2005; Florez & Sammons et al., 2015). Through their research, they created the TML to identify teachers' influence on students' learning. According to Winget and Persky (2022), TML is a basic approach in the T&L philosophy that recognizes that students learn in different ways and have different levels of learning according to their needs. This theory includes T&L strategies that involve understanding students' pre-knowledge and developing learning strategies that suit their needs. In addition, teachers need to provide sequential teaching, monitor students' learning, provide feedback and promote deep understanding of the lesson content.

Based on the views of Stiggins (2015), TML is the basis for the dimensions of formative assessment. The first dimension relates to the perception and ongoing use of assessment following TML. It is important to understand how students and teachers use the assessment process to measure students' achievement and guide effective teaching. The second dimension shows the need to provide a variety of assessment methods to assess various learning styles and students' achievement effectively. The third dimension emphasizes the suitability of learning objectives and learning outcomes with TML, where teachers need to assess students first to understand their pre-knowledge.

The fourth dimension includes opportunities for self-assessment, which allows students to assess their own progress and improve their performance. This promotes collaborative work among students under the guidance of the teacher to strengthen their understanding of the lesson content. The fifth and sixth dimensions focus on improving teaching based on feedback obtained from assessments, and the importance of teachers in analyzing assessment data to develop more effective teaching. Through TML, teachers provide meaningful feedback to students and help them understand their achievements and the steps they need to take to improve. Figure 1 shows the alignment of the formative assessment dimensions with the TML as proposed by Bloom et al. (1971) and Schildkamp et al. (2020).



**Figure 1.** Theoretical framework of formative assessment dimensions in relation to the theory of mastery learning by Salleh et al. (2009)

In this study paper, formative and summative assessments, also known as internal and external assessments, are used based on categories determined by the Ministry of Education Malaysia and used in SBA. Formative assessment helps schools increase students' potential in a variety of ways, including periodic exams, checklists, homework, observations and clinical interviews (Shildkamp et al., 2020). Summative assessment is carried out at the national level (Sidek & Jamaluddin, 2005).

## Method and study area

This study focuses on the development of a formative assessment module using a mixed-method approach that combines qualitative and quantitative techniques. In the validity and effectiveness phase, expert evaluation was conducted through a structured questionnaire. According to Salleh et al. (2009), even when a module has been approved, continuous monitoring of students' abilities during its implementation is essential to determine its validity and practical applicability. The effectiveness of the module is demonstrated when students successfully achieve the stated learning objectives. For this purpose, three senior lecturers from Universiti Pendidikan Sultan Idris (UPSI) were purposively selected based on their expertise and experience in the field of assessment to evaluate the PERFORM-i module. Their expert feedback was analyzed and used to refine and

enhance the module's content and structure. The main objective of the study is to develop a formative assessment module that promotes active and creative teaching and learning (T&L) in the topic of Form 1 Geography of Malaysia. Three sets of research instruments were employed and adapted to align with the study's objectives.

A quasi-experimental design was implemented in the effectiveness phase, involving a single group of Form 1 students, with pre- and post-test data analyzed using the Wilcoxon signed-rank test. This design was selected because it is suitable for evaluating the effectiveness of teaching methods, modules, and instructional programs in practical classroom contexts. The choice of a single group was justified by the study's focus on measuring individual improvement after exposure to the PERFORM-i module, rather than comparing across multiple groups. While the purposive selection of three experts for validation is acceptable, the small number limits generalization; therefore, the study emphasizes content validity through expert triangulation and internal consistency testing of instrument items. Further explanation regarding instrument development, item reliability and sample size determination strengthens the methodological rigor and credibility of the research design.

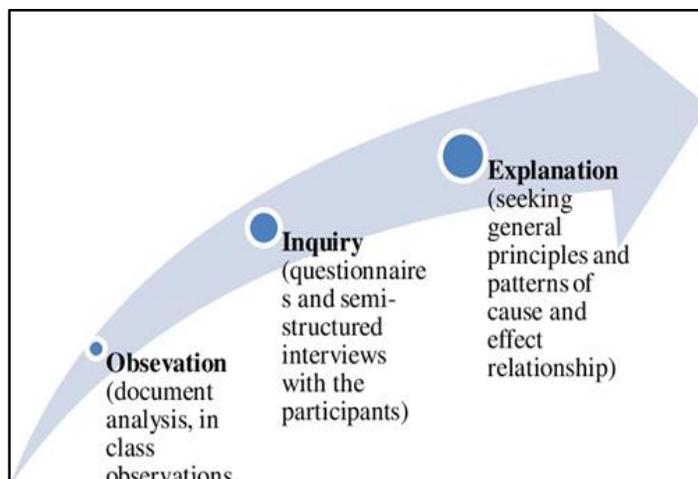
### **Illuminative model activity achievement stage**

There are three phases of application of this model in the assessment system (Figure 2).

