



05-4506832



pustaka.upsi.edu.my



Perpustakaan Tuanku Bainun
Kampus Sultan Abdul Jalil Shah



PustakaTBainun



ptbupsi

THE IMPACT OF VIRTUAL REALITY TECHNOLOGY ON STILL LIFE SKETCHING THROUGH A CASE STUDY AT MIAN YANG TEACHERS COLLEGE



05-4506832



pustaka.upsi.edu.my



Perpustakaan Tuanku Bainun
Kampus Sultan Abdul Jalil Shah



PustakaTBainun



ptbupsi

WEN QUAN

SULTAN IDRIS EDUCATION UNIVERSITY

2025



05-4506832



pustaka.upsi.edu.my



Perpustakaan Tuanku Bainun
Kampus Sultan Abdul Jalil Shah



PustakaTBainun



ptbupsi

THE IMPACT OF VIRTUAL REALITY TECHNOLOGY ON STILL LIFE
SKETCHING THROUGH A CASE STUDY AT MIAN YANG
TEACHERS COLLEGE

WEN QUAN

THESIS PRESENTED TO QUALIFY FOR A DOCTOR OF PHILOSOPHY

FACULTY OF ARTS, SUSTAINABILITY AND CREATIVE INDUSTRY
SULTAN IDRIS EDUCATION UNIVERSITY

2025

UPS/IPS-3/BO 32
Pind : 00 m/s: 1/1



Please tick (✓)
Project Paper
Masters by Research
Master by Mixed Mode
PhD

✓

INSTITUTE OF GRADUATE STUDIES

DECLARATION OF ORIGINAL WORK

This declaration is made on the5th.....day of...August...20.25...

i. Student's Declaration:

I, WEN QUAN, P20202001146, Faculty of Arts, Sustainability and Creative Industry (PLEASE INDICATE STUDENT'S NAME, MATRIC NO. AND FACULTY) hereby declare that the work entitled IMPACT OF VIRTUAL REALITY TECHNOLOGY ON STILL LIFE SKETCH: A CASE STUDY IN MIAN YANG TEACHERS' COLLEGE is my original work. I have not copied from any other students' work or from any other sources except where due reference or acknowledgement is made explicitly in the text, nor has any part been written for me by another person.

Wen Quan

Signature of the student

ii. Supervisor's Declaration:

I AP Dr Abdul Aziz bin Zalay @ Zall (SUPERVISOR'S NAME) hereby certifies that the work entitled IMPACT OF VIRTUAL REALITY TECHNOLOGY ON STILL LIFE SKETCH: A CASE STUDY IN MIAN YANG TEACHERS' COLLEGE (TITLE) was prepared by the above named student, and was submitted to the Institute of Graduate Studies as a * partial/full fulfillment for the conferment of PhD in Fine Art Study (PLEASE INDICATE THE DEGREE), and the aforementioned work, to the best of my knowledge, is the said student's work.

10/8/2025

Date

AP Dr Abdul Aziz bin Zalay
Signature of the Supervisor
PM DR ABDUL AZIZ ZALAY
Pengetua
Jabatan Seni & Rekabentuk
Fakulti Seni Kejuruteraan & Industri Kreatif
Universiti Pendidikan Sultan Idris

**INSTITUT PENGAJIAN SISWAZAH /
INSTITUTE OF GRADUATE STUDIES****BORANG PENGESAHAN PENYERAHAN TESIS/DISERTASI/LAPORAN KERTAS PROJEK
DECLARATION OF THESIS/DISSERTATION/PROJECT PAPER FORM**

Tajuk / Title: IMPACT OF VIRTUAL REALITY TECHNOLOGY ON STILL LIFE
SKETCH: A CASE STUDY IN MIAN YANG TEACHERS' COLLEGE

No. Matrik / Matric's No.: P20202001146

Saya / I: WEN QUAN

(Nama pelajar / Student's Name)

mengaku membenarkan Tesis/Disertasi/Laporan Kertas Projek (Kedoktoran/Sarjana)* ini disimpan di Universiti Pendidikan Sultan Idris (Perpustakaan Tuanku Bainun) dengan syarat-syarat kegunaan seperti berikut:-

acknowledged that Universiti Pendidikan Sultan Idris (Tuanku Bainun Library) reserves the right as follows:-

