UNIVERSITI TEKNOLOGI MARA

Voice of Academia

Academic Series of Universiti Teknologi MARA Kedah

VoA
2023
Volume 19 Issue 1

COMMITTEE PAGE

VOICE OF ACADEMIA
Academic Series of Universiti Teknologi MARA Kedah Branch

ADVISORY BOARD MEMBER
PROFESSOR DR. ROSHIMA HAJI. SAID
ASSOCIATE PROFESSOR TS. DR. AZHARI MD HASHIM

CHIEF EDITOR
DR. JUNAIDA ISMAIL

MANAGING EDITOR
MOHD NAZIR RABUN

EDITORIAL TEAM
AISHAH MUSA
ETTY HARNIZA HARUN
INTAN SYAHRIZA AZIZAN
KHAIRUL WANIS AHMAD
SYAHRINI SHAWALLUDIN

EDITORIAL BOARD

PROFESSOR DR. DIANA KOPEVA
UNIVERSITY OF NATIONAL AND WORLD ECONOMY, SOFIA, BULGARIA

PROFESSOR DR. KIYMET TUNCA CALIYURT
FACULTY OF ACCOUNTANCY, TRAKYA UNIVERSITY, EDIRNE, TURKEY

PROFESSOR DR. M. NAUMAN FAROOQI
FACULTY OF BUSINESS & SOCIAL SCIENCES, MOUNT ALLISON UNIVERSITY, NEW BRUNSWICK, CANADA

PROFESSOR DR. SIVAMURUGAN PANDIAN
SCHOOL OF SOCIAL SCIENCE, UNIVERSITI SAINS MALAYSIA, PULAU PINANG

DR. IRA PATRIANI
FACULTY OF SOCIAL SCIENCE & POLITIC,
UNIVERSITAS TANJUNG PURA UNTAN, INDONESIA

DR. RIZAL ZAMANI IDRIS
FACULTY OF SOCIAL SCIENCE & HUMANITIES,
UNIVERSITI MALAYSIA SABAH UMS, SABAH

DR. SIMON JACKSON
FACULTY OF HEALTH, ARTS AND DESIGN,
SWINBURNE UNIVERSITY OF TECHNOLOGY MELBOURNE, AUST

PROFESSOR MADYA DR. WAN ADIBAH WAN ISMAIL
FACULTY OF ACCOUNTANCY,
UNIVERSITI TEKNOLOGI MARA CAWANGAN KEDAH, MALAYSIA

DR. AZLYN AHMAD ZAWAWI
FACULTY OF ADMINISTRATIVE SCIENCES & POLICY STUDIES,
UNIVERSITI TEKNOLOGI MARA CAWANGAN KEDAH, MALAYSIA

