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Analyzing Students' Learning Styles in Listening Comprehension

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ABSTRACT

This study investigates the impact of diverse learning styles on listening comprehension abilities among English education students in a university in Bandung, Indonesia. Utilizing a descriptive qualitative research design, the research involved 10 participants who underwent learning style tests, with in-depth interviews conducted on three selected participants. The findings revealed a spectrum of learning styles. Interviews provided valuable insights into the strategies employed by each learning style, such as visual learners favoring videos and seeking additional explanations online. Auditory learners preferred expert explanations and quiet study environments, while kinesthetic learners utilized movement during group discussions. Classroom observations demonstrated the effectiveness of tailored strategies, incorporating visual aids, auditory elements, and hands-on activities to create an inclusive learning space. The result underscored the significance of multimodal approaches for maximizing student engagement and comprehension. It is recommended for educators to recognize diverse learning styles, employ flexible instructional methods, and foster inclusive learning environments. Hence, the research reinforces the notion that educators should recognize the presence of various learning styles, actively adopt adaptable teaching approaches, and foster inclusive learning environments, thus optimizing student involvement and understanding.

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INTRODUCTION

The ability to comprehend spoken language is a crucial aspect of communication and language learning (Bortfeld, 2019), because, to communicate through the oral language, everyone receives the messages by listening and then responds by speaking (Pardede, 2019). Wei (2018) reiterated that comprehending the cognitive processes involved in auditory information processing can be valuable in improving language learning. The objective of this research is to investigate and examine the various learning styles and methods utilized by students throughout their involvement in listening comprehension. By identifying and comprehending these various learning styles, learners can customize their instructional approaches to more effectively adapt to their particular needs (Truong, 2016). Therefore, this approach promotes improving language learning outcomes on many levels. The study investigates the cognitive processes associated with auditory information processing, aiming to enhance language learning results. The main objective is to examine and comprehend students' various learning styles and approaches to listening comprehension tasks. The aim is to help learners customize their educational methods by recognizing and understanding different learning styles, hence improving their capacity to adapt to individual needs. Consequently, this is expected to enhance language learning results. The primary objective of this study is to provide new insight into the understanding of learning styles and their influence on listening comprehension. The final objective is to enhance language learning by creating a more efficient and specific learning experience.

Furthermore, within the present-day education setting, the diversity of the student group is determined by a wide range of learning choices, which are determined by a variety of elements, including cultural background, previous educational experiences, and personal preferences (Chevalier et al., 2020; Rao et al., 2015). The research acknowledges the diverse nature of the current educational environment, influenced by cultural heritage, previous educational encounters, and individual preferences. Recognizing and adjusting to these various learning styles are regarded as a method to promote a more inclusive and tailored approach to learning. The study seeks to investigate the influence of different learning methods on the ability to comprehend spoken language, providing learners with diverse learning possibilities. The primary goal is to create tailored teaching methods that consider each learner's distinct requirements, therefore facilitating a more effective and targeted learning process. The project aims to provide novel insights into the comprehension of learning styles and their impact on listening skills, with the ultimate objective of improving language acquisition in a varied educational environment. The comprehension and adaptation of these various learning styles promote a more inclusive and personalized approach to learning and promote greater student engagement and motivation (Ferreira et al., 2020). In examining the impact of learning styles on listening comprehension, the aim is to present a wide range of opportunities for learners to utilize these findings, thereby developing customized instructional strategies that consider the distinct needs of individual learners (Hodson, 1998).

However, some gaps are identified. Many studies focus on traditional learning styles (e.g., visual, auditory, and kinesthetic) but often neglect how these styles engage in with specific strategies students use to enhance their listening comprehension. And also, previous

studies typically rely on self-reported data or focus groups, which have limitations such as self-report biases, a lack of triangulation, and limited population samples (An, 2022). The study seeks to answer the following research question: (1) What strategies do students with different learning styles employ to enhance their listening comprehension abilities? (2) How effective do they find these strategies in facilitating their language learning experiences?