1. Tesis/Disertasi/Laporan Kertas Projek ini adalah hak milik UPSI.
The thesis is the property of Universiti Pendidikan Sultan Idris
2. Perpustakaan Tuanku Bainun dibenarkan membuat salinan untuk tujuan rujukan dan penyelidikan.
Tuanku Bainun Library has the right to make copies for the purpose of reference and research.
3. Perpustakaan dibenarkan membuat salinan Tesis/Disertasi ini sebagai bahan pertukaran antara Institusi Pengajian Tinggi.
The Library has the right to make copies of the thesis for academic exchange.
4. Sila tandakan (✓) bagi pilihan kategori di bawah / Please tick (✓) for category below:-

☐

SULIT/CONFIDENTIAL

Mengandungi maklumat yang berdarjah keselamatan atau kepentingan Malaysia seperti yang termaktub dalam Akta Rahsia Rasmi 1972. / Contains confidential information under the Official Secret Act 1972

☐

TERHAD/RESTRICTED

Mengandungi maklumat terhad yang telah ditentukan oleh organisasi/badan di mana penyelidikan ini dijalankan. / Contains restricted information as specified by the organization where research was done.

☒

TIDAK TERHAD / OPEN ACCESS

Wen Quan

(Tandatangan Pelajar/ Signature)

[Signature]

(Tandatangan Penyelia/ Signature of Supervisor)
& (Nama & Cop Rasmi / Name & Official Stamp)

PM DR ABUL AZIZ ZALAY
Pengerusi

Jabatan SPM & Riset/Research

Universiti Pendidikan Sultan Idris

Tarikh: 10 August 2025





ACKNOWLEDGMENT

Completing a Ph.D. thesis is an arduous journey that demands dedication, perseverance, and the support of others. I am deeply grateful to be surrounded by such a supportive community of individuals who have not only accompanied me on this journey but also enriched my life. First and foremost, I would like to extend my heartfelt gratitude to my supervisor, Associate Professor Abdul Aziz bin Zalay. His unwavering support, guidance, and mentorship throughout this endeavor have been invaluable. His expertise, patience, and insightful feedback were instrumental in bringing this work to fruition. I am also immensely thankful to my family for their unwavering support, which has been the bedrock that enabled me to undertake this formidable project. Their encouragement and faith in my abilities have been the driving force behind my determination. Additionally, I wish to acknowledge the contributions of all those who have supported this work, whether directly or indirectly. From research participants to fellow scholars, your insights, feedback, and contributions have been indispensable to my research. Moreover, I extend my thanks to my home country. The rapid development in China has provided countless students like me the opportunity to study abroad. This experience has not only broadened my knowledge and understanding of the world but also allowed me to immerse myself in diverse cultures, beliefs, and traditions. In conclusion, I express my profound gratitude to everyone who has played a part in this journey. This thesis is a testament not only to my personal efforts but also to the collective support, encouragement, and assistance from those who have been there for me.



ABSTRACT

In the post-epidemic era, when globalisation and localisation require growth in China's arts and culture industries, this study focuses on three major challenges: technological illiteracy amongst educators, skill shifts in still-life drawing as a result of the epidemic, and the gap in technological proficiency between students and teachers at the Mianyang Teachers' College in Sichuan Province. Using the Quest 2 VR headset and Painting VR software, this study explored how virtual reality (VR) can improve the skills and knowledge of technologically illiterate teachers in the field of still life sketching. Data came from three groups: sketching and VR experts, participating teachers, and assessment experts. The study used a qualitative case study approach with purposive sampling and the data were analysed using ATLAS.ti. The findings shows that virtual reality (VR) has the potential to revolutionise art education. However, integrating VR into art curricula faces barriers due to current technological limitations. the cost of VR equipment, the need for high-performance hardware, and the availability of comprehensive, user-friendly software have limited its widespread adoption. Overcoming these barriers may usher in a new era of teaching and learning in the arts. Nevertheless, there is optimism about the future of VR. This study not only validates constructivist, experiential, and self-directed learning theories in VR environments, but also identifies VR technological challenges that will guide future research and development to provide better devices and user experiences. The conclusion is that it presents a systematic framework for evaluating VR-based still life sketching, which improves the objectivity of the evaluation and helps in the selection of effective VR educational tools.