DR. AZYYATI ANUAR
FACULTY OF BUSINESS MANAGEMENT,
UNIVERSITI TEKNOLOGI MARA CAWANGAN KEDAH, MALAYSIA

DR. MUHAMAD KHAIRUL ANUAR ZULKEPLI
ACADEMY OF LANGUAGE STUDIES,
UNIVERSITI TEKNOLOGI MARA CAWANGAN KEDAH, MALAYSIA

DR. NEESA AMEERA MOHAMMED SALIM
COLLEGE OF CREATIVE ARTS,
UNIVERSITI TEKNOLOGI MARA SHAH ALAM, MALAYSIA

DR ROSIDAH AHMAD
FACULTY COMPUTER SCIENCE AND MATHEMATICS,
UNIVERSITI TEKNOLOGI MARA CAWANGAN KEDAH, MALAYSIA

CONTENT REVIEWER

PROF MADYA DR NUR HISHAM IBRAHIM, UiTM PERAK

PROF MADYA DR SULIKHAH ASMOROWATI, UNAIR, INDONESIA

PROF MADYA DR WAN ADIBAH WAN ISMAIL, UiTM KEDAH

DR ALIAMAT OMAR ALI, UNIVERSITI BRUNEI DARUSSALAM

DR ABDUL RAHMAN ABDUL LATIF, UMT

DR DAING MARUAK, ACIS, UiTM KEDAH

DR NOOR SYAHIDAH MOHAMAD AKHIR, UiTM KEDAH

DR NOR ZAINI ZAINAL ABIDIN, UiTM KEDAH

DR NUR AIDA KIPLI, FSPPP, UiTM SARAWAK

DR NUR ZAFIFA KAMARUNZAM, UiTM SEREMBAN 3

DR NOR ZAINI ZAINAL ABIDIN, UiTM KEDAH

DR REEZLIN ABD RAHMAN, KOLEJ KOMUNITI

DR ROHAYATI HUSSIN, UiTM KEDAH

DR SHATINA SAAD, UiTM SHAH ALAM

DR. SITI MARIAM NORRULASHIKIN, UTM, JOHOR

DR UNGKU KHAIRUNNISA UNGKU MOHD NORDIN, UTM

DR ZURAIDA MOHAMED ISA, UiTM KEDAH

EN AZLAN ABD RAHMAN, UiTM KEDAH

CIK FARIDAH ZULKIPLI, UiTM PERAK

LANGUAGE REVIEWER

DR WAN JUMANI FAUZI, CENTER FOR MODERN LANGUAGE, UMP

DR. NURUL KAMALIA BINTI YUSUF, APB, UiTM SERI ISKANDAR

DR UNGKU KHAIRUNNISAN UNGKU MOHD NORDIN, LANGUAGE ACADEMY UTM, JOHOR

DR WAN IRHAM ISHAK, SENIOR LECTURER, APB, UiTM KEDAH

PN AISHAH MUSA, SENIOR LECTURER, APB, UiTM KEDAH

EN AZLAN ABD RAHMAN, UiTM KEDAH

EN AZRUL SHAHIMY MOHD YUSOF, APB, UiTM KEDAH

PN HO CHUI CHUI, SENIOR LECTURER, APB, UiTM KEDAH

PN BAWANI SELVARAJ, SENIOR LECTURER, APB, UiTM KEDAH

PN JUWAIRIAH OSMAN, FELO AKADEMI PENGAJIAN MELAYU, UM

PN PHAVEENA PRIMSUWAN, SENIOR LECTURER, APB, UiTM KEDAH

PN RAZANAWATI NORDIN, SENIOR LECTURER. APB, UiTM KEDAH

PN SHAFINAH MD SALLEH, SENIOR LECTURER, APB, UiTM KEDAH

CIK IREEN MUNIRA IBRAHIM, UiTM PERAK

NOREHA MOHAMED YUSOF, UiTM NEGERI SEMBILAN

e-ISSN: 2682-7840

Copyright © 2022 by the Universiti Teknologi MARA Press

All rights reserved. No part of this publication may be reproduced, stored in a retrieval system, or transmitted in any form or any means, electronic, mechanical, photocopying, recording or otherwise, without prior permission, in writing, from the publisher.

© Voice of Academia is jointly published by the Universiti Teknologi MARA Caawangan Kedah, Malaysia and Penerbit UiTM (UiTM Press), Universiti Teknologi MARA Malaysia, Shah Alam, Selangor.

The views, opinions and technical recommendations expressed by the contributors and authors are entirely their own and do not necessarily reflect the views of the editors, the Faculty or the University.

TABLE of CONTENTS

LEVERAGING THE SERVICE INNOVATION OF LOCAL MEDICAL UNIVERSITIES IN CHINA: THE PERSPECTIVE OF TEACHERS' PROFESSIONAL DEVELOPMENT 1 -16
Lu Liu[1], Boo Ho Voon[2*], Muhammad Iskandar Hamzah[3] & JiaJie He[4]

EXPLORING THE DRIVERS OF POVERTY LINE INCOME IN MALAYSIA 17 -28
Nurhani Elisya Zainal[1*], Siti Aishah Salleh[2], Nurrul Adilah Hasnorrul Hadi[3], Nurul Izzaty Syazwani Roslan[4], Amirul Hakim Abd Aziz[5] & Ahmad Syahmi Ahmad Fadzil[6]

THE ROLE OF TEAM LEADERSHIP ON SEARCH AND RESCUE (SAR) TEAM PERFORMANCE IN DISASTER MANAGEMENT 29 - 43
Norsyazwani Ab Halim[1] Azlyn Ahmad Zawawi[2*], Ashrul Riezal Asbar[3]

THE SUSTAINABILITY OF MALAYSIAN AGRICULTURE BASIC FOOD PRODUCTION BY 2030 44 - 52
Suzilah Ismail[1*] & Thanusha Palmira Thangarajah[2]

DYNAMICS SIMULATION APPROACH IN MODEL DEVELOPMENT OF UNSOLD NEW RESIDENTIAL HOUSING IN JOHOR 53 - 65
Lok Lee Wen[1*] & Hasimah Sapiri[2]

DEVELOPING A HEALTH-CENTERED MEDICAL HUMANITY EDUCATION FOR SERVICE EXCELLENCE 66 - 78
Haifeng Zhang[1], Malvern Abdullah[2], Boo Ho Voon[3*], Margaret Lucy Gregory[4] & Yuan Su[5]

THE CONCEPT OF UMRAH DIY 79 - 92
Siti Atikah Rusli[1], Arni Abdul Gani[2*] & Nor Asmalina Mohd Anuar[3]

CHETTI MELAKA OF THE STRAITS: A CONCEPTUAL PAPER OF MILLENNIAL INTENTION TO CONSUME PERANAKAN INDIAN CUISINE 93 - 103
Muhamad Jufri Ismail[1], Muhammad Safuan Abdul Latip[2*]

ASSESSING USAGE OF METACOGNITIVE ONLINE READING STRATEGY AND ITS RELATIONSHIP WITH STUDENTS' COMPREHENSION ACHIEVEMENT IN THE NEW NORM 104 - 119
Saripah Anak Sinas[1], Suthagar A/L Narasuman[2] and Sandra Phek-Lin Sim[3]

DETERMINANTS OF COVID-19 DEATHS IN THE EARLY STAGE OF THE PANDEMIC: WORLDWIDE PANEL DATA EMPIRICAL EVIDENCE 120 - 134
Siew King Ting [1*], Howe Eng Tang[2], Tze Wee Lal[3], Li Li Lau[4] & Lucy Batchy Gabriel Puem[5]

INFLUENCING FACTORS ON THE DECORATIVE ART FEATURES OF TRADITIONAL WINDOWS AND DOORS IN THE SOUTH YANGTZE RIVER REGIONS OF CHINA 135 - 148
Wang Lukun[1] & Azhari Md Hashim[2*]

THE STEWARDSHIP OF BENEVOLENCE: ITS IMPORTANCE IN ACHIEVING ACCOUNTABILITY AND PUBLIC TRUST TOWARDS LOCAL GOVERNMENT 149 - 158
Nor Zaini Zainal Abidin[1*], Azni Syafena Andin Salamat[2]

DETERMINANTS OF RECYCLING INTENTION AMONG PUBLIC UNIVERSITY STUDENTS IN TERENGGANU 159 - 168
Hani Sakina Mohamad Yusof[1*], Sofiah Ngah[2], Suzila Mat Salleh[1], Siti Fatimah Mardiah Hamzah[1], Noor Hafiza Mohammed[1]

VARK LEARNING STYLE PREFERENCES AMONG MALAYSIAN UNIVERSITY STUDENTS IN OPEN AND DISTANCE LEARNING (ODL) 169 - 182
Nurul Nadiah Rasdi [1*] , Ahmad Najmie Rusli [2]