Phase 1: Observe. The assessors, including Regional Education Officers, will visit schools that are developing certain systems. At this stage, they will see and collect views and problems from teachers and students regarding the implementation of the system. This phase shows the effectiveness of the study, because some students learn more effectively through visual experiences.

Phase 2: Investigation (further inquiry). The assessor will investigate various issues and views gathered from phase 1. This involves an in-depth investigation of the issues that arise.

Phase 3: Explanation (seek to explain). The appraiser will start looking for the causes and effects for each problem that arises. They will try to identify the causes of these issues and collect relevant data to adapt to the situation. This data is then interpreted to assist in the decision-making process. Formative assessment module. The illuminative style was developed to guide teachers in carrying out interesting PBD assessments to make learning more meaningful. This module contains three activities for the Form 1 geography topic 'population and placement'. It is hoped that these activities can provide guidance to teachers in preparing activities that are in accordance with the chosen topic and the national curriculum contained in the KSSM geography textbook.



**Figure 2.** Stages of achieving the illuminative model

## Results and discussion

There are four sections assessed in the survey form instrument by experts. Section A focuses on module content, section B on proposed teaching activities, section C on the suitability of the module, and Section D on the module’s technical requirements. The validity of this effectiveness is discussed further in Table 1 using the calculation methods stated previously.

**Table 1.** Total expert scores for validity of module content

Item	Part	Part A	Part B	Part C	Part D	Total score	Percentage value (%)
	A1-A10	B1-B8	C1-C8	D1-D4			
<b>Expert</b>							
Expert 1		50	40	40	20	150	100
Expert 2		47	40	38	20	145	96.67
Expert 3		42	35	33	16	126	84
<b>Total</b>		<b>50</b>	<b>40</b>	<b>40</b>	<b>20</b>	<b>150</b>	<b>100</b>

Table 1 presents the total scores given by three experts to the assessment module developed using the coefficient calculation recommended by Sidek and Jamaluddin (2005). Expert 1 gives the highest score for each item using a five-point Likert scale (5 = strongly agree), giving the maximum score of 150 for the validity of this module or 100 percent. This indicates that Expert 1 fully supports the reviewer's efforts and provides a positive view, commenting: "This module is very suitable and easy to use by Form 1 students as a T&L activity".

Expert 2 also gave a score of 5 (strongly agree) on the Likert scale for the items in Part A, except for item A8. For this item, Expert 2 awarded 2 (disagree). This resulted in Expert 2's total score for Part A being three points less than Expert 1's, namely 47. Expert 2 gave maximum scores for Part B and Part D, namely 40 and 20 respectively. However, in Part C, Expert 2's score was 38 because he only awarded 4 (agree) for items C5 and C7. Expert 2 also provided a positive view,

commenting: "Most aspects of the module are very good and the items used to assess the effectiveness of the module are also adequate."

Expert 3 was selected based on his experience and expertise in the topic of urban and human geography. The total score given by Expert 3 for Part A was 42, giving a score of 5 (strongly agree) for two items and 4 (agree) for the other items. For Part B, the score was 35, the lowest score of 33 being for Part C. The score for Part D was 16, giving a score of 4 (agree) for all items. Expert 3 provided views and comments on items D3 and D4, suggesting the inclusion of images that correspond to the selected themes and topics. With this calculation, the total score for the validity of the module content given by the expert was 84 with a content validity coefficient of 0.80, which can be considered good and suitable for continuation. Figure 4 shows the example of the module PERFORM-i.