IMPAK TEKNOLOGI REALITI MAYA TERHADAP LAKARAN KEHIDUPAN NYATA MELALUI KAJIAN KES DI KOLEJ PERGURUAN MIAN YANG

ABSTRAK

Dalam era pasca-wabak, apabila globalisasi dan penyetempatan memerlukan pertumbuhan dalam industri seni dan budaya China, kajian ini memfokuskan kepada tiga cabaran utama: buta huruf teknologi dalam kalangan pendidik, peralihan kemahiran dalam lukisan hidup mati akibat wabak itu, dan jurang dalam kecekapan teknologi antara pelajar dan guru di Maktab Perguruan Mianyang di Wilayah Sichuan. Menggunakan alat dengar Quest 2 VR dan perisian Painting VR, kajian ini meneroka bagaimana realiti maya (VR) boleh meningkatkan kemahiran dan pengetahuan guru yang buta huruf teknologi dalam bidang lakaran hidupan mati. Data datang daripada tiga kumpulan: pakar lakaran dan VR, guru yang mengambil bahagian dan pakar penilaian. Kajian menggunakan pendekatan kajian kes kualitatif dengan persampelan bertujuan dan data dianalisis menggunakan ATLAS.ti. Penemuan menunjukkan bahawa realiti maya (VR) berpotensi untuk merevolusikan pendidikan seni. Walau bagaimanapun, penyepaduan VR ke dalam kurikulum seni menghadapi halangan disebabkan oleh batasan teknologi semasa. Kos peralatan VR, keperluan untuk perkakasan berprestasi tinggi, dan ketersediaan perisian yang komprehensif dan mesra pengguna telah mengehadkan penggunaannya yang meluas. Mengatasi halangan ini mungkin membawa kepada era baharu pengajaran dan pembelajaran dalam seni. Namun begitu, terdapat keyakinan tentang masa depan VR. Kajian ini bukan sahaja mengesahkan teori pembelajaran konstruktivis, pengalaman dan terarah sendiri dalam persekitaran VR, tetapi juga mengenal pasti cabaran teknologi VR yang akan membimbing penyelidikan dan pembangunan masa depan untuk menyediakan peranti dan pengalaman pengguna yang lebih baik. Kesimpulannya ialah ia membentangkan rangka kerja yang sistematik untuk menilai lakaran hidup pegun berasaskan VR, yang meningkatkan objektiviti pemilihan alat VR yang berkesan dan membantu dalam pendidikan pemilihan penilaian yang berkesan dan membantu.



CONTENTS

	Page
DECLARATION OF ORIGINAL WORK	ii
DECLARATION OF THESIS	iii
ACKNOWLEDGEMENT	iv
ABSTRACT	v
ABSTRAK	vi
CONTENTS	vii
LIST OF TABLES	xiv
LIST OF FIGURES	xv
LIST OF APPENDICES	xx
CHAPTER 1 INTRODUCTION	
1.1 Introduction	1
1.2 Study Background	3
1.3 Problem Statement	7
1.4 Study Purpose	9
1.5 Research Objectives	9

1.6 Research Questions	10
1.7 Conceptual Framework	10
1.8 Operational Definition	12
1.8.1 VR Technology	13
1.8.2 Still Life Sketch	14
1.9 Limitations	15
1.9.1 Sampling Environment	16
1.9.2 Research Limitations	17
1.10 Significance of the Study	19
1.11 Summary	22

CHAPTER 2 LITERATURE REVIEW

 05-4506832
  pustaka.upsi.edu.my
 Perpustakaan Tuanku Bainun
Kampus Sultan Abdul Jalil Shah
  PustakaTBainun
  ptbupsi

2.1 Introduction	23
2.2 VR In Education	24
2.2.1 Definition of VR	41
2.2.2 Historical Development of VR in Education	49
2.3 Theories Underpinning VR In Education	60
2.3.1 Constructivist Learning Theory And VR	60
2.3.2 Experiential Learning Theory And VR	64
2.3.3 Self-Directed Learning And VR	69
2.4 Still Life Sketch: An Artistic Discipline	96
2.4.1 Definition of Still Life Sketch	99
2.4.2 Significance of Still Life Sketch	102

2.4.3 Historical Context and Evolution of Still Life Sketch	104
2.5 Past Studies	109
2.6 Hardware and Software Introduction	135
2.6.1 Quest 2	136
2.6.2 Pico	136
2.7 Summary	137

CHAPTER 3 METHODOLOGY

3.1 Introduction	139
3.2 Research Design	140
3.3 Research Approach	144
3.4 Scope of Study	155
3.5 Population	156
3.6 Samples	156
3.6.1 Samples' Profile	157
3.7 Sampling Technique	162
3.8 Research Procedures	164
3.9 Instruments	168
3.9.1 Semi-Structured Interviews	168
3.9.2 Art Assessment Form	171
3.10 Data Collection	178
3.11 Data Analysis	180
3.11.1 Semi-Structured Interviews	181