TINJAUAN LITERATUR PEMBANGUNAN APLIKASI KOSA KATA BAHASA ARAB KOMUNIKASI MUFRADATI PELAJAR UiTM 183 - 195
Muhamad Khairul Anuar Zulkepli [1*], Burhanuddin Wahab [2], Ahmad Fauzi Yahaya [3], Mohd Zulkhairi Abd Hamid [4], Norhayuza Mohamad [5]

DETERMINANTS OF TRADE BALANCE IN SOUTHEAST ASIAN COUNTRIES 196 - 207
Wan Syahira Illyana Wan Shahrul Bahrin[1], Bee-Hoong Tay[2*]

PEMBANGUNAN PAUTAN i-SOURCE UiTM PRESS 2 U (THE DEVELOPMENT OF i-SOURCE UiTM PRESS 2 U LINK) 208 - 220
Azyyati binti Anuar[1], Daing Maruak Sadek[2*], Juaini Jamaludin[3], Roshidah Safeei[4], Nor Hafizah Abdul Razak[5], Junaida Ismail[6], Mas Aida Abd Rahim[7] & Firdaus Abdul Rahman[8]

COMPARATIVE ANALYSIS ON DEFINITIONS AND TYPES OF APOLOGIES IN APOLOGY LEGISLATION IN THE UK, REPUBLIC OF IRELAND, AUSTRALIA, CANADA, THE USA AND HONG KONG 221 - 223
Nurul Shuhada Suhaimi[1], Haswira Nor Mohamad Hashim [2*] & Noraiza Abdul Rahman[3]

PERSPECTIVES: GOOGLE TRANSLATE USAGE 224 - 239
Aishah Musa[1*], Rafidah Amat[2]

NO TIME TO DISPOSE? A STUDY ON THE CORRELATIONS AND ITS CONTRIBUTING FACTORS AFFECTING UNIVERSITY STUDENTS' INTENTION TO PRACTISE E-WASTE 240 - 261
Muhamad Azfar Bin Mohamad Zuhdi[1], Mohd Nazir Rabun[2], Haziq Iskandar Bin Hamdan[3], Mohd Rozaimy Ridzuan[4]

Voice of Academia
Academic Series of Universiti Teknologi MARA Kedah

Voice of Academia Vol.18 Issue (2) 2022

Voice of Academia

e-ISSN: 2682-7840

VARK LEARNING STYLE PREFERENCES AMONG MALAYSIAN UNIVERSITY STUDENTS IN OPEN AND DISTANCE LEARNING (ODL)

Nurul Nadiah Rasdi [1*] , Ahmad Najmie Rusli [2]

[1] Academy of Language Studies, Universiti Teknologi MARA Cawangan Johor, Kampus Pasir Gudang
[2] College of Engineering, Universiti Teknologi MARA Cawangan Johor, Kampus Pasir Gudang

ARTICLE INFO

Article history:

Received Feb 2022
Accepted April 2022
Published Jan 2023

Keywords:

Learning Style, VARK, ODL, online

Corresponding Author:
nurulnadiahrasdi@uitm.edu.my

ABSTRACT

Students have their own preferred way when it comes to learning. They prefer to learn through visual (V), aural (A), read/write (R), or kinesthetic (K). These four behavioural learning styles are common among the students. The objectives of this study are to identify university students' learning styles in Open and Distance Learning (ODL), (1) in general and (2) according to gender. A total of 71 diploma students participated in this study. The students were asked to answer an online questionnaire. The data gathered was analysed via SPSS 26, which are frequency, mean, and independent sample t-Test. For research objective 1, it was found that students preferred visual (M-18.92), kinesthetic (M-18.17), read/write (M-17.54), and aural (M-17.49) learning styles. As for the statement on getting feedback from teachers, the students preferred kinesthetic (M-3.90), followed by read/write (M-3.59), visual (M-3.56), and aural (M-3.54) learning styles. For research objective 2, both male (M-18.52) and female (M-19.48) students prefered visual learning style the most. However, there are differences for the least preferred learning styles as female students least preferred aural (M-17.72), while male students least preferred read/write (M-17.02) learning styles. The findings of this study can help teachers to identify students' learning styles and use appropriate Learning Management Systems (LMS), tools, and applications to attract and motivate students to learn during ODL.

©2023 UiTM Kedah. All rights reserved.

1. Introduction

Learning style is the preferred way for students to learn. It is also how the students can easily comprehend and retain information (Mirza & Khurshid, 2020). It has a significant effect on the students' learning strategies, which in turn affects learning outcomes (Syilvia & Bansa, 2022). When the students are interested, it can motivate them to keep learning.

The learning style is especially important in Open and Distance Learning (ODL) environment where students learn individually at home and they will feel disconnected from their friends and teachers (Hosseini & Mehraein, 2022). ODL is implemented due to the deadly coronavirus disease (COVID19) that emerged at the end of 2019 all around the world (Razami, & Ibrahim, 2021). Many factors contribute to the success of e-learning which are accessibility, usage of appropriate methods, course content, and assessment criteria (Bączek, Zagańczyk-Bączek, Szpringer, Jaroszyński, & Wożakowska-Kapłon, 2021). Learning style is also one of the factors that contribute to the success of students' learning via ODL (Syilvia & Bansa, 2022). Therefore, it is essential to explore students' learning style in ODL.

Students learn using sensory modalities which are visual (V), aural (A), read/write (R), or kinesthetic (K). In this study, VARK learning styles proposed by Fleming & Bonwell (2019) was utilised. The objectives of this study are:
i) to investigate university students' preference to learn based on VARK learning styles in ODL.
ii) to analyse university students' preference to learn based on VARK learning styles in ODL according to gender.