LITERATURE REVIEW

Learning Styles

Learning styles are how people learn things or get information. According to Mozaffari et al. (2020), the concept of learning styles involves a synthesis of cognitive, emotional, and physiological characteristics that serve as indicators of individual perceptions and reactions to the educational environment. From that statement, it is evident that understanding learners' learning styles is very effective in regulating and adapting the learning environment and facilitating the teaching and learning process.

In line with the statement above, each learner has their own learning style. Hamid et al. also cited various techniques to assess learning styles, with the VARK models, developed by Fleming and Mills (1992), being the most widely used. Based on their research findings, it has been determined that learning styles consist of four different models: visual (V), auditory (A), reading/writing (R), and kinesthetic (K). Amaniyan et al. (2020) define visual learners as learning through watching videos, pictures, and drawings; in other words, they like to learn by graphically representing information. Auditory learners learn through listening to lectures, and learners are used to hearing verbal information and instructions. Reading-writing learners learn through reading texts and writing their notes. In other words, learners learn with a preference for information printed as words. Through touch and manipulation of objects or learners, kinesthetic learners rely on using practical experiences and processes in the learning process.

Ismail and Haniff (2020) underline that a learner is considered unimodal if the learner prefers one (1) of the categories. While bimodal refers to learners who prefer two (2) categories, trimodal is for individuals who prefer three (3) categories. However, there are situations where a learner prefers all four (4) categories. This individual is categorized as quadrimodal. At least a learner has one (1) category from all four (4) VARK learning models. Thus, the VARK model classifies students according to their sensory modality and how they prefer to have information presented to them.

English Listening Comprehension

Listening skills, or listening comprehension, are listening to oral symbols with full attention, understanding, appreciation, and interpretation. To obtain information, capture the content and meaning of communication to be conveyed by the speaker through speech or spoken language (Tarigan in Rahma, 1994, p. 28). Listening comprehension, as one of the language activities, is a fairly basic skill in communication activities. One receive the messages or information through listening (Pardede, 2019). Rost, Hamouda, Gilakjani & Sabouri (2016: 1671) define listening comprehension as an interactive process in which listeners construct meaning. Listeners comprehend the oral input through sound discrimination, previous

knowledge, grammatical structures, stress and intonation, and other linguistic or non-linguistic clues.

Listening comprehension is the most overlooked skill in second language learning because it gets the least attention of the four language skills. This neglect is found in teachers not spending more time listening to students and looking for ways to improve students' listening skills. Unfortunately, listening for comprehension is a passive activity. Still, on the contrary, listening is an active process because people cannot develop oral skills if the listener does not understand the speaker.

According to Kurita & Ahmadi (2016: 7), learners may feel that listening comprehension skills are challenging to learn, requiring teachers to change listening practice to be more effective. Developing listening comprehension skills helps learners succeed in language learning and increase comprehensible input. As learners' confidence in listening comprehension can be improved, they are motivated to have access to spoken English, such as conversations with native speakers.

A skill will be well-mastered if it is taught and practiced. Similarly, listening comprehension needs to be taught and practiced properly and continuously, considering its essential role in life, both at school and in the community. The importance of mastering listening skills is visible in the school environment. Students spend most of their time listening to lessons delivered by the teacher. Students' success in understanding and mastering lessons begins with good listening skills.

Many studies on the VARK model find the need for learning style analysis in a particular scope. Learning style analysis is needed in a teaching-learning activity for students to learn properly. Based on previous research, this study aims to determine whether students' learning styles impact their performance during classroom listening activities. In this context, we only use the VAK (Visual, Auditory, and Kinesthetic) model questionnaire to explore students' learning styles and focus on classroom listening activities.