3.11.2 Document Analyses	187
3.12 Data Validity and Reliability	192
3.13 Ethical Considerations	210
3.14 Conclusions	215
CHAPTER 4 FINDINGS	
4.1 Introduction	216
4.2 Research Question One	217
4.2.1 Sketch	218
4.2.2 Virtual Reality	262
4.2.3 Selected Hardware and Software	315
4.3 Research Question Two	318
4.3.1 What It's Like to Use VR	321
4.3.2 English Interface	330
4.3.3 Attitude Towards VR Painting	331
4.3.4 Features of VR Technology	336
4.3.5 Status Quo	341
4.3.6 Operating Condition	348
4.3.7 Software Defect	352
4.3.8 Hardware Defect	360
4.3.9 Improvement	364
4.3.10 Self-Evaluation of Work	374
4.3.11 Attitude Towards VR Paintings	380

4.3.12 Artwork Showcase	384
4.3.13 Exhibition Information	398
4.4 Research Question Three	399
4.4.1 Structure and Perspective	401
4.4.2 Modeling Ability	414
4.4.3 Sense of Wholeness and Space	426
4.4.4 Texture	443
4.4.5 Detail	457
4.5 Summary	480

CHAPTER 5 DISCUSSION

5.1 Introduction	482
5.2 Finding of Research Question 1	483
5.2.1 Virtual Reality	484
5.2.1.1 Quest 2	485
5.2.1.2 Pico	489
5.2.1.3 Virtual Reality Devices Are Suitable for People Over 40 Years of Age	492
5.2.1.4 Painting VR	493
5.2.1.5 Selection of External and All-In-One Devices	496
5.2.1.6 Operating Environment	499
5.2.1.7 Duration of Use and Relaxation Methods	501
5.2.2 Sketch	505

5.2.2.1 Criteria for Judging Still Life Sketches	505
5.2.2.2 Techniques, Tools and Emotions, Thoughts	508
5.2.2.3 Teaching Content and Objectives	510
5.3 Finding of Research Question 2	512
5.3.1 Feelings of Painting with Virtual Reality Devices	513
5.3.2 Defects in Hardware and Software	516
5.3.3 Directions for Improvement	522
5.3.4 Attitudes Towards the Final Product	526
5.4 Finding of Research Question 3	529
5.4.1 Discussion on the Five Core Elements	530
5.4.2 Design of the Assessment Scale	532
5.4.3 Implications of Standardized Assessment Scales for the Identification of Works of Art	534

CHAPTER 6 CONCLUSION

6.1 Introduction	541
6.2 Potential Contribution	542
6.3 Study Implication	543
6.3.1 Significance and Implications of the Research Findings	543
6.3.2 Implications of Judgement Criteria for Still Life Sketching in a VR Environment	546
6.4 Limitations	547
6.5 Impact	549
6.6 Future	550

6.6.1 Emerging Issues Raised	551
6.6.2 Future Work	553
6.7 Conclusion	555
REFERENCES	557
APPENDIX	596

LIST OF TABLES

Table No.		Page
2.1	Information of Past Studies Reviewed	132
3.1	Profile of VR Experts (n = 5)	162
3.2	Profile of Sketch Experts (n = 5)	162
3.3	Profile of Testers (n = 25)	163
3.4	Profile of Evaluation Experts (n = 3)	165

LIST OF FIGURES

Figure No.		Page
1.1	Conceptual Framework	15
2.1	Experiential Learning Cycle	69
2.2	Foundational Positions of Self-Directed Learning	76
2.3	Leonardo da Vinci, Submersible research and equipment and pumping units notes	109
2.4	Leonardo da Vinci, Tool other	109
2.5	Pietro Antonio Martini, View of the Salon of 1785	110
2.6	Charles Joseph Natoire, Life Class at the Royal Academy of Painting and Sculpture	119
2.7	Eugène Delacroix, Sketches of Tigers Delacroix, Sheet of Sketches for and Men in Sixteenth-Century Costume Palace	111
2.8	Eugène the Library of Luxembourg	112
2.9	Pablo Picasso, The Bull	112
2.10	Henri Matisse, Dancer	113
3.1	Research Procedures	169
4.1	Quest 2	320
4.2	Painting VR Interface	321