By analysing the students' learning styles according to gender, the findings can assist teachers to develop and implement teaching approaches that are gender-specific to increase students' motivation and learning (Andini & Prastiyowati, 2021). Thus, responses from the students can aid the teachers to find ways to make the delivery of learning more interesting to attract students' interests and motivate them to learn.

2. Literature Review

2.1 Learning Styles

Different learners learn differently. There are many interpretations of the term learning style. Learners prefer some modes when they are taking in or giving out information (Fleming & Bonwell, 2019). According to Mirza and Khurshid (2020), learning style refers to an individual's potential to easily comprehend and retain information. It is also how the students obtain, store, and extract information (Syilvia & Bansa, 2022). RA and Indriani (2020) defined learning style as a reliable way for students to respond and utilise stimuli in learning. Learning style is also described as a natural way for the students to acquire knowledge (Ariastuti & Wahyudin, 2022).

In this study, the learning style discussed by Fleming and Bonwell (2019) was employed. It is called VARK learning styles and it includes visual (V), aural (A), read/write (R), and kinesthetic (K) (Table 1).

Table 1
VARK Learning Styles

VARK	Explanation
Visual	Visual learners see information in charts, graphs, diagrams, flow charts, and all the symbolic arrows, circles, hierarchies, and other devices that are used to represent what might have been presented in words. They also like to see the layout, patterns, designs, and colour.
Aural	Aural learners learn by speaking or listening. They learn best from discussion, oral feedback, asking questions, email, mobile chat, texting, discussion boards, oral presentations, classes, tutorials, and talking with others.
Read/write	Read/write learners either read or write information that is displayed in words. They like quotes, lists, texts, books, brochures, handouts, and manuals.
Kinesthetic	Kinesthetic learners learn best by doing. Their preference is for hands-on experiences.

2.2 VARK Learning Styles and Students

Students have different preferred learning styles. There are students who preferred visual learning styles the most (Chetty et al., 2019; Ariastuti & Wahyudin, 2022; EL Ghouati, 2017). Students who learn best by listening preferred aural learning style according to a study conducted by Hosseini and Mehraein (2022), and Dehghani (2021). Read/write learning style is preferred by Iranian EFL students according to a study by Moayyeri (2015). Moreover, there were studies indicating that students preferred kinesthetic learning styles the most (Chen, Mohd Salaomi, & Ahmad Nazri, 2022; Andini & Prastiyowati, 2021; Payaprom, & Payaprom, 2020).

Learning styles can either have (Hosseini & Mehraein, 2022) or do not have (Marantika, 2022; Cabual, 2021; Payaprom, & Payaprom, 2020) significant difference in terms of gender. In a study conducted by Marantika (2022) on 30 second semester German students, male students preferred aural, while female students preferred kinesthetic learning style. According to the study conducted by Payaprom and Payaprom (2020) on first-year undergraduates of a language programme in Thailand, male students preferred visual learning style, whereas female students preferred read/write and aural learning styles. Hosseini and Mehraein (2022) claimed that male students in the English programme preferred kinesthetic learning style more than female students. Horton, Wiederman, and Sain (2012) found that female students in the Science programme preferred kinesthetic learning style the most.

2.3 ODL and Students

Online learning is not new and it is gaining popularity around the world. Students learn synchronously or asynchronously. Synchronous learning is when students and teachers interact in real time. Teachers give lectures to students directly. On the contrary, asynchronous learning is not in real time and it is not interactive. Teachers provide learning material to the students and give time for the students to complete the assignment given (Palupi, 2022). Due to COVID19, ODL is implemented (Razami, & Ibrahim, 2021).

When students learn via ODL, it can help them to be more technology literate because there is a purpose of using technology which is for education (Herwiana & Laili, 2022). Students stay at home and they do not have to travel to attend lectures. As a result, less money is spent. They learn at their own pace and the learning is flexible. They also learn wherever they are

comfortable (Razami, & Ibrahim, 2022; Bączek, Zagańczyk-Bączek, Szpringer, Jaroszyński, & Wożakowska-Kapłon, 2021). It will also make them have positive attitudes towards learning. It reduces shyness because the students share ideas in a forum. They will be active and participate during the lesson. It will also be easier for them to access to online materials for learning (Herwiana & Laili, 2022; Bączek, Zagańczyk-Bączek, Szpringer, Jaroszyński, & Wożakowska-Kapłon, 2021).

Apart from the benefits, there are also downsides of learning via ODL. Students are not motivated and lack focus to learn through online medium (Razami & Ibrahim, 2021). The students have lack of communication and interaction with other students (Herwiana & Laili, 2022; Razami & Ibrahim, 2021) and teachers (Herwiana & Laili, 2022). In addition, students have technical problems with IT equipment (Bączek, Zagańczyk-Bączek, Szpringer, Jaroszyński, & Wożakowska-Kapłon, 2021). Technical problems can be anything. It will be more frustrating when some of the students are illiterate in technology. Poor Internet connection is also one of the challenges faced by the students, especially students who live in the rural areas. Besides, difficulty to understand course material, laziness, and poor time management also contribute to the challenges because the students are at home (Herwiana & Laili, 2022).

2.4 Past Studies on VARK Learning Styles in ODL

Hosseini and Mehraein (2022) conducted a study to investigate the role of VARK learning styles in learners' preferences for the specific tasks added in online English learning classrooms. The participants were 224 learners of English as a foreign language in a private language school in Tehran. The activities were Video Speaking Assignments, Writing Assignments, Classroom Presentations, Classroom Discussions, Short Grammar Videos, Vocabularies Text Messages, and Short Quizzes. It was found that aural learning style is the most preferred learning style among the students with 67 students (30%) choosing this learning style.