RESEARCH METHODS

Participants

This study involved ten students of the English Education department of a university in Bandung, Indonesia for the learning style test, and three of them participated in the interview. The participants had experienced in classes that require listening comprehension. After being informed of the study's objectives and their role, the participants signed a consent form to participate in the study. The participants were assured of the confidentiality and anonymity of their responses to keep their privacy throughout the study.

Research Design

The research utilized a descriptive qualitative case study research design. This method is suitable for this research because it allows for an in-depth exploration of university-level students' learning styles and their impact on their listening comprehension ability. This approach is helpful as it allows the researcher to examine a particular phenomenon in its real-life context, which can provide rich and detailed data.

Data Collection

Multi method was employed to collect the data, including survey, interview, and observation. The survey was conducted using a questionnaire. Adopted from a previous research focusing on learning styles (Daoruang et al., 2020), the questionnaires was designed to gauge students' learning style alignment in the visual, auditory, and kinesthetic theory. Consisting of 15 multiple-choice questions with no right or wrong answer, the questionnaire was the baseline for the study, as it helped us find participants with three distinct learning styles. One participant was taken from each learning style. The interviews were accomplished with students indicating various learning styles to examine their engagement and comprehension during class, specifically emphasizing their listening skills.

The interviews were semi-structured, indicating that an initial group of key queries developed while also allowing for the flexibility to bring up follow-up inquiries based on participants' responses. This method facilitated an in-depth investigation of each student's viewpoint of their learning behaviors, especially concerning their engagement with listening activities. The inquiries are consistent with the frameworks outlined in this study, ensuring consistency in the assessment of learning styles and involvement. These interviews aim to understand how students from various learning style categories (visual, auditory, and kinaesthetic) engage with listening activities and how this affects their overall comprehension and participation in class.

The classroom observations were conducted to provide a more comprehensive understanding of students' behaviors during classroom activities. This observational technique allowed the researchers to interpret and analyze student behavior beyond their self-reported experiences. By observing students in a natural learning environment, the researcher can identify patterns of engagement, such as how students interact with peers, respond to the lecture, or manage their attention during listening class. This method ensures that the study does not rely solely on personal input from students but also considers objective, real-time behaviors that can indicate levels of engagement and comprehension. Combining interviews with classroom observations allows for a more detailed understanding of how learning styles evidence in listening comprehension and classroom engagement, offering both subjective and objective perspectives on the students' experiences.

Data Analysis Technique

Thematic analysis was employed to analyze the data in this study. Thematic analysis is well-suited to explore and understand students' learning styles and their impact on listening comprehension abilities. This method systematically identifies and interprets patterns, themes, and narratives within the qualitative data obtained from interviews and open-ended questionnaire responses. This qualitative approach is particularly suited to uncovering the rich and detailed narratives and patterns within the data. It enables a holistic understanding of the phenomenon in its real-life context, aligning with the research's exploratory nature. The interview was analyzed by searching the main points emphasized by the participants. Those main points will be compiled and analyzed using the existing thematic analysis principles.

All data collected during the research were treated with confidentiality as our main priority and anonymized to protect the participants' identities. Informed consent was obtained from all participants involved in the interviews, and they were made aware of their

right to withdraw from the study at any time without consequences. The research adheres to the ethical guidelines of Universitas Pendidikan Indonesia.

Due to the limited time the study takes, there might be some limitations that can be considered for future research that will tackle a similar theme to this research. The limitations that discussed are, sampling bias presents a potential limitation in this study, as the findings might be influenced by the characteristics of the selected participants from Universitas Pendidikan Indonesia. The results may not generalize well to all students if the sample is not sufficiently diverse or representative of the broader student population. The participants' unique backgrounds, academic disciplines, or other factors specific to the institution could skew the findings, making it challenging to apply the conclusions to students in different contexts or institutions. This lack of diversity in the sample could limit the study's external validity. Another concern is self-report bias, which arises from the use of questionnaires and interviews that rely on participants' self-reported data. This introduces the possibility of response bias, where participants may provide answers they believe are socially desirable or aligned with the researchers' expectations, rather than accurately reflecting their true learning styles or listening comprehension experiences. Such biases could distort the data, leading to inaccurate conclusions about students' actual preferences and behaviors.