4.3	Painting VR	321
4.4	Example of the Painting VR Interface during use	324
4.5	Proportion of Positive and Negative Views on Using VR for Painting	325
4.6	Participants' Feedback on the English-Only Interface of VR Software	334
4.7	Distribution of Participant Attitudes Toward VR Painting	336
4.8	Proportion of Positive and Negative Views on Features of VR Technology in Artistic and Educational Contexts	341
4.9	Proportion of Positive and Negative Views on the Status Quo of VR with Counts	345
4.10	Proportion of Positive vs. Negative Views on the Operating Condition of VR Painting Technology	353
4.11	Feedback Analysis: Positive vs. Negative Views on Software Defects in VR Painting	357
4.12	Proportion of Positive vs. Negative Views on Hardware Defects (n = 9)	364
4.13	Self-Evaluation of Work: Positive vs. Negative Views	379
4.14	Attitudes towards VR Paintings	384
4.15	Artwork 1. Still-life VR painting produced using Painting VR.	389
4.16	Artwork 2. Still-life VR painting produced using Painting VR	390
4.17	Artwork 3. Still-life VR painting produced using Painting VR	390
4.18	Artwork 4. Still-life VR painting produced using Painting VR	391
4.19	Artwork 5. Still-life VR painting produced using Painting VR	391



4.20	Artwork 6. Still-life VR painting produced using Painting VR	392
4.21	Artwork 7. Still-life VR painting produced using Painting VR	392
4.22	Artwork 8. Still-life VR painting produced using Painting VR	393
4.23	Artwork 9. Still-life VR painting produced using Painting VR	393
4.24	Artwork 10. Still-life VR painting produced using Painting VR	394
4.25	Artwork 11. Still-life VR painting produced using Painting VR	394
4.26	Artwork 12. Still-life VR painting produced using Painting VR	395
4.27	Artwork 13. Still-life VR painting produced using Painting VR	395
4.28	Artwork 14. Still-life VR painting produced using Painting VR	396
4.29	Artwork 15. Still-life VR painting produced using Painting VR	396
4.30	Artwork 16. Still-life VR painting produced using Painting VR	397
4.31	Artwork 17. Still-life VR painting produced using Painting VR	397
4.32	Artwork 18. Still-life VR painting produced using Painting VR	398
4.33	Artwork 19. Still-life VR painting produced using Painting VR	398
4.34	Artwork 20. Still-life VR painting produced using Painting VR	399
4.35	Artwork 21. Still-life VR painting produced using Painting VR	399



4.36	Artwork 22. Still-life VR painting produced using Painting VR	400
4.37	Artwork 23. Still-life VR painting produced using Painting VR	400
4.38	Artwork 24. Still-life VR painting produced using Painting VR	401
4.39	Artwork 25. Still-life VR painting produced using Painting VR	401
4.40	Exhibition entrance display at Qigu Hall, Chengdu, featuring promotional poster for the VR Still-Life Drawing Showcase	402
4.41	Close-up view of the exhibition poster detailing the VR Still-Life Drawing Showcase on display in Pengzhou County, Chengdu	403
4.42	Expert panel evaluating displayed VR still-life sketches during the exhibition at Qigu Hall, Chengdu.	404
4.43	Positive and negative opinions by performance category (Expert 1)	405
4.44	Expert 2 Attitude Analysis on Structure and Perspective: Positive vs Negative Feedback	410
4.45	Expert 3 Evaluation: Positive and Negative Views by Level	414
4.46	Bar chart showing Expert 1's feedback on modeling ability across performance levels	419
4.47	Bar chart illustrating Expert 2's feedback on modeling ability, categorized by performance level	422
4.48	Bar chart illustrating Expert 3's evaluation of modelling ability, categorized by performance level	427
4.49	Expert 1's feedback on the sense of wholeness and space, categorized by performance level	431
4.50	Expert 2's feedback on the sense of wholeness and space, categorized by performance level	438

4.51	Expert 3's feedback on sense of wholeness and spatial expression across performance levels	442
4.52	Positive and Negative Views on Texture by Level	448
4.53	Positive and Negative Views on Texture Expression by Performance Level	452
4.54	Positive and Negative Views on Texture Expression by Evaluation Level	456
4.55	Positive and Negative Views on Detail by Evaluation Level	461
4.56	Positive and Negative Views on Detail at Different Rating Levels	468
4.57	Positive and Negative Views on Detail at Different Rating Levels	476
5.1	Quest 2	489
5.2	Pico 4 VR Headset and Key Features	494
5.3	Painting VR Application Interface and Tools	498
5.4	Examples of All-in-One VR Headsets (e.g., Quest 2, Pico 4)	500
5.5	External VR Setup Requiring High-Performance PC and Tracking Systems	501



LIST OF APPENDICES

- A** Human Research Ethics Online Workshop
- B** Letters of Engagement of Experts
- C** Lesson Plans
- D** VR Tutorials
- E** Q1 Q2 Interview Questions
- F** Elements of Q1-Q3 Interviews and Assessments
- G** RQ3 Q3 Content of the Assessment