In Syilvia and Bansa's (2022) study, kinesthetic learning style dominated among the four learning styles with 46%. It is followed by aural (27%), read/write (14%), and visual (13%) learning styles respectively. The aim of this study is to explore students' learning style in online English learning. A total of 106 semester 1 Management Department students in University of Muhammadiyah Jambi participated in the study and they were required to answer an online survey on VARK learning styles.

Cabual (2021) claimed that students favoured visual learning style the most. The objective of the study is to analyse the second-year college students' VARK learning styles and preferred learning modalities. A total of 199 students were chosen to complete a survey and submitted their responses via Google Form. The students were from General Science, English, Industrial Education, and Technology and Livelihood Education programmes. It was found that 105 students were visual learners (52.76%), 36 students were aural learners (18.09%), 35 students were kinesthetic learners (17.59%), and 23 students were read/write learners (11.56%).

Furthermore, a study conducted by RA and Indriani (2020) indicated that students preferred kinesthetic learning style the most. The participants of the study were 33 students aged 19-23 years old. The purpose of the study is to determine the learning styles used in an online speaking class and the VARK Questionnaire was utilised. It was revealed that kinesthetic learning style is the most preferred learning style with 19 students using this learning style. Students immediately practiced after receiving materials in the online speaking class. The least preferred learning style is visual learning style with only 3 students.

3. Methodology

The research design of this study was a survey descriptive research. An online survey was administered to elicit information and the sampling technique used was convenience sampling. A total of 71 diploma English students in a Malaysian university participated in this study. The students were asked to fill in a survey at the beginning of the semester to know the students' preferred learning style to learn English.

There are two sections in the questionnaire which are Demographic Profile and Learning Style (Table 2). Section A: Demographic Profile, the participants were asked to answer questions on gender, Internet connection, scynchronous learning, and asynchronous learning. Section B: Learning Style, there are 20 questions. The questions were constructed based on the VARK learning styles; visual, aural, read/write, and kinesthetic (Fleming & Bonwell, 2019). There are 5 questions for each learning style. The participants had to answer the statements based on Likert Scale: 1 (Strongly Disagree), 2 (Disagree), 3 (Neutral), 4 (Agree), and 5 (Strongly Agree).

Table 2
Distribution of Items in Instrument

Section	Variables		No. of Items
A	Demographic Profile		4
B	Learning Style		
		Visual	5
		Aural	5
		Read/Write	5
		Kinesthetic	5

The data gathered was analysed using SPSS 26; frequency, mean, and independent sample t-Test. Frequency was used to analyse the Demographic Profile section. Mean was employed to analyse the students' learning styles. To analyse the learning style in terms of gender, independent sample t-Test was applied.

4. Results

4.1 Demographic Profile

In total, 71 students consisting of 42 male students (59.2%) and 29 female students (40.8%) were involved in the study. For the question on internet connection, majority of them (40.8%) had good internet connection, followed by satisfactory (38.0%), poor (16.9%), and excellent (4.3%). The students preferred both asynchronous and synchronous learning. However, more students preferred asynchronous learning with 66 students (93%) as compared to 49 students (69%) for synchronous learning (Table 3).

Table 3
Demographic Profile of Respondents

No.	Variables		Frequencies (N)	Percentage (%)
1.	Gender			
		Male	42	59.2
		Female	29	40.8
2.	Internet Connection			
		Poor	12	16.9
		Satisfactory	27	38.0
		Good	29	40.8
		Excellent	3	4.2
3.	Prefer Synchronous Learning			
		Yes	49	69
		No	22	31
4.	Prefer Asynchronous Learning			
		Yes	66	93
		No	5	7

4.2 Learning Styles

Table 4 ranks and presents the overall mean score of students' preferred learning styles. From the mean score presented, it was found that students in this study chose visual (18.92) as their most preferred learning style. It is followed by kinesthetic (18.17), and read/write (17.54) learning styles. Aural (17.49) learning style is the least preferred learning style.

Table 4
Learning Style

Learning Style	Mean
Visual	18.92
Kinesthetic	18.17
Read/Write	17.54
Aural	17.49

To further understand students' responses for each statement of the learning style category, the following tables are constructed.

Visual learning style is the most preferred learning style. It is revealed in Table 5 that students understand better when they can see patterns in things when they are learning (M-3.96). They are also motivated when they see colourful notes (M-3.87) and like interesting designs and features (M-3.79). Besides, they prefer their lecturer to use diagrammes, charts, maps, or graphs when teaching online (M-3.73).

Table 5
Visual Learning Style

No.	Statement	Mean
1	I understand better when I can see patterns in things when I am learning.	3.96
2	I am motivated when I see colourful notes.	3.87
3	I like interesting designs and features when learning from the Internet.	3.79
4	I prefer the lecturer to use diagrams, charts, maps, or graphs when teaching online.	3.73
5	I would like the lecturer to give me feedback using graphs showing what I achieved.	3.56

The second preferred learning style in this study is kinesthetic learning style as shown in Table 6. Students like to watch videos the most (M-3.86). They also understand better when using examples and applications when learning (M-3.85), and they prefer the lecturer to do demonstrations, models, or practical sessions when teaching online (M-3.72).

In terms of feedback, the students like the lecturer to give feedback using examples from what they had done (kinesthetic – M-3.70) as compared to using graphs to show what they have achieved (visual – M-3.56). As for the statement 'I want to engage and participate in an activity such as doing a presentation,' it is not only the lowest for kinesthetic learning style category but it is also the lowest for the statements on the four learning styles.