**Figure 3.** Changes of the module validity

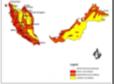


RANCANGAN PEMBELAJARAN HARIAN	
Tajuk/Tema	: 3.0 Geografi Murnia: Penduduk dan Pengepatan
Sub-Tajuk	: 3.1 Penduduk di Malaysia
Standard	: 3.1 Menjelaskan dengan contoh taburan penduduk di Malaysia
Pembelajaran	: 3.2.Membincangkan faktor-faktor yang mempengaruhi taburan penduduk di Malaysia.
Objektif pembelajaran	Selamatkan tamat sesi pengajaran dan pembelajaran (PdP), pelajar dapat: 1) Menghuraikan ketiga-tiga contoh taburan penduduk di Malaysia. 2) Menjelaskan sekurang-kurangnya tiga (3) daripada empat (4) faktor yang mempengaruhi taburan penduduk di Malaysia
Pengetahuan sedia ada:	Pelajar telah mengetahui jumlah penduduk di Malaysia melalui bacaan.
Bahan Bantu Mengajar	Slaid Pembelajaran (Canva), muzik, pembesar suara, peta topografi, gambar, dan <b>Bojaja</b> .
Elemen Merentas Kurikulum (EMK)	: Teknologi maklumat dan komunikasi, nilai murni (kepanahan, peka), <b>Kreativiti</b> dan <b>Kejujuran</b>

Langkah /Masa	Isi Pengajaran	Aktiviti Pengajaran dan Pembelajaran		Pendekatan/Strategi/ Kaedah BSM/ EMK
		Aktiviti Guru	Aktiviti Pelajar	
Set Induksi (10 Minit)	Taburan Penduduk di Malaysia Taburan penduduk merujuk kepada taburan penduduk di sesuatu kawasan atau negara. Secara umumnya, taburan penduduk di Malaysia tidak sama.	1. Memastikan bilangan pelajar mencukupi kerana kelas di adakan di Bilik Multimedia 2. Mempamerkan dua (2) lembar gambar yang berkaitan 3. Menyual dan meminta <b>bojaja</b> pelajar tentang gambar yang dipamerkan 4. Menjelaskan topik pembelajaran iaitu: Penduduk di Malaysia 5. Mempamerkan objektif	1. Tiro dengan arai dan benda dalam keadaan selera dan terawal 2. Mendengar arahan guru dan terlibat dalam aktiviti 3. Memberi <b>bojaja</b> ketika guru bertanya 4. Mendengar penerangan guru tentang tajuk pembelajaran.	Strategi: Berpusatkan Oru Kaedah: Perbincangan BBM: Gambar dan Slaid Pembelajaran (Canva) EMK: Nilai Murni (Peka), Sains dan Teknologi (sikap scientific)

	pembelajaran yang ingin dicapai pada hari tersebut iaitu: i. Mengenalpasti dua (2) daripada tiga (3) taburan penduduk di Malaysia beserta contoh. ii. Menghuraikan tiga (3) daripada empat (4) faktor yang mempengaruhi taburan penduduk di Malaysia			
Langkah 1 (5 minit)	Taburan penduduk di Malaysia. ✓ Kawasan berpenduduk padat Lebih daripada 200 orang bagi setiap kilometer persegi - Menjadi tumpuan penduduk kerana kawasannya rata dan subur. - Sesuai untuk pelbagai kegiatan seperti pertanian, perindustrian, perniagaan dan perkomputeran. - Bandar utama	1. Meminta murid bangun dengan bersemangat 2. Memotong muzik dan lagu Penduduk di Malaysia 3. Mempamerkan n lirik lagu itu dan menyanyi bersama-sama murid	1. Mendengar arahan guru dan penerangan guru. 2. Terlibat dalam pelaksanaan aktiviti guru 3. Melantik ketua <b>Bojaja</b> . Menghuraikan perbincangan dengan siri kumpulan bersemangat 4. Melakukan pembelajaran secara lisan	Pendekatan: Dehidrif Strategi: Berpusatkan Pelajar Kaedah: Nyanyian Teknik: Perbincangan BBM: Lagu, Muzik, Slaid Pembelajaran (Canva), kertas warna  EMK: Bahasa, Nilai Murni (Peka), Teknologi Maklumat dan Komunikasi (Lisan), Kreatif & Inovasi

	penduduk padat adalah Wilayah Persekutuan Kuala Lumpur, Shah Alam, Klang (Canva), Aler setar dan Johor Bahru ✓ Kawasan berpenduduk sederhana - 50 hingga 200 orang bagi setiap kilometer persegi - Banyak terdapat di kawasan berhutan tebal dan kawasan tanah tinggi. - Antara kawasan berpenduduk jarang ialah Tasik Beraung (Perak), Kuala Tahan (Pahang) dan Kapit (Sarawak)			Pentaksiran: Flat Card Note  OPI: Mengenalpasti dua (2) daripada tiga (3) taburan penduduk di Malaysia beserta contoh.)
Langkah 2 (15 minit)	Faktor Taburan Penduduk di Malaysia	1. Memaparkan slaid pembelajaran faktor taburan	1. Memberi tumpuan dan perhatian	Pendekatan: Dehidrif Strategi: Berpusatkan Pelajar