CHAPTER 1

INTRODUCTION

1.1 Introduction

Against the backdrop of the COVID-19 pandemic in China, the pressing need for the integration of technology has emerged as the prevailing solution across all levels of education, spanning from primary to tertiary (Jain et al., 2020). Significantly, the shift in pedagogical approach faced a noteworthy obstacle in the form of experienced educators who, as a result of their limited technological competence, encountered difficulties in efficiently utilizing technology for pedagogical objectives. In conjunction with these advancements, it is noteworthy to highlight that the Ministry of Education in China has recently introduced a comprehensive proposal that espouses the integration



of technology across various academic disciplines (Mei & Symaco, 2020). Consequently, this initiative heralds the advent of an era characterized by pedagogical practices that are imbued with technological enhancements, thereby catering to the needs and demands of the 21st century. In the present contextual framework, this study undertakes a meticulous exploration of the multifaceted implications that arise from the utilization of VR technology in relation to the acquisition of knowledge and competencies within the domain of still life sketch. The focus of this inquiry revolves around MianYang Teachers' College, an esteemed educational establishment located in the province of Sichuan, China.

The discipline of still life sketch holds a significant position within the educational framework of MianYang Teachers' College (Sabol, 2021). It serves as a fundamental academic course designed to cultivate cohorts of individuals who possess exceptional technical skills and aesthetic sensibilities in the field of still life sketch. Throughout numerous decades, the educational terrain within this field has predominantly conformed to conventional pedagogical approaches that heavily rely on traditional instructional methods, employing tools such as paper and pencils (Huerta et al., 2019). Nevertheless, this traditional method, despite its inherent stability, presented significant disadvantages in the form of prolonged time commitments and substantial financial expenditures (Bowen & Hua, 2021). It is worth noting that even the slightest errors within this conventional method required a comprehensive reset, thereby intensifying both temporal inefficiencies and economic expenses. Considering the prevailing



advancements in technology across various domains, it is noteworthy that the field of still life sketch has exhibited a distinct vulnerability to these inefficiencies. Consequently, the present study posits the incorporation of VR technology as a prominent solution to address these pedagogical constraints, mirroring a wider pattern observed in modern education wherein VR is gaining prominence as a subject of scholarly scrutiny.

1.2 Study Background

Amidst the extraordinary circumstances of the COVID-19 pandemic, the Ministry of Education in China implemented a significant and far-reaching change in the realm of education (Onyeaka et al., 2021). This change involved the introduction of technology-driven online learning as a strategic approach to ensure educational continuity in the midst of adversity (Looi et al., 2022). Nevertheless, this laudable endeavor was not devoid of its share of obstacles. It is apparent that a notable group of experienced educators encountered the challenge of adapting to unfamiliar technological terrain, as they grappled with the complexities of online pedagogy resulting from a noticeable deficiency in technological proficiency (Baroni et al., 2019). Simultaneously, the expeditious progression of technology has propelled the inevitable assimilation of digital tools into the pedagogical process, surpassing the acute phase of the pandemic and transitioning into an endemic scenario where the centrality of technology remains



steadfast.

In the context of present-day society, it is evident that the younger generation, who have grown up in a digital environment, possess an inherent understanding of the profound influence exerted by state-of-the-art technologies (Szymkowiak et al., 2021). They readily adopt these technologies to augment diverse aspects of their everyday existence. Therefore, it is imperative that the educational environment aligns itself with this trans-formative change, incorporating technology as a central conduit for dissemination (Viswanathan, 2023). Nevertheless, it is imperative to acknowledge that empirical evidence (Ma et al., 2021; Coman et al., 2020) derived from prior research highlights a pivotal subtlety. The primary obstacle hindering the smooth integration of technology does not originate from the students' inherent abilities, but rather from the technological competence of experienced still life sketch teachers, specifically those who are aged 40 and beyond. The present predicament can be traced back to a bygone era marked by the conspicuous absence of ubiquitous technological advancements. Educators belonging to this demographic were prepared during a time period characterized by conventional instructional approaches, which were disconnected from the technological advancements that define the current educational environment (Doering et al., 2003). Henceforth, the process of familiarizing oneself with technological tools, including but not limited to laptops, PowerPoint presentations, and word processing software, is observed to be a gradual and laborious endeavor (Gao & Zhang, 2020). The temporal delay in acquiring proficiency in these technologies



frequently gives rise to a discrepancy, wherein the technology that has been mastered promptly becomes antiquated as the trajectory of technology progresses.