Table 6
Kinesthetic Learning Style

No.	Statement	Mean
1	I like to watch videos when learning from the Internet.	3.86
2	I understand better when I use examples and applications when I learn.	3.85
3	I prefer the lecturer to do demonstrations, models, or practical sessions when teaching online.	3.72
4	I would like the lecturer to give me feedback using examples from what I have done.	3.70
5	I want to engage and participate in an activity such as doing a presentation.	3.04

The third preferred learning style is the read/write learning style. From Table 7, it was found that students understand better when they read notes and write it again on their own (M-3.72). It is followed by the statement students prefer the lecturer to use interesting written descriptions, list, and explanations when teaching online (M-3.70), students would like the lecturer to give feedback using a written description of their result (M-3.59), and students like to read books, articles, and handouts when learning from the Internet (M-3.28). The statement students like to do a lot of readings and written exercises is ranked as the lowest in this category (M-3.24).

Table 7
Read/Write Learning Style

No.	Statement	Mean
1	I understand better when I read notes and write it again on my own.	3.72
2	I prefer the lecturer to use interesting written descriptions, list, and explanations when teaching online.	3.70
3	I would like the lecturer to give me feedback using a written description of my result.	3.59
4	I like to read books, articles, and handouts when learning from the Internet.	3.28
5	I like to do a lot of readings and written exercises.	3.24

Aural learning style ranks as the least preferred learning style. Students' responses for each statement are shown in Table 8. Students understand better when they talk things through by themselves or with other people (M-3.76) is the statement that is responded the most. Students also would like the lecturer to give feedback by talking it through with them (M-3.54). They also like to listen to audio channels where they can listen to podcasts or interviews (M-3.46), and prefer the lecturer to use question and answer, talk, or group discussion when teaching online (M-3.45). Meanwhile, the least preferred response from students is they do not like quiet environments and need to hear sounds such as songs (M-3.28).

Table 8
Aural Learning Style

No.	Statement	Mean
1	I understand better when I talk things through by myself or with other people.	3.76
2	I would like the lecturer to give me feedback by talking it through with me.	3.54
3	I like to listen to audio channels where I can listen to podcasts or interviews when learning from the Internet.	3.46
4	I prefer the lecturer to use question and answer, talk, or group discussion when teaching online.	3.45
5	I do not like quiet environments and need to hear sounds such as songs.	3.28

4.3 Learning Styles according to Gender

Table 9 shows the results of male and female students' learning styles. From the mean score presented, male students in this study preferred visual (M-18.52), kinesthetic (M-17.86), aural (M-17.33), and read/write (M-17.02) learning styles. In contrast, female students in this study preferred visual (M-19.48), kinesthetic (M-18.63), read/write (M-18.28), and aural (M-17.72) learning styles.

Table 9
Learning Styles according to Gender

Learning Style	Male (Mean)	Female (Mean)
Visual	18.52	19.48
Kinesthetic	17.86	18.63
Read/Write	17.02	18.28
Aural	17.33	17.72

To determine the significant difference of visual, aural, read/write, and kinesthetic learning styles between male and female students in this study, a t-Test specifically independent sample t-test was conducted. The significant difference is shown in Table 10. From the table, there is no significant difference in all learning styles between male and female students in this study.

Table 10
Independent Sample t-Test

Learning Styles	T Value	P Value	Significant Difference (P Value < 0.05)
Visual	-1.104	.274	Not Significant
Kinesthetic	-.939	.351	Not Significant
Read/Write	-1.445	.153	Not Significant
Aural	-.487	.628	Not Significant

5. Discussion

5.1 Learning Styles

Students in this study preferred visual learning style the most (M-18.92). They are more motivated to learn online when they can see patterns on what they are learning, colourful notes, interesting designs, and interesting features. It is crucial since students cannot see other students and teachers face-to-face. They have to see something on the screen that is attractive and captivating for them to retain their focus when learning. The preferred learning style of this study is in accordance with studies conducted by Chetty et al. (2019) among Malaysian students, Ariastuti and Wahyudin (2022) among Indonesian students, and EL Ghouati (2017) among Moroccan students that preferred visual learning style the most.

Although students in this study preferred visual learning style the most, they preferred kinesthetic learning style in terms of getting feedbacks (M-3.70). Kinesthetic (M-3.90) had the highest mean as compared to read/write (M-3.59), visual (M-3.56), and aural (M-3.54) learning styles. The students liked the lecturer to give feedback using examples from what they had done. It is easier for the students to understand what they had done wrong when the teachers demonstrate using the students' own work. This finding is supported by Ariastuti and Wahyudin (2022) who said kinesthetic learning style is the learning style that can help the students to improve the most even though the students prefer visual learning style more.

Kinesthetic learning style is the second preferred learning style in this study (M-18.17) and consistent with the findings found in other studies (Chen, Mohd Salaomi, & Ahmad Nazri, 2022;

Andini & Prastiyowati, 2021; Payaprom & Payaprom, 2020; RA & Indriani, 2020). However, students in this study do not want to engage and participate in an activity such as doing a presentation. This statement is ranked the lowest by the students from all the statements of the four learning styles. Students lack communication skills and are not comfortable communicating with other students via online (Herwiana & Laili, 2022; Razami, & Ibrahim, 2021).

It is also difficult for students who have problems with Internet connection to collaborate online. Only 12 students (16.9%) had poor Internet connection in this study. Even it is a small number, it still can affect the process of teaching and learning. This is in line with the study conducted by Herwiana and Laili (2022), and Palupi (2022) that found there are many challenges when teaching online and one of the challenges is connection/technical problems.

The students also favour read/write learning style with the mean of 17.54. Read/write learners prefer to read and write when studying. The finding is consistent with the study conducted by Moayyeri (2015) that stated 51.7% of Iranian EFL students preferred the read/write learning style. However, only 2 students in a study conducted by Dehghani (2021) chose read/write learning style when learning vocabulary. This learning style is also ranked as the lowest in Cabual's (2021) study with 11.56% of second-year college students are read/write learners.