	1. Faktor Fizikal <input type="checkbox"/> Tanah pamah <input type="checkbox"/> Tanah tinggi <input type="checkbox"/> Pinggir laut dan saliran 2. Faktor Ekonomi <input type="checkbox"/> Pertanian <input type="checkbox"/> Perkomputeran <input type="checkbox"/> Perikanan <input type="checkbox"/> Perindustrian 3. Faktor sosial <input type="checkbox"/> Infrastruktur <input type="checkbox"/> Pendidikan 4. Dasar Kerajaan <b>Bojaja</b> . <input type="checkbox"/> Pembinaan bandar baru <input type="checkbox"/> Pervarian tamanegara dan hutan simpan <input type="checkbox"/> Tanah rancangan	penduduk di Malaysia 2. Memberi penerangan dan semasa pelajar mendengar arahan guru dan memberi perhatian 3. Memberi penerangan tentang aktiviti <b>bojaja</b> yang akan dijalankan dan memberikan link aktiviti 4. Meminta pelajar untuk membina aktiviti pembelajaran yang diberikan	penempatan bagi topik pembelajaran faktor taburan penduduk di Malaysia. 2. Mendengar arahan dan memahami syarat aktiviti yang telah ditetapkan oleh guru. 3. Melaksanakan dan melaksanakan diri dalam pelaksanaan aktiviti pembelajaran	Kaedah: Berpusatkan Bahan (Slaid) Teknik: Perbincangan BBM: Slaid Pembelajaran (Canva), Peta Topografi  Pentaksiran: Soal jawab
Pemup (10 minit)	Penutup Kognitif Menyatakan taburan penduduk di Malaysia dengan contoh dan faktor taburan penduduk di Malaysia. Penutup sosial Mengetahui bentuk taburan penduduk di Malaysia yang dipengaruhi oleh faktor-faktor	1. Membuka pelbagai sesi soal jawab antara murid 2. Mengedarkan latihan pengubahan berbeza peta minda. 3. Mempamerkan pelajar supaya mengulangi kaji pelajaran 4. Merumuskan pembelajaran dengan topik yang diajar	1. Mengangkat tangan jika ada soalan berkaitan tajuk 2. Pelajar berdiri secara beramai-ramai membuat rumusan berkaitan topik yang telah dipelajari. 3. Mendengar dengan teliti rumusan	Strategi: Berpusatkan guru dan pelajar EMK: Rumusan Pentaksiran: Latihan

	terletak di kawasan yang didiami oleh penduduk sangat memandangkan peranan yang penting bagi kesejahteraan negara.		keseluruhan daripada guru
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**PENTAKSIRAN (FLAT CARD NOTES)**

- Objektif Aktiviti **Bojaja** 1:
- Murid akan dapat:
- ✓ Mereka bentuk dan membina nota poket
  - ✓ Mencatat isi dan maklumat yang telah diperolehi semasa guru mengajar
  - ✓ Berkerja secara berkesan dalam kumpulan
  - ✓ Berkommunikasi secara berkesan dalam kumpulan
  - ✓ Menerangkan hasil pembelajaran secara ringkas dalam nota



Rajah 4: Gambar awal aktiviti Flat Card Notes



**Table 3.** Wilcoxon sign test results for pre-test and post-test

<b>Pra test – Post test</b>	<b>Frequency (N)</b>	<b>Mean achieve</b>	<b>Total achieve</b>
Negative achievement	1	1.00	1.00
Positive achievements	24	13.50	324.00
Permanent achievement	0		
<b>Total</b>	<b>25</b>		

\*\*Pra test > Post test

The Wilcoxon test analysis, a non-parametric statistical method, was used to assess differences between two related samples, specifically, the pre-test and post-test scores of student respondents. This test served as an alternative to the paired sample *t*-test since the data did not follow a normal distribution. The results indicated that a negative difference in achievement reflected a decline in some students' prior knowledge on the topic of *Population and Settlement in Malaysia*, even though the interval between the pre- and post-tests was only one week. Both the minimum and overall values recorded a score of 1.00 for the pre- and post-test. However, 24 students showed an increase in post-test scores after using the PERFORM-i module, with the minimum achievement rising by 13.50 and the overall achievement value reaching 324.00.