Given the intricate nature of these intricacies, the current study directs its attention towards elder still life sketch teachers, duly recognizing their distinct position in effectively navigating the ever-evolving convergence of technology and pedagogy. In the present context, it is worth noting that still life sketch operates as an artistic domain firmly situated within the contemporary art and design paradigm (Sullivan, 2010). Consequently, it assumes a pivotal role as a vantage point for the purpose of exploration. The field of still life sketch, known for its reliance on the traditional symbiosis of paper and pen, finds itself at a critical crossroads where established practices intersect with disruptive digital alternatives. Significantly, the emergence of the iPad, endowed with advanced drawing functionalities, has fundamentally transformed the artistic domain, thereby revolutionizing the efficacy and seamless nature of creative pursuits (Detweiler, 2013). The technological-induced transition serves as a compelling case study that exemplifies the harmonious amalgamation of conventional artistic principles and modern technological instruments. This synthesis encapsulates the overarching narrative of the educational realm's progression within the digital era.

At the heart of this trans-formative process lies VR, an emerging technology that is positioned to instigate profound changes in pedagogical methodologies (Earle & Leyva-de la Hiz, 2021). The potential of VR to deeply engage users within virtual



environments, in conjunction with the simultaneous advancements of augmented reality (AR), mixed reality (MR), and extended reality (XR), signifies an inescapable integration of VR into the realm of education (Rauschnabel et al., 2022). This integration mirrors the overarching societal shift towards a technology-centric way of life. In the present context, the research endeavor aligns itself with the pragmatic considerations encompassing temporal constraints, financial limitations, feasibility assessments, and the effectiveness of proposed interventions. VR is recognized as a trans-formative medium that enables experienced still life sketch teachers to autonomously acquire proficiency in still life sketch, thereby positioning themselves to effectively impart crucial skills to future generations.



In summary, the present study amalgamates the inherent and extraneous dynamics encompassing technology, pedagogy, and artistic progression. The proposition posits that in light of technology's increasingly influential role in shaping the trajectory of education, it is of utmost importance for experienced educators to promptly adopt tools such as VR. This adoption is crucial in order to effectively navigate the divide between traditional teaching methods and modern pedagogical frameworks. In the context of this endeavor, the amalgamation of still life sketch and VR manifests as a complex interconnection, serving as a prime illustration of the seamless fusion between conventional artistic ingenuity and forward-thinking advancements. This amalgamation holds the potential to significantly enhance the educational encounters of future cohorts.





1.3 Problem Statement

The underlying rationale behind the current study is to address a multifaceted array of challenges that have surfaced in the realm of education. Foremost among these concerns is the pronounced deficiency in technological adeptness observed among senior educators, which poses a formidable obstacle to the effective implementation of online learning strategies in the context of the COVID-19 pandemic (Baroni et al., 2019). While the focal point of this study is not centered on online learning per se, the crux of the matter revolves around the imperative need to bolster the technological competence of these elder teachers. This necessity becomes especially apparent when considering the expanding chasm between their proficiency and the escalating technological demands of contemporary education (Viswanathan, 2023). In an era where technology has seamlessly woven itself into the fabric of everyday existence, the field of education is no exception. It follows that these experienced still life sketch teachers bear the responsibility of equipping the younger generation with skills that are oriented toward the future, rather than tethered to the past (Islind & Norström, 2020).

Furthermore, it is noteworthy that the Ministry of Education in China has underscored the pivotal role of technological integration within the educational landscape (Mei & Symaco, 2020). This directive, however, encounters a poignant challenge within smaller regions such as MianYang, where the experienced still life sketch teachers grapple with technology's intricacies. Their unfamiliarity with the





technological landscape, particularly in the domains of Augmented Reality (AR), Mixed Reality (MR), and Extended Reality (XR), renders the feasibility of such advanced tools questionable (Sherriff et al., 2023). Consequently, the present study strategically focuses on a foundational yet sophisticated technology: VR. By doing so, the researcher acknowledges the requisite balance between technological progression and the capacity for meaningful adoption, especially within contexts marked by unique challenges.

To elucidate further, a significant investment of time and resources is devoted to the realm of still life sketch (Bowen & Hua, 2021). Traditional tools like pens and paper bear witness to an inefficiency wherein even the slightest errors precipitate their disposal. This inherent inefficiency is not only ecologically burdensome but also profoundly frustrating. The introduction of VR, however, introduces a trans-formative dynamic (Leng et al., 2019). Through this technology, the rectification of errors becomes a seamless and expeditious process, thereby engendering a heightened efficiency within the sphere of still life sketch. This trans-formative potential presents a cogent argument for the adoption of VR within educational paradigms, promising to reshape the very foundations of how learning support is administrated.