The least preferred learning style is aural (M-17.49) learning style. The finding is in accordance with a study conducted by Ariastuti and Wahyudin in 2022 where only 20% of the students preferred this learning style. However, a study conducted by Dehghani in 2021 showed a positive response towards this learning style because the Iranian EFL students are mainly aural learners when learning vocabulary. It is also true in Hosseini's and Mehraein's (2022) study towards 67 students of a private language school in Tehran who preferred aural learning style.

5.2 Learning Styles according to Gender

The learning styles of the students in this study did not have any significant difference in terms of gender. This finding is in line with studies conducted by Marantika (2022) and, Payaprom and Payaprom (2020).

Both male (M-18.52) and female (M-19.48) students in this study preferred visual learning style the most. The finding is consistent with the study conducted by Chetty et al. (2019), Ariastuti and Wahyudin (2022), and EL Ghouati (2017). However, it is not consistent with the finding found by Payaprom and Payaprom (2020 where male students preferred visual learning style more than female students.

As for the least preferred learning style, there is a difference between male and female students. Female students least preferred aural learning style (M-17.72). The finding is consistent with the findings from a study conducted by Ariastuti and Wahyudin in 2022 where only 20% of the students preferred this learning style. Moreover, female students of this study preferred read/write learning style more. As claimed by Horton, Wiederman, and Sain (2012), it was found that 59 female students preferred read/write learning styles.

On the contrary, male students least preferred read/write learning style (M-17.02). This finding is in accordance with the finding from Ariastuti's and Wahyudin's study (2022) where it was found that reading is too boring for the students as only a few students like to learn from written and printed expressions. Furthermore, Andini and Prastiyowati (2021) found that no male English programme students in one of the private universities in Malang chose read/write as their learning style.

5.3 Implications in Teaching and Learning

There is no one learning style that can fit everyone. Thus, it is vital for teachers to provide a number of different learning options that take into account different learning styles in the classroom and be creative (Mirza & Khurshid, 2020). When the teacher's teaching style is not aligned with the student's learning style, it can affect the student's attitude and motivation (Chetty et al., 2019). So, the teachers need to diversify their teaching styles, teaching methods, and instructional techniques to have effective and smooth teaching and learning (Payaprom, & Payaprom, 2020; Chetty et al., 2019). The teachers can use various Learning Management Systems (LMS), tools, and applications to cater to the students' learning styles. Table 11 is the summary of suggested LMS, tools, and applications that teachers can use in the teaching and learning process. The LMS, tools, and applications can be used both by the teachers and the students, and are also free to use.

Table 11
Suggested Learning Management Systems (LMS), Tools, and Applications

Visual	Kinesthetic	Read/Write	Aural
Prezi	Factile	Padlet	Zoom
Canva	Quizlet	Weebly	Audacity
Buncee	Quizizz	OneNote	Vocaroo
Coggle	Flipgrid	HyperDoc	Buzzsprout
FreeMind	Animoto	Jamboard	SoundCloud
Powerpoint	Edpuzzle	Hot Potatoes	Google Meet
Mentimeter	Goreact	Google Docs	Microsoft Teams
MindMeister	Pixton Comic Builder	A Web Whiteboard	QuickVoice Recorder

For visual learners, the LMS, tools, and applications that can be used are Powerpoint, Prezi, Canva, Buncee. Coggle, FreeMind, Powerpoint, Mentimeter, and MindMeister. Teachers can present notes to students via Powerpoint, Prezi, Canva, Bunceet, and Mentimeter. The teachers can present in infographics and include a variety of colours to attract visual learners. Mind mapping can be done by using Coggle, FreeMind, or MindMeister.

For kinesthetic learners, the LMS, tools, and applications that can be used are Factile, Quizizz, Quizlet, Flipgrid, Animoto, Edpuzzle, Goreact, and Pixton Comic Builder. The teachers can ask students to participate in activities like playing online games or quizzes such as Factile, Quizizz, Quizlet, or Edpuzzle. The students can compete with each other in answering questions. The students can also make a short video presentation by using Flipgrid, Animoto, or Goreact, and comic using Pixton Comic Builder.

For read/write learners, the LMS, tools, and applications are A Web Whiteboard, Jamboard, Google Docs, OneNote, HyperDoc, Weebly, Padlet, and Hot Potatoes. The teachers can include tools such as A Web Whiteboard or Jamboard where students can write their answers during the lesson. Teachers can also ask students to create an online portfolio using Padlet, Weebly, or HyperDoc. Students can also make their own notes using Google Docs or OneNote. Teachers can use Hot Potatoes to make assignments for the students.

For aural learners, the LMS, tools, and applications are Microsoft Teams, Google Meet, Zoom, Audacity, Vocaroo, QuickVoice Recorder, Buzzsprout, and SoundCloud. Teachers can give lectures synchronously via Microsoft Teams, Google Meet, or Zoom, and students listen. The

teachers can also use Audacity, Vocaroo, or QuickVoice Recorder to record themselves for lectures and ask students to listen to it. The students can also record themselves. The teachers can ask students to listen to podcasts using Buzzsprout or SoundCloud.

6. Conclusion

From the findings, it can be concluded that the students preferred visual learning style the most. This can be seen as students ranked high for all the statements in the category except for feedbacks. Students want the teachers to give feedbacks in terms of using examples from what they have done. The students also do not want to engage and participate in an activity such as doing a presentation. In terms of the least preferred learning style, it is different where male students least preferred read/write, while female students least preferred aural learning styles.

Teachers have to be aware of students' preferred learning style by administering a survey for students to answer before the lesson starts. This statement is supported by Cabual (2021) who suggested teachers should administer a diagnosis of the learning styles so that teachers are guided with their students' information. Consequently, the teaching and learning process will be smooth and effective. It will also attract the students' attention and make them motivated to learn.

It is recommended that the research on learning styles should be done in the future as different samples may yield different responses that produce interesting findings. Future research can also include qualitative data in the form of interviews with the students to know in-depth about their learning style and other related information. It is also interesting to know the teachers' teaching styles and compare them with the students' learning styles.