Subjectivity in thematic analysis is also a potential issue. The process of thematic analysis requires interpretation, and this can vary between researchers. Different individuals might identify different themes or interpret the same data in distinct ways, leading to inconsistent conclusions. To mitigate this risk, it is essential to ensure inter-coder reliability, where multiple researchers agree on the themes identified, and to adhere to established guidelines for conducting thematic analysis. This helps minimize subjectivity and ensures that the analysis is grounded in a rigorous and systematic approach.

The study's focus on a single institution, the English Education Department in one of the universities in Bandung, Indonesia, further limits the generalizability of the findings. Students from other institutions may have different cultural, socioeconomic, or demographic characteristics, which could influence their learning styles and listening comprehension experiences in distinct ways. As a result, the conclusions drawn from this study may not apply to students in other educational settings, especially those with different institutional contexts or populations. Lastly, the study captures students' learning styles and listening comprehension at a specific point in time, which introduces the possibility of temporal bias. Learning preferences and comprehension abilities can evolve over time, influenced by changes in teaching methods, learning environments, or personal development. Therefore, the findings may not reflect long-term trends or shifts in students' preferences and abilities, limiting the study's ability to account for ongoing developments or changes in learning behavior.

RESULTS AND DISCUSSION

Data was collected from a questionnaire and interview given to students of the English Education Study Program at a university in Bandung, Indonesia. The students were asked to answer 15 questions in a questionnaire and 7 questions for an interview related to the learning style they used in listening comprehension. After collecting the data, the

researcher analyzed the data to be able to see among the existing learning styles that many students use for listening comprehension.

Learning Style

This aspect consists of all questions. The purpose of using this item is to find out the learning style used by English education students. The results of this aspect can be seen in the table below:

Table 1. Learning Style Result

Aspect	Classification	Frequency (F)	Percentage (P)
Learning Style	Visual	5	50%
	Kinesthetic	2	20%
	Auditory	2	20%
	Balanced	1	10%
Total		10	100%

Table 1 shows that, out of 10 participants, 5 students (50%) have a visual learning style. 2 students (20%) have auditory and kinesthetic learning styles. On the other hand, 1 student (10%) stated that he was balanced with all learning styles. This student understood the lesson more efficiently using visual, auditory, and kinesthetic learning styles. Therefore, out of 10 participants, 3 learning styles emerged, and 1 was balanced. In listening comprehension, they use different learning styles; some use all learning styles to make it easier to understand.

Interview Results

The interview is guided by several questions that aim to dig deeper into the student's learning strategy for optimal learning outcomes. The question will be based on the VAK theory mentioned by Kolb (1984). However, the interviews aren't strictly structured so that those questions are explicitly mentioned the same way it is written below.

1. How do students' preferred learning styles influence their engagement and motivation during listening activities in the classroom?
2. What strategies do students with different learning styles employ to enhance their listening comprehension abilities, and how effective do they find these strategies?
3. What challenges do students face in adapting their learning styles to different classroom listening activities, and how do they attempt to overcome these challenges?
4. How do students perceive the role of learning style preferences in their overall learning experience in the classroom?
5. What recommendations do students have for educators regarding creating a classroom environment that caters to diverse learning styles during listening activities?

6. How do students' learning style preferences influence their interactions with peers during collaborative listening activities or discussions in the classroom?
7. What types of classroom materials or teaching methods do students find most effective for their learning style during listening activities, and why?

We picked one respondent from the 10 questionnaire respondents of each learning style (Visual, Audio, Kinesthetic). The questions were modified according to each student's learning style to be relevant. The data was analyzed thematically, highlighting the main keywords used by the participants. Each participant will be codenamed Participant Visual (PV) for the visual learner, Participant Auditory (PA) for the auditory learner, and Participant Kinesthetic (PK) for the kinesthetic learner. The interviews were conducted in Indonesian, which were later translated manually into the data analysis section.

Learning style-driven strategies (Visual, Auditory, Kinesthetic Learning Style)

As shown in Table 2, participant visual (PV) reported that they prefer to see something visual when processing auditory information. They have difficulty when processing some information if it is just audio, but they will find it easy if the information is in the form of video. Research has shown that creating visual explanations can improve learning outcomes, with visual explanations giving an extra boost to learning over verbal explanations. A study by (Varghese et al., 2012) has shown that visual cues aid auditory processing when they provide direct information about signal content, as in lip-reading, and also aid auditory perception by guiding attention to the target. Visual cues also aid auditory perception by guiding attention to the target with a mixture of similar sounds. The research also highlighted the enhanced focus when the participants utilized visual aids to their advantage in identifying auditory information.

Table 2. Participants' Responses on Learning Style-Driven Strategies

Sub-theme 1: Visual Aids	Sub-theme 2: Auditory Explanation	Sub-theme 3: Kinesthetic Expression
"Watching videos makes it easier for me to process some information rather than just listening to audio files." (PV, Interview)	"Instead of just watching and listening to the video, I also need to read the material for a complete understanding" (PA, Interview)	"I didn't find any specific method of learning that adheres to a specific learning style (kinesthetic)." (PK, Interview)
"When I need to find some information, other than audio, I need visual cues." (PV, Questionnaire)		"I use body language and movement during my learning process; however, it is not very prominent during my average study. During group work, I used body language so I could

	convey my ideas during group discussions." (PK, Interview)

Participant Auditory (PA) reported that they would rather listen to something to remember, such as they would rather listen to an expert's explanation, than have to read a reference book on their own. In this case, PA gave an example that she would understand more easily when the lecturer explained the material rather than having to read the book herself. Then, during independent learning activities, PA prefers to look for reference videos related to the topic so that the topic studied is easier to understand. PA admitted that she prefers to listen to audio in the form of videos to understand something, but she also needs to read definitions for a complete understanding. For individuals with an auditory learning style, spoken language, music, and other sounds are powerful tools for learning and understanding. Auditory learning is different from other learning styles, and some learners may face challenges and require specific learning strategies to maximize their abilities. This aligns with a study by Föcker et al. (2022), who stated that auditory strategy can enhance someone's understanding of receiving information.

Participants Kinesthetic (PK) reported that they don't have a particular preference for a learning strategy related to their learning style, inferred from the questionnaire. However, PK also highlighted that they do use movement to convey their ideas during group sessions. These movements are usually not unintentional, which would distract their attention. Research by Leasa et al. (2017) suggests that kinesthetic movement can help the ability to gain auditory information. Kinesthetic learners absorb information best through touch, movement, and motion. Pairing cognitive activity with movement is an effective way to help kinesthetic learners stay engaged and improve their retention, understanding, and creativity.

Environment Control in Listening Assignment

As shown in Table 3, Participant Kinesthetic (PK) Reported that they have an alternative method for enhancing their listening comprehension focus. Participant Auditory (PA) reported that she would focus more on studying in a quiet place without any distractions and noises so that they could focus more on understanding a theory and doing their assignments. A study by Nagaraj (2021) has demonstrated that background noise or sounds can harm cognitive tasks, such as verbal short-term memory and reading comprehension. This is evident in the response during the questionnaire and interview section.

An exciting approach can be found in PK. He stated that visuals can also be a distraction for them. To compensate for this, he used a curtain to block potential visual distractions that could affect how he receives information. Burmark (2002) mentioned that incorrect use of visual cues could lead to a deterrent factor in learning. This is indicated by PK's experience when there is a visual distraction. So, to compensate, PK tried to reduce the visual distraction by closing the curtain to enhance his listening comprehension performance.

Even though PK found that kinesthetic actions such as movement and body language contribute to their understanding of listening comprehension, he found that doing a lot of them during listening activities can hinder his ability to comprehend auditory information for listening comprehension. Kagerer (2015) stated that the idea that kinesthetic movement can hinder the ability to gain auditory information is not supported by strong evidence. While some sources discuss the impact of kinesthetic learning on auditory information processing, the relationship is not necessarily one of hindrance. For example, the tactile/kinesthetic system is said to impact the reception of information, but this does not necessarily imply a hindrance to auditory information processing. However, kinesthetic learners experience a disruption in their focus during listening comprehension due to their physical movements, resulting in a decline in their ability to concentrate and learn effectively. This learning style necessitates less physical activity during the learning process.

Table 3. Participants' Responses on Environment Control in Listening Assignment

Sub-theme 1: Noise Distraction	**Sub-theme 2: Visual Distraction Elimination**	**Sub-theme 3: Kinesthetic Distraction**
"To enhance my listening comprehension performance, I usually try to control my environment to be conducive to the study session. For example, I close the curtain to my room and try to find the right timing for listening comprehension because noises and visual distractions can severely hinder my performance." (PK, Interview)	"I close the curtain to my room and try to find the right timing for doing listening comprehension because noises and visual distractions can severely hinder my performance." (PK, Interview)	"I don't move much during my listening activities because that would make it harder for me to comprehend information" (PK, Interview)
"Although my learning style is auditory, I can't study while listening to music. I prefer to study in a quiet and calm place because I can focus more on understanding things and working on things such as listening comprehension." (PA, Interview)		
"I am more focused listening to anything, be it materials or assignments while using headphones. It is easier for me." (PA, Questionnaire)		

Group Discussion

Participants reported that if there are two options, studying independently or studying in a group, they prefer to study independently. And if there are two options: studying in a small group (2-3 people) or studying in a large group (5-10 people). In this case, they chose to study in a small group because their discussion ran effectively and she could exchange opinions in turn, which also made the group discussion effective and easier to understand.

> "I prefer to study alone, and for group discussions, I prefer to be in a group with a small circle so that it is more effective, easy to understand, and it does not take much time to discuss." (PA, Interview)

> "I like to use body language to convey my ideas during my group discussion in listening comprehension. However, I don't like working in a big group." (PK, Interview)

Both PK and PA (66%) found that working in a group is beneficial for their understanding in listening comprehension. This is also accompanied by their own learning style, as indicated by PK, who likes using body language to convey ideas. Nagaraj (2021) mentioned that background noise, including that from a group discussion, can make it difficult for individuals to hear and comprehend information. This is supported by evidence showing that background noise harms cognitive task performance and listening comprehension.

Multimodal Learning

Participant Visual (PV) reported using multiple strategies besides watching videos for listening comprehension. They have another alternative strategy when processing something in the form of an audio file. They find it hard to process some information in the form of audio as a whole, so they will go to the internet to find further explanations about the audio they just listened to.

> "I will go to the internet to find further explanations about the information I cannot process when just listening to audio." (PV, Interview)

> "When I need to find some information, other than audio, I need visual cues." (PV, Questionnaire)

As indicated by the responses in the interview and in the questionnaire, PV used some other information in addition to the audio. One of the indicators is their reliance on visual cues so they can absorb the information better. Several articles provide evidence that visual learners absorb information through visual cues better. For instance, a study by Burmark (2002) found that around 40 percent of learners respond better to visual information than text alone, as seeing a picture allows users to recreate the experience in their minds.

Classroom Observation

The study was conducted in a classroom setting with a total of 42 students. The classroom was well-organized and conducive to learning. The teacher started the class by introducing the topic and explaining the lesson's objectives. The students were attentive and actively participated in the class discussion. We focused on observing 3 participants we had interviewed before.

The teacher used various teaching strategies, such as showing a video, and then the students listened carefully to cater to the different learning styles of the students. For example, visual aids such as video were used to help visual learners understand the lesson better. Auditory learners could listen to audio recordings and engage in class discussions with videos. Kinesthetic learners were given hands-on activities to help them understand the lesson better.

The three students observed had different learning styles. However, overall the classroom observations showed that the students could follow and participate very well in class. Although there are differences in the learning strategies teachers use that can affect how students learn, students can still be involved and actively participate in class discussions.

Discussion

The interviews and classroom observation findings offer valuable insights into adjusting teaching methods to accommodate different learning styles. This approach originates in several prominent theories, including Howard Gardner's Theory of Multiple Intelligences, which emphasizes that students possess distinct kinds of intelligences (e.g., visual-spatial, auditory, kinesthetic), and VARK learning style theory, which categorizes learners as visual, auditory, reading/writing, or kinesthetic. For visual learners like PV, incorporating visual aids such as videos is necessary to enhance understanding and engagement during listening activities. Additionally, recognizing their preference for visual stimuli, teachers should acknowledge the importance of providing additional online explanations for a comprehensive learning experience.

Auditory learners, exemplified by PA, benefit from opportunities to listen to expert explanations and engage in discussions with reference videos. The classroom observation reflects the effectiveness of incorporating audio recordings and discussions with videos, aligning with the auditory learners' needs (Torrington & Bower, 2021). Moreover, creating a quiet and distraction-free environment is crucial for auditory learners, as observed during the classroom session. Kinesthetic learners, represented by PK, may not strictly adhere to a specific learning strategy, but incorporating movement during group discussions can enhance their participation. The observation highlights the significance of hands-on activities for kinesthetic learners, emphasizing the importance of a conducive environment for improved performance in listening comprehension. Encouraging multimodal approaches benefits learners across all styles (Bouchey et al., 2021). For visual learners like PV, using multiple strategies beyond watching videos enhances their comprehension. Similarly, auditory (PA) and kinesthetic (PK) learners reported using various strategies for listening comprehension, emphasizing the importance of flexibility in instructional approaches.

Recommendations for educators include considering diverse teaching methods and materials to cater to various learning styles and fostering an inclusive classroom environment. The positive outcomes observed in the well-organized and inclusive classroom suggest that combining visual aids, auditory elements, and hands-on activities can create a conducive learning space that maximizes student engagement and comprehension.

The implications underscore the significance of recognizing and accommodating diverse learning styles in the classroom. By tailoring teaching methods, controlling environments, and incorporating multimodal approaches, educators can create an inclusive learning space that maximizes student engagement and comprehension. The positive classroom observation results further support the effectiveness of such strategies in real-world educational settings.

Conclusions

The thorough investigation of learning styles among English education students at one of the universities in Bandung, Indonesia, as evidenced by both questionnaire responses and in-depth interviews, provides unique insights into the dynamics of listening comprehension strategies. The study revealed three primary learning styles—visual, auditory, and kinesthetic—among participants, with certain students demonstrating a well-rounded approach. The interview examination revealed intricate strategies students utilize that align with their individual learning styles. Visual learners denoted as PV, preferred visual aids such as videos, but auditory learners, represented by PA, prioritized listening to academic explanations and participating in discussions using reference videos. PK revealed that kinesthetic learners exhibited a predilection for physical activity during collective discussions. The classroom observation emphasized the importance of personalized teaching techniques, as the teacher effectively integrated visual aids, audio recordings, and interactive exercises to adjust to various learning preferences. The advantages observed in the carefully structured and all-encompassing classroom highlight the effectiveness of these strategies in practical educational settings. The study concludes with practical recommendations for educators, suggesting ways to create an inclusive classroom environment that caters to diverse learning styles.

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