These improvements demonstrate that alternative assessment enables students to enhance their thinking skills and assists teachers in continuously assessing student progress (Singh et al., 2022; Davis & Gbormittah, 2023; Halimah et al., 2024; Pals et al., 2024). Traditional assessment methods, which often fail to measure students' skills comprehensively, have been complemented by alternative assessment approaches that emphasize authentic, real-life tasks. The PERFORM-i module integrates the six dimensions of formative assessment namely; perception and use of assessment, diversity, quality and integration of assessment methods, clarity and appropriateness of learning goals, opportunities for self-assessment, improvement of teaching based on assessment information and quality and appropriateness of feedback to students.

Active student participation in alternative assessments provides teachers with insights into effective teaching strategies and students' learning styles (Franchis & Maslawati, 2023; Zaabalawi & Zaabalawi, 2024; Quinlan et al., 2024). Referring to the first dimension, the formative assessment strengthens the perception and use of assessment by positioning assessment as part of the learning process, enabling both teachers and students to value feedback as a developmental tool. This aligns with Bloom's Mastery Learning Theory, which emphasizes using assessment to enhance the quality of learning.

The second-dimension diversity, quality and integration of assessment methods is reflected through task-based and authentic activities that require students to demonstrate cognitive, affective, and psychomotor learning. This corresponds with Bloom's emphasis on identifying learning standards. Similarly, the third-dimension clarity and appropriateness of learning goals and expectations ensures that learning objectives are aligned with mastery learning stages, facilitating understanding through meaningful learning. The formative assessment also encourages students to apply constructivist principles by integrating higher-order thinking skills to produce tangible outcomes (Sapawi et al., 2023; Wang et al., 2024; Yousef & Ayyoub, 2024; Aslan & Aybek, 2024; Ndiung & Menggo, 2024).

Unlike traditional assessments that emphasize memorization and comparison, formative assessment encourages learners to reflect on their progress and self-regulate learning based on rubric-based criteria corresponding to the fourth dimension, opportunities for self-assessment.

Through this process, students are more engaged in applying knowledge to real-world contexts. This reflective practice helps students take ownership of their learning and develop their metacognitive skills that enhance long term understanding (Alt et al., 2022; Zarestsky et al., 2022; Arvartz et al., 2025). The fifth- and sixth dimensions improvement of teaching based on assessment information and quality and appropriateness of feedback, teachers able to adjust instruction according to students' performance and provide more meaningful feedback. In line with Bloom's Mastery Learning Theory, these dimensions promote cooperative learning as the foundation for student engagement and help teachers better understand students' needs and backgrounds, thereby improving instructional quality and effectiveness.

Therefore, the implementation of alternative assessment in today's education helped both parties namely teachers and students. The motivation to get involved in the teaching and learning process also increases as they show their good cooperation by achieving the learning objectives. Thus, the implementation of alternative assessment is appropriately implemented in the teaching and learning process and it also is in line to shape 21<sup>st</sup> century students' criteria.

## **Conclusion**

In the era of educational transformation, formative assessment plays a crucial role in the integrated implementation of teaching and learning (T&L) to assess students' progress effectively. However, integrating formative assessment practices in classrooms remains a challenge, as teachers often fall short of meeting institutional standards. This challenge arises partly from the limited availability of well-designed assessment modules that serve as references, particularly in geography education. The illuminative-style formative assessment module (PERFORM-i) offers a suitable alternative to guide teachers in implementing creative and authentic assessment practices. Designed for geography students, PERFORM-i provides a comprehensive framework that embeds formative assessment continuously within the learning process. Unlike traditional summative assessments that focus on end-of-term results, this module emphasizes task-based assessments that guide and inform learning in real time. By aligning with current educational reforms that emphasize holistic, student-centered evaluation, PERFORM-i promotes a more dynamic and creative approach to assessing student progress. Ultimately, this approach cultivates students who are balanced, harmonious, creative, critical, and innovative, qualities that are aligned with the competencies required of 21st-century learners. Moreover, the use of this module helps teachers reduce exam dependency, foster higher-order thinking, enhance communication, and strengthen problem-solving skills among students. However, the scope of this study is limited to the development and evaluation of the PERFORM-i module within the context of geography education. As such, the findings may not be fully generalizable to all the geography themes and other subjects without further adaptation and validation.

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