Acknowledgments
We thank the anonymous reviewers for their useful suggestions.

References

Andini, T. M. & Prastiyowati, S. (2021). Learning Styles and Gender Differences among University Students in Indonesia. International Journal of English Language & Translation Studies. 9(3). 58-64. Available: http://www.eltsjournal.org/archive/value9%20issue3/7-9-3-21.pdf

Ariastuti, M. D. & Wahyudin, A. Y. (2022). Exploring academic performance and learning style of undergraduate students in English Education program. *Journal of English Language Teaching and Learning*, *3*(1), 67-73. Available: http://jim.teknokrat.ac.id/index.php/english-language-teaching/index

Bączek, M., Zagańczyk-Bączek, M., Szpringer, M., Jaroszyński, A., & Wożakowska-Kapłon, B. (2021). Students' perception of online learning during the COVID-19 pandemic: A survey study of Polish medical students. Medicine (Baltimore). 2021 Feb 19;100(7):e24821. DOI: 10.1097/MD.0000000000024821.

Cabual, R. A. (2021). Learning styles and preferred learning modalities in the new normal. *Open Access Library Journal*, 8(4), 1-14. DOI: 10.4236/oalib.1107305

Chen, A. H., Mohd Salaomi, S. N. W., & Ahmad Nazri, A. N. (2022). Unimodal & kinaesthetic learning styles predominate in both science and non-science university students in Malaysia using VARK. *Journal of Academia*, *10*(1), 61-71. Available: https://myjms.mohe.gov.my/index.php/joa/article/view/14608

Chetty, N. D. S. et al. (2019). Learning styles and teaching styles determine students' academic performances. *International Journal of Evaluation and Research in Education*, *8*(4), 610-615. DOI: 10.11591/ijere.v8i3.20345

Dehghani, A. P. (2021). Learning styles and vocabulary learning by Iranian undergraduate EFL learners. *Contemporary Educational Researches Journal*, *11*(4), 176–185. DOI: https://doi.org/10.18844/cerj.v11i4.5723

Fleming, N. D. & Bonwell, C. (2019). How Do I Learn Best? A learner's guide to improved learning. Available: https://vark-learn.com/wp-content/uploads/2019/07/How-Do-I-Learn-Best-Sample.pdf

EL Ghouati, A. (2017). Examining the relationship between e-learning styles and achievement in English among Moroccan University students. Arab World English Journal (AWEJ) Volume 8, Number 2, June, 2017 Pp.323-332. DOI: https://dx.doi.org/10.2139/ssrn.3005614

Herwiana, S., & Laili, E.N. (2022). Exploring benefits and obstacles of online learning during the Covid-19 Pandemic in EFL students' experiences. *QALAMUNA: Jurnal Pendidikan, Sosial, dan Agama*. DOI: 10.37680/qalamuna.v14i1.1259

Horton, D. M., Wiederman, S. D., & Sain, D. A. (2012). Assessment outcome is weakly correlated with lecture attendance: influence of learning style and use of alternative materials. *Advances in physiology education*, *36*(2), 108-115. DOI: https://doi.org/10.1152/advan.00111.2011

Hosseini, H. M. & Mehraein, S. (2022). Learning styles and task preferences in online language courses: Match or mismatch? *Cypriot Journal of Educational Science.* 17(1), 81-94. DOI: https://doi.org/10.18844/cjes.v17i1.6683

Marantika, J. E. R. (2022). The relationship between learning styles, gender and learning outcomes. *Cypriot Journal of Educational Science*. 17(1), 56-67. DOI: https://doi.org/10.18844/cjes.v17i1.668

Mirza, M. A. & Khurshid, K. (2020). Impact of VARK learning model at tertiary level education. World Academy of Science, Engineering and Technology. *International Journal of Educational and Pedagogical Sciences*, *14*(5), 354-361. Available: https://publications.waset.org/10011198/impact-of-vark-learning-model-at-tertiary-level-education

Moayyeri, H. (2015). The impact of undergraduate students' learning preferences (VARK Model) on their language achievement. ***Journal of Language Teaching & Research***, *6*(1). DOI: http://dx.doi.org/10.17507/jltr.0601.16

Palupi, M. E. (2022). The difference between synchronous and asynchronous online learning communication during COVID-19 Pandemic. *Journal of English Language and Literature (JELL)*, 7(1), 11-18. DOI: https://doi.org/10.37110/jell.v7i1.138

Payaprom, S., & Payaprom, P. (2020). Identifying learning styles of language learners: A useful step in moving towards the learner-centered approach. *Journal of Language and Linguistic Studies*, 16(1), 59-72. DOI: 10.17263/jlls.712646

RA, A. B., & Indriani, L. (2020). An Analysis of EFL Learners' Learning Style in Online Speaking Class. *Jurnal Review Pendidikan dan Pengajaran (JRPP)*, *3*(2), 322-327. DOI: https://doi.org/10.31004/jrpp.v3i2.1325

Razami, H. H., & Ibrahim, R. (2021). Distance Education during COVID-19 pandemic: The perceptions and preference of university students in Malaysia towards online learning. *International Journal of Advanced Computer Science and Applications*, *12*(4). Available: http://eprints.utm.my/id/eprint/95594/1/RoslinaIbrahim2021_DistanceEducationduringCOVID19Pandemic.pdf

Syilvia, W. J. & Bansa, Y. A. (2022). Pandemic portrayed: Learning style in online learning. *BRIGHT: A Journal of English Language Teaching, Linguistics and Literature*, *5*(1), 12-17. DOI: https://doi.org/10.29100/bright.v5i1.2448

UNIVERSITI TEKNOLOGI MARA

ISSN: : 1985-5079