

Year Five Students' Perceptions of HOTS-Based 21st Century Learning (PAK-21) in Islamic Education: Interest, Understanding, Perceived learning skills, and Active Involvement

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ABSTRACT

This study examined Year Five students' acceptance of Higher Order Thinking Skills (HOTS)-based 21st Century Learning (Pembelajaran Abad Ke-21; PAK-21) in Islamic Education. Specifically, the study explored four dimensions of student acceptance: interest, understanding, Perceived learning skills, and active involvement. A quantitative cross-sectional descriptive survey design was employed. Data were collected from 102 Year Five students who had experienced HOTS-based PAK-21 learning activities in Islamic Education through purposive sampling. The instrument consisted of a five-point Likert-scale questionnaire, and the data were analysed using descriptive statistics, including mean, standard deviation, and skewness. The findings indicated that students reported high levels of acceptance across all four dimensions. The mean scores ranged from 4.34 to 4.48, with interest recording the highest mean ($M = 4.48$), followed by understanding ($M = 4.47$), Perceived learning skills ($M = 4.44$), and active involvement ($M = 4.34$). The response distributions were generally negatively skewed, indicating that most respondents selected favorable response categories. This pattern also suggests the possibility of a ceiling effect, where responses were concentrated at the upper end of the scale. Overall, the findings suggest that the participating students reported favorable perceptions of HOTS-based PAK-21 learning in Islamic Education. However, as the study relied on self-reported questionnaire data collected from a purposive sample within a single educational context, the findings should be interpreted as evidence of students' reported perceptions rather than as proof of learning effectiveness, HOTS mastery, or the effectiveness of the PAK-21 approach. Future studies are recommended to incorporate achievement measures, classroom observations, or mixed-methods designs to obtain a more comprehensive understanding of students' learning experiences.

Keywords: 21st Century Learning (PAK-21), Higher Order Thinking Skills (HOTS), Student Acceptance, Islamic Education, Descriptive, Survey.

INTRODUCTION

Background of the Study Education in Malaysia has undergone substantial transformation following the implementation of the Malaysia Education Blueprint 2013–2025, which emphasises the development of learners equipped with communication, collaboration, critical thinking, creativity, and ethical values required for the twenty-first century. Within this reform agenda, 21st Century Learning (Pembelajaran Abad Ke-21; PAK-21) promotes student-centred learning through collaborative activities, inquiry-based learning, problem solving, and meaningful classroom interaction. In Islamic Education, this pedagogical shift encourages students to become active participants in constructing knowledge while teachers assume the role of facilitators who support learning through guidance and structured interaction. These instructional practices are consistent with the principles of Social Constructivism, which emphasise that knowledge develops through social interaction and collaborative learning (Vygotsky, 1978).

Student Acceptance of HOTS-Based PAK-21

The successful implementation of educational innovation depends not only on teachers' readiness but also on students' willingness to participate meaningfully in the learning process. Students' perceptions of learning influence their engagement, motivation, and participation during classroom activities. Therefore, examining students' acceptance of HOTS-based 21st Century Learning (PAK-21) provides valuable evidence for improving instructional practices and supporting sustainable educational reform (Fredricks et al., 2004; OECD, 2019).

In the present study, student acceptance is conceptualised as students' positive affective, cognitive, and behavioural responses towards HOTS-based PAK-21 learning. Consistent with previous educational research, acceptance is operationalised through four complementary dimensions: interest, understanding, Perceived learning skills, and active involvement. These dimensions collectively reflect how students perceive and respond to their learning experiences rather than serving as direct measures of academic achievement or actual HOTS mastery (Fredricks et al., 2004).

Islamic Education has traditionally incorporated pedagogical approaches such as talaqqi, teacher guidance, memorisation, explanation, reflection, and moral cultivation (Tamuri & Yusoff, 2015). Contemporary curriculum reforms do not replace these approaches but encourage teachers to integrate them with student-centred pedagogies that promote inquiry, collaboration, communication, and higher-order thinking, consistent with the aspirations of the Malaysian Education Blueprint (MOE, 2013). Understanding students' reported perceptions of these learning experiences may therefore provide useful evidence for improving classroom practice in Islamic Education.