1.4 Study Purpose

The present study endeavors to explore the implications of VR technology on the acquisition of knowledge and skills of still life sketch at MianYang Teachers' College, located in the province of Sichuan, China.

1.5 Research Objectives

The primary aims of this study encompass three key objectives:

1. To identify the optimal VR equipment and software that are most conducive to facilitating effective learning routines within the context of still life sketch.
2. To analyse the specific experiences encountered when utilizing the chosen VR equipment and software for self-directed still life sketch learning.
3. To critically evaluate the still life sketch outcomes that are generated through the utilization of the selected VR equipment and software.



1.6 Research Questions

This present study encompasses three main research questions:

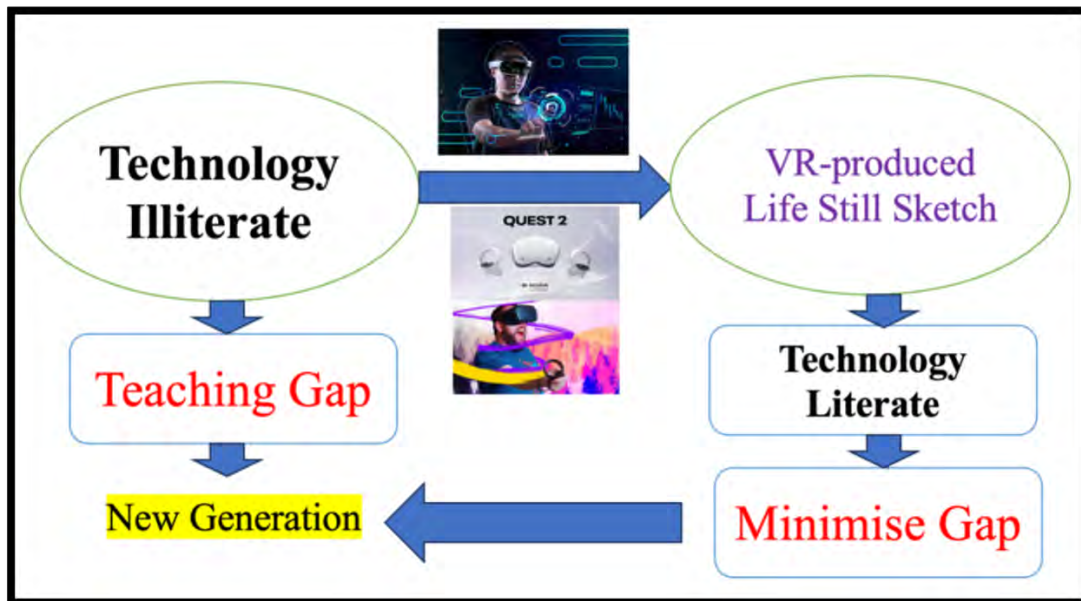
1. What is the optimal VR equipment and software that are most conducive to facilitating effective learning routines within the context of still life sketch?
2. What are the specific experiences encountered when utilizing the chosen VR equipment and software for self-directed still life sketch learning?
3. How can the still life sketch outcomes be critically evaluated when utilizing the selected VR equipment and software?



1.7 Conceptual Framework

In the current study, the researcher has formulated and subsequently depicted a conceptual framework.



Figure 1.1*Conceptual Framework*

Upon careful examination of Figure 1.1, it becomes evident that elder still life sketch teachers at MianYang Teachers' College exhibit a restricted level of technological competence. The observed discrepancy in technological proficiency gives rise to a notable disparity in their capacity to meaningfully interact with the technologically savvy younger cohort. In order to reconcile this incongruity, VR emerges as a promising resolution, leveraging the QUEST 2 hardware and the PAINTING BRUSH software, thereby empowering these experienced still life sketch teachers to augment their pedagogical methodology through the integration of technology. Consequently, harnessing the potential of VR technology, the individuals collaboratively embarked upon a virtual reality undertaking, culminating in the development of still life sketch utilizing this pioneering medium.

The focal point of the anticipations pertaining to the outcomes of this study revolves around a significant alteration in the technological literacy exhibited by the elder still life sketch teachers who are actively involved in the research. It is postulated that the individuals' engagement with VR technologies will not only serve to enhance their proficiency but also equip them with a heightened level of technological acumen. The