PROBLEM STATEMENT

The implementation of Higher Order Thinking Skills (HOTS) through 21st Century Learning (PAK-21) has become one of the major priorities of the Malaysian education system under the Malaysia Education Blueprint 2013–2025, which emphasises student-centred learning, critical thinking, collaboration, communication, and creativity (Ministry of Education Malaysia [MOE], 2013). Within Islamic Education, teachers are encouraged to integrate HOTS into classroom instruction to promote meaningful learning experiences and strengthen students' higher-order thinking abilities (MOE, 2017).

Despite these policy initiatives, previous studies have primarily focused on teachers' readiness, instructional practices, pedagogical challenges, and institutional support for implementing PAK-21 and HOTS (Fakhrudin et al., 2023; Mohd Zeki et al., 2023). Comparatively fewer studies have examined students' own perceptions of learning experiences following exposure to HOTS-based PAK-21, particularly among primary school pupils in Islamic Education. Consequently, limited empirical evidence is available regarding how Year Five students perceive their interest, understanding, Perceived learning skills, and active involvement during HOTS-oriented learning activities (Skerritt, 2023).

Furthermore, positive classroom participation cannot be assumed solely from the implementation of student-centred pedagogies. Students may experience different levels of motivation, understanding, confidence, and participation depending on their learning experiences, classroom environment, and instructional support (Fredricks et al., 2004). Therefore, obtaining evidence on students' reported perceptions is important for informing teachers and curriculum developers about how HOTS-based PAK-21 is experienced by learners within Islamic Education classrooms.

Accordingly, this study was conducted to examine Year Five students' reported levels of interest, understanding, Perceived learning skills, and active involvement following their exposure to HOTS-based PAK-21 learning activities (Zulkefly & Yusof, 2025). The findings are expected to contribute local empirical evidence regarding students' reported perceptions while recognising that these perceptions should not be interpreted as direct measures of learning effectiveness or HOTS-based activities.

RESEARCH OBJECTIVES

The study is guided by the following five objectives:

- To determine the level of students' interest in HOTS-based PAK-21 learning.
- To determine the level of students' understanding of HOTS-based PAK-21 learning.
- To determine the level of students' Perceived learning skills related to HOTS-based PAK-21 learning.
- To determine the level of students' active involvement in HOTS-based PAK-21 learning activities.
- To determine the overall level of students' acceptance of HOTS-based PAK-21 learning in Islamic Education.

LITERATURE REVIEW

21st Century Learning (PAK-21) Framework

Twenty-first Century Learning (Pembelajaran Abad Ke-21; PAK-21) is a student-centred pedagogical approach that promotes communication, collaboration, critical thinking, and creativity through active learning experiences. In Malaysia, PAK-21 supports the aspirations of the Malaysia Education Blueprint 2013–2025, which emphasises learner-centred instruction and the development of higher-order thinking skills to prepare students for future challenges (Ministry of Education Malaysia, 2013). However, successful implementation depends not only on teachers' instructional practices but also on students' willingness to participate actively in classroom learning (Tamuri & Yussof, 2015).

PAK-21 is defined as a pedagogical approach that prioritizes student agency. It facilitates an environment where learners explore, discuss, and solve problems collaboratively. In the Malaysian context, it moves away from the "chalk and talk" method, integrating digital tools and group-based inquiry to ensure that students are active participants in their own developmental journey. The implementation of this framework is deeply rooted in the "4Cs" philosophy—communication, collaboration, creativity, and critical thinking—which serves as the operational backbone for modern classroom activities. Within this paradigm, the teacher's role is transformed from the primary source of authority into a facilitator who scaffolds the learning process, allowing students to navigate complex tasks through structured peer interaction (Mohd Zeki et al., 2023). This structural shift is further bolstered by the strategic integration of Information and Communication Technology (ICT), which provides students with the digital platforms necessary to engage in self-directed exploration and information synthesis, effectively bridging the gap between theoretical knowledge and real-world application (MOE, 2021).

Beyond structural changes, the success of PAK-21 relies heavily on the psychological and cognitive readiness of learners to embrace high levels of autonomy. Recent empirical evidence suggests that when students are granted agency within the PAK-21 framework, they report significantly higher levels of intrinsic motivation and a deeper conceptual understanding of the curriculum compared to traditional methods.

However, sustaining this momentum requires a commitment to creating "low-stakes" collaborative spaces where students can experiment with Higher Order Thinking Skills (HOTS) without the fear of immediate failure (Hannan & Anuar, 2025). Such an environment ensures that the learning process remains inclusive and conducive to diverse learner profiles, ultimately fostering a culture of lifelong learning and resilience.

Higher Order Thinking Skills (HOTS/KBAT)

Higher Order Thinking Skills (HOTS) refer to learners' ability to analyse, evaluate, and create by applying knowledge to unfamiliar situations and solving complex problems (Anderson & Krathwohl, 2001). Within the Malaysian curriculum, HOTS is integrated into classroom teaching to encourage meaningful learning beyond

factual recall (Ministry of Education Malaysia, 2017). Nevertheless, students' positive perceptions of HOTS-based learning should not be interpreted as direct evidence of HOTS mastery, as perceptions and actual cognitive performance represent different constructs.

Moreover, the successful cultivation of KBAT is contingent upon a pedagogical shift that prioritizes formative assessment and constructive feedback. In this environment, students are encouraged to justify their reasoning and critique diverse perspectives, transforming the classroom into a laboratory for creative inquiry. This active engagement not only strengthens cognitive skills but also builds social-emotional competencies, as students learn to collaborate effectively while navigating complex decision-making processes (Fakhrudin et al., 2023). Consequently, KBAT becomes more than a cognitive tool; it evolves into a fundamental mindset that empowers students to contribute meaningfully to society and lead with innovation.

Student Acceptance

Student acceptance reflects learners' positive responses towards instructional approaches and learning experiences. In educational settings, positive acceptance is commonly reflected through students' interest in learning, perceived understanding, confidence in performing learning tasks, and willingness to participate actively during classroom activities. These affective, cognitive, and behavioural responses influence the quality of students' engagement throughout the learning process (Abdullah & Nordin, 2024).

Accordingly, this study operationalises student acceptance through four dimensions: interest, understanding, Perceived learning skills, and active involvement. These dimensions represent students' reported perceptions of their learning experiences following exposure to HOTS-based PAK-21 activities in Islamic Education rather than direct measures of learning achievement or HOTS competency.

Theoretical Framework I: Social Constructivism

This study is underpinned by Vygotsky's Social Constructivism Theory, which posits that learning occurs through social interaction, collaboration, and guided participation within meaningful learning environments (Vygotsky, 1978). Knowledge is actively constructed as learners engage with teachers and peers through discussion, questioning, and shared problem-solving. These principles are consistent with the implementation of HOTS-based 21st Century Learning (PAK-21), which encourages collaborative learning, inquiry, and active student participation in classroom activities.

Within the context of this study, Social Constructivism provides a theoretical basis for understanding how students experience HOTS-based PAK-21 learning in Islamic Education. Students' reported levels of interest, understanding, Perceived learning skills, and active involvement reflect their perceptions of participating in collaborative learning environments. However, these dimensions should be interpreted as students' reported learning experiences rather than direct evidence of learning effectiveness or mastery of Higher Order Thinking Skills (Sun et al., 2025).

Theoretical Framework II: Bloom's Taxonomy

The cognitive dimension of this study is informed by the Revised Bloom's Taxonomy, developed by Anderson and Krathwohl (2001). The revised taxonomy classifies cognitive learning into six hierarchical levels: remembering, understanding, applying, analysing, evaluating, and creating. Within Malaysia's curriculum, Higher Order Thinking Skills (HOTS) primarily emphasise the higher cognitive processes of analysing, evaluating, and creating, which are expected to be integrated into classroom learning activities.

In the present study, Bloom's Revised Taxonomy serves as a conceptual framework for understanding the learning context in which HOTS-based PAK-21 activities are implemented. Nevertheless, the questionnaire employed in

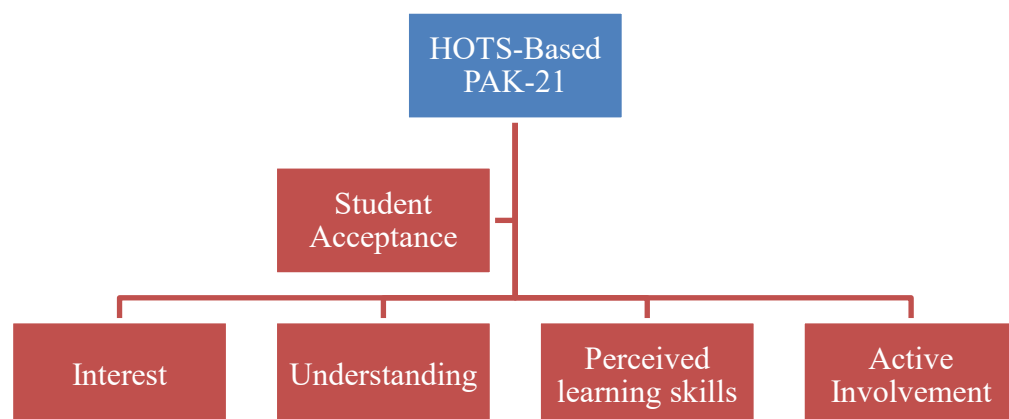
this study measures students' reported perceptions of their understanding, Perceived learning skills, and active involvement rather than their actual achievement of higher-order cognitive processes. Accordingly, the findings should be interpreted as reflecting students' perceived learning experiences and not as direct evidence that students have attained the analysing, evaluating, or creating levels of the taxonomy.

Conceptual Framework of Student Acceptance

Student acceptance in this study is conceptualised as a multidimensional construct representing students' reported responses towards the implementation of HOTS-based 21st Century Learning (PAK-21) in Islamic Education. Drawing upon the affective, cognitive, and behavioural domains of learning, student acceptance is operationalised through four complementary dimensions: interest, understanding, Perceived learning skills, and active involvement.

Interest represents the affective response that reflects students' willingness and enthusiasm to participate in learning activities. Understanding refers to students' perceived comprehension of HOTS-oriented learning activities. Perceived learning skills describe students' perceptions of their ability to perform learning tasks that require higher-order thinking, whereas active involvement reflects students' reported participation in classroom discussions, collaborative learning, and learning activities. Collectively, these four dimensions provide an overall description of students' reported acceptance of HOTS-based PAK-21 learning experiences rather than direct measures of academic achievement or actual HOTS competency.

Figure 1. Conceptual Framework of Student Acceptance



METHODOLOGY

Research Design

This study employed a quantitative cross-sectional descriptive survey design to examine Year Five students' reported acceptance of Higher Order Thinking Skills (HOTS)-based 21st Century Learning (PAK-21) in Islamic

Education. A descriptive survey design was considered appropriate because the study aimed to describe students' reported levels of interest, understanding, Perceived learning skills, active involvement, and overall acceptance without examining causal relationships or intervention effects. Data were collected at a single point in time using a structured questionnaire, and descriptive statistics were used to summarise students' responses.

Participants and Sampling

The participants comprised 102 Year Five students from three government primary schools in Kinabatangan District, Sabah, Malaysia. Participants were selected using purposive sampling, as only students who had completed the HOTS-based PAK-21 learning module in Islamic Education were considered appropriate for the objectives of the study. The instructional module was implemented over four consecutive weeks, involving four learning sessions, with each session lasting one hour. This ensured that all participants had comparable exposure to the instructional approach before completing the questionnaire. As purposive sampling was employed, the findings represent the reported perceptions of the participating students and should not be generalised to the wider population of Malaysian primary school students.

Research Instrument

Data were collected using a researcher-developed questionnaire designed to measure students' reported acceptance of HOTS-based PAK-21 learning in Islamic Education. The instrument consisted of 20 items organised into four constructs: Interest (5 items), Understanding (5 items), Perceived Learning Skills (5 items), and Active Involvement (5 items). Responses were measured using a five-point Likert scale, ranging from 1 (Strongly Disagree) to 5 (Strongly Agree).

Higher scores indicated more favourable student perceptions of HOTS-based PAK-21 learning. The questionnaire was developed based on relevant literature on HOTS, PAK-21, student engagement, and Islamic Education and was refined to ensure its suitability for Year Five pupils.

Table 1: Construct Form

Section	Construct
A	Student Interest
B	Student Understanding
C	Perceived Learning Skills
D	Active Involvement

Data Collection Procedure

Ethical approval for the study was obtained from the Faculty of Islamic Studies, Universiti Malaysia Sabah (Approval No. UMS/FIS6.12/500-2/4) prior to data collection. Permission to conduct the study was subsequently obtained from the relevant educational authorities and the participating schools.

Following the completion of the four-week HOTS-based PAK-21 learning module, the questionnaire was administered to the participating Year Five students. Students were informed that their participation was voluntary, their responses would remain anonymous, and all information collected would be treated confidentially and used solely for research purposes.

Data Analysis Procedures

The collected data were analysed using IBM SPSS Statistics Version 31. Descriptive statistical analyses, including mean, standard deviation, minimum score, maximum score, and skewness, were computed to describe students' reported acceptance of HOTS-based PAK-21 learning. Mean scores were interpreted according to predetermined interpretation ranges, where higher mean values indicated more favourable reported perceptions.

As the study adopted a descriptive survey design, the findings were interpreted to describe students' reported perceptions and were not intended to establish causal relationships or determine the effectiveness of the HOTS-based PAK-21 approach.

Table 2: Mean Score Range

Mean Score Range	Interpretation Level
1.00 – 2.33	Low
2.34 – 3.66	Moderate
3.67 – 5.00	High

Table 3: Construct

Construct	Number of Items	Scale
Interest	5	Likert (1–5)
Understanding	5	Likert (1–5)
Perceived Learning Skills	5	Likert (1–5)
Active Involvement	5	Likert (1–5)
Total	20	Likert (1–5)

FINDINGS AND ANALYSIS

Overall Acceptance Level

The findings indicate that Year Five students demonstrate a high level of acceptance toward the PAK-21 approach in Islamic Education.

Table 4: Analysis of Student Acceptance (N=102)

Descriptive Statistics							
	N	Minimum	Maximum	Mean	Std. Deviation	Skewness	
	Statistic	Statistic	Statistic	Statistic	Statistic	Statistic	Std. Error
Interest	102	3.80	5.00	4.4824	.27192	-.304	.239
Understanding	102	3.80	5.00	4.4667	.31001	.010	.239
Perceived Learning Skills	102	3.40	5.00	4.4412	.39133	-.190	.239
Active Involvement	102	3.40	5.00	4.3392	.39481	-.369	.239
Valid N (listwise)	102						

Table 4 presents the descriptive statistics for the four constructs measuring students' reported acceptance of HOTS-based 21st Century Learning (PAK-21) in Islamic Education. The analysis involved 102 Year Five students. Overall, the mean scores ranged from 4.34 to 4.48, indicating that respondents reported favourable perceptions across all four constructs.

Among the four constructs, Interest recorded the highest mean score ($M = 4.48$, $SD = 0.27$), followed by Understanding ($M = 4.47$, $SD = 0.31$), Perceived learning skills ($M = 4.44$, $SD = 0.39$), and Active Involvement ($M = 4.34$, $SD = 0.39$). These findings suggest that participating students generally reported positive learning experiences following their exposure to HOTS-based PAK-21 learning activities in Islamic Education.

The skewness values ranged from -0.369 to 0.010 , indicating that responses were concentrated towards the upper end of the response scale. This pattern suggests that most respondents selected favourable response categories and may indicate the presence of a ceiling effect, where responses showed limited variability across participants. Therefore, the findings should be interpreted as reflecting students' reported perceptions within the study sample.

Analysis of Student Interest

The analysis reveals that student interest in the Higher Order Thinking Skills (HOTS)-integrated 21st Century Learning (PAK-21) approach is at a high level. Students reported a significant inclination toward

participating in instructional activities characterized by collaborative discussion, problem-solving, and group work [1].

Furthermore, the aggregate score analysis indicates that the 'Interest' construct achieved a mean value of 4.48 (SD = 0.27), underscoring a high degree of student receptivity toward the HOTS-based PAK-21 methodology. A detailed breakdown of the individual items within the interest construct is presented in Table 5.

Table 5: Analysis of Interest Construct

Descriptive Statistics							
	N	Minimum	Maximum	Mean	Std. Deviation	Skewness	
		Statistic	Statistic	Statistic	Statistic	Statistic	Std. Error
A1	102	2.00	5.00	4.3922	.61591	-.745	.239
A2	102	3.00	5.00	4.4902	.55838	-.483	.239
A3	102	3.00	5.00	4.5490	.53819	-.587	.239
A4	102	3.00	5.00	4.5490	.53819	-.587	.239
A5	102	3.00	5.00	4.4314	.62156	-.618	.239
Valid N (listwise)	102						

Table 5 presents the descriptive statistics for the five items measuring students' reported interest in HOTS-based PAK-21 learning. The mean scores ranged from 4.39 to 4.55, indicating that respondents generally reported high levels of interest across all items. Standard deviations ranged from 0.54 to 0.62, suggesting relatively consistent responses among the participants.

Items A3 and A4 recorded the highest mean scores ($M = 4.55$), whereas A1 recorded the lowest ($M = 4.39$). Nevertheless, all items were within the high interpretation range adopted in this study, indicating generally favourable perceptions towards HOTS-based PAK-21 learning activities. The skewness values ranged from -0.483 to -0.745 , suggesting that responses were concentrated towards the higher end of the response scale. These findings indicate that most respondents expressed positive perceptions regarding their interest in the learning activities.

Analysis of Student Understanding

The understanding construct reveals that students are beyond memorization to apply knowledge contextually.

Table 6: Analysis of Understanding

Descriptive Statistics							
	N	Minimum	Maximum	Mean	Std. Deviation	Skewness	
	Statistic	Statistic	Statistic	Statistic	Statistic	Statistic	Std. Error
B1	102	3.00	5.00	4.5392	.62413	-1.023	.239
B2	102	2.00	5.00	4.3922	.61591	-.745	.239
B3	102	3.00	5.00	4.5490	.53819	-.587	.239
B4	102	3.00	5.00	4.3627	.60997	-.390	.239
B5	102	3.00	5.00	4.4902	.55838	-.483	.239
Valid N (listwise)	102						

Table 6 summarises the descriptive statistics for students' reported understanding of HOTS-based PAK-21 learning. Mean scores ranged from 4.36 to 4.55, indicating that respondents generally perceived themselves as having a good level of understanding of the learning activities. Standard deviations ranged between 0.54 and 0.62, reflecting relatively consistent responses across items.

Item B3 recorded the highest mean score ($M = 4.55$), while B4 recorded the lowest ($M = 4.36$). Although responses were concentrated at the higher end of the scale, these findings represent students' reported perceptions of their understanding rather than direct measures of conceptual mastery or academic achievement.

Regarding data distribution, the skewness values for all items ranged from -1.023 to -0.390, indicating a negatively skewed distribution. This reflects that the majority of respondents provided high scores for all items within the understanding construct. While item B1 recorded a skewness value of -1.023—slightly exceeding the conventional ± 1.00 range—it does not indicate a significant departure from a normal distribution.

Consequently, the data is still considered suitable for parametric statistical analysis. These findings prove that students have a high level of understanding of HOTS-based learning, thereby demonstrating that the HOTS-integrated 21st Century Learning (PAK-21) approach is effective in helping students master Islamic Education content.

Perceived Learning Skills

This section demonstrates that students perceive themselves as capable of executing higher-order tasks.

Table 7: Analysis of Perceived Learning Skills

Descriptive Statistics							
	N	Minimum	Maximum	Mean	Std. Deviation	Skewness	
	Statistic	Statistic	Statistic	Statistic	Statistic	Statistic	Std. Error
C1	102	3.00	5.00	4.4020	.63339	-.576	.239
C2	102	3.00	5.00	4.4804	.57558	-.558	.239
C3	102	3.00	5.00	4.3824	.58095	-.299	.239
C4	102	3.00	5.00	4.4902	.64093	-.883	.239
C5	102	2.00	5.00	4.4510	.63911	-.974	.239
Valid N (listwise)	102						

Item C4 recorded the highest mean ($M = 4.49$), whereas C3 recorded the lowest ($M = 4.38$). These findings describe students' perceived learning skills of their learning-related skills and should not be interpreted as direct evidence of actual HOTS competency or cognitive performance.

Based on the individual item analysis, item C4 recorded the highest mean value of 4.49 ($SD = 0.64$), followed by item C2 with a mean of 4.48 ($SD = 0.58$). Subsequently, item C5 obtained a mean value of 4.45 ($SD = 0.64$), while items C1 and C3 recorded mean values of 4.40 ($SD = 0.63$) and 4.38 ($SD = 0.58$), respectively. Although item C3 recorded the lowest mean value within this construct, the score remains firmly within the high category. This demonstrates that students exhibit strong mastery of the skills measured through the HOTS-based learning approach.

Regarding data distribution, the skewness values for all items ranged from -0.974 to -0.299, indicating a negatively skewed distribution. These values fall within the conventionally accepted range for normality assumptions (± 1.00), signifying that the data is approximately normally distributed and suitable for parametric statistical analysis. Collectively, these findings prove that students possess a high level of skill in HOTS-based learning.

This reflects that the HOTS-integrated 21st Century Learning (PAK-21) approach has successfully assisted students in developing critical and creative thinking skills while enhancing their capacity to apply knowledge within Islamic Education learning activities.

Analysis of Active Involvement

Despite being the lowest overall construct mean, the individual items show remarkable readiness for peer interaction.

Table 8: Analysis of Involvement Construct

Descriptive Statistics							
	N	Minimum	Maximum	Mean	Std. Deviation	Skewness	
	Statistic	Statistic	Statistic	Statistic	Statistic	Statistic	Std. Error
D1	102	3.00	5.00	4.4314	.60542	-.587	.239
D2	102	3.00	5.00	4.2745	.66238	-.618	.239
D3	102	2.00	5.00	4.3529	.75317	-1.023	.239
D4	102	2.00	5.00	4.2451	.70971	-.745	.239
D5	102	3.00	5.00	4.3922	.64726	-.587	.239
Valid N (listwise)	102						

Table 8 presents the descriptive statistics for the five items measuring students' reported active involvement in HOTS-based PAK-21 learning. The mean scores ranged from 4.25 to 4.43, indicating that respondents generally reported favourable levels of participation in classroom learning activities. Standard deviations ranged from 0.61 to 0.75, suggesting relatively consistent responses across the five items.

Among the five items, D1 recorded the highest mean score ($M = 4.43$, $SD = 0.61$), followed by D5 ($M = 4.39$, $SD = 0.65$), D3 ($M = 4.35$, $SD = 0.75$), D2 ($M = 4.27$, $SD = 0.66$), and D4 ($M = 4.25$, $SD = 0.71$). Although D4 recorded the lowest mean score, all five items remained within the high interpretation category, indicating generally positive reported perceptions of active involvement during HOTS-based PAK-21 learning activities.

These findings suggest that the participating students generally reported favourable participation in collaborative learning and classroom activities following their exposure to HOTS-based PAK-21 learning. However, as the data were obtained through a self-report questionnaire, the findings should be interpreted as students' reported perceptions of active involvement rather than direct measures of their actual classroom participation or behavioural engagement.

DISCUSSION

Students' Acceptance of HOTS-Based PAK-21

The present study found that Year Five students reported a high level of acceptance towards Higher Order Thinking Skills (HOTS)-based 21st Century Learning (PAK-21) in Islamic Education across the four dimensions of interest, understanding, perceived learning skills, and active involvement. Overall, these findings indicate that the participating students perceived HOTS-based PAK-21 learning positively following the four-week instructional module.

The high level of interest suggests that students responded positively to learning activities involving discussion, collaboration, questioning, and active participation. This finding is consistent with the principles of Social

Constructivism Theory, which emphasises that meaningful learning occurs through social interaction and collaborative engagement (Vygotsky, 1978). It also supports the work of Fredricks et al. (2004), who argued that behavioural, emotional, and cognitive engagement are essential for meaningful learning. More recent evidence indicates that contemporary Islamic Education pedagogies that emphasise learner-centred instruction contribute to more positive student perceptions of teaching and learning (Mohd Nawi & Mohd Shafie, 2025).

Similarly, students reported a high level of understanding of HOTS-based PAK-21 learning activities. This finding suggests that collaborative learning, classroom discussion, and inquiry-based learning supported students' perceived understanding of Islamic Education content. These findings are consistent with previous research highlighting that active learning environments facilitate deeper conceptual understanding by encouraging learners to construct knowledge through interaction and reflection (OECD, 2019; Mohd Nawi & Mohd Shafie, 2025). However, it is important to emphasise that the present study measured students' reported perceptions of understanding rather than their actual conceptual mastery. Therefore, the findings should not be interpreted as evidence of improved academic achievement or mastery of HOTS.

Students also reported favourable perceptions regarding their perceived learning skills throughout HOTS-based PAK-21 learning activities. These findings suggest that students perceived themselves as being more confident when participating in learning tasks requiring discussion, reasoning, and collaborative problem-solving (Zulkefli & Jamil, 2024). This interpretation is consistent with recent findings showing that student engagement and self-regulated learning contribute positively to students' confidence and learning experiences in Islamic educational settings (Novarizka et al., 2025). Nevertheless, because the present study relied on self-reported questionnaire responses, these findings should be interpreted as students' perceived learning skills rather than direct evidence of actual HOTS competency.

Although active involvement recorded the lowest mean among the four constructs, the overall level remained high. This finding indicates that the participating students generally perceived themselves as actively involved in classroom discussions and collaborative learning activities. Differences in participation are expected because students vary in confidence, communication skills, and willingness to contribute during classroom interaction (Fredricks et al., 2004). Recent studies in Islamic Education have similarly shown that cooperative learning strategies, such as Think–Pair–Share, promote greater student engagement and classroom participation by encouraging interaction and collaborative learning (Pajri et al., 2025).

Overall, the findings suggest that HOTS-based PAK-21 created learning experiences that were positively perceived by the participating students. These findings are aligned with current educational reforms that encourage learner-centred pedagogies and meaningful classroom participation in Islamic Education. However, because this study employed a cross-sectional descriptive survey using self-reported questionnaire data collected through purposive sampling, the findings should be interpreted as reflecting students' reported perceptions rather than providing empirical evidence of the effectiveness of HOTS-based PAK-21 or students' actual mastery of Higher Order Thinking Skills.

Implications for Islamic Education

The findings of this study provide several implications for the implementation of Higher Order Thinking Skills (HOTS)-based 21st Century Learning (PAK-21) in primary Islamic Education. The high levels of reported interest, understanding, perceived learning skills, and active involvement suggest that student-centred learning approaches were positively perceived by the participating Year Five students. These findings support current educational reforms that encourage Islamic Education teachers to integrate collaborative learning, questioning techniques, and higher-order thinking activities into classroom instruction while maintaining alignment with the aspirations of the Malaysia Education Blueprint 2013–2025 (Ministry of Education Malaysia, 2013). Recent studies have likewise highlighted that learner-centred pedagogies and meaningful classroom interaction contribute to more engaging learning experiences in Islamic Education classrooms (Zulkefli & Jamil, 2024).

For teachers, the findings indicate that instructional strategies emphasising discussion, collaboration, and active student participation may create learning environments that are positively perceived by learners. Such pedagogical practices are consistent with the principles of Social Constructivism, which emphasise interaction and shared knowledge construction (Vygotsky, 1978). Recent evidence also suggests that interactive approaches, including cooperative learning and technology-supported instruction, enhance students' engagement and participation in Islamic Education when implemented through well-planned learning activities (Pajri et al., 2025; Malaysian Journal of Learning and Instruction, 2025).

Nevertheless, the implications of the present study should be interpreted with caution because the findings are based on students' reported perceptions collected through a cross-sectional descriptive survey. Therefore, the results should not be interpreted as direct evidence of learning effectiveness or actual HOTS mastery. Future research is recommended to integrate students' perception data with achievement tests, classroom observations, or mixed-methods approaches to provide a more comprehensive evaluation of HOTS-based PAK-21 implementation in Islamic Education. Such approaches have been recommended in recent educational research to strengthen evidence regarding student learning outcomes and classroom (AlSaqqaf & Hu, 2025).

CONCLUSION

This study examined Year Five students' reported acceptance of Higher Order Thinking Skills (HOTS)-based 21st Century Learning (PAK-21) in Islamic Education. The findings indicated that students reported favourable perceptions across the four dimensions of interest, understanding, perceived learning skills, and active involvement, suggesting that the participating students generally viewed HOTS-based PAK-21 learning positively following the four-week instructional module.

The findings contribute to the growing body of literature on student-centred learning in Islamic Education by providing empirical evidence regarding students' reported learning experiences within the Malaysian primary school context. The study also highlights the importance of examining students' perspectives when evaluating educational innovations, as positive learning experiences may support meaningful classroom participation and engagement.

Nevertheless, the findings should be interpreted within the limitations of the study. As the research employed a cross-sectional descriptive survey using self-reported questionnaire data collected through purposive sampling, the results represent students' reported perceptions and should not be interpreted as direct evidence of the effectiveness of HOTS-based PAK-21 or students' actual mastery of Higher Order Thinking Skills. Future studies are therefore recommended to incorporate achievement assessments, classroom observations, and mixed-methods approaches to provide a more comprehensive understanding of HOTS-based PAK-21 implementation in Islamic Education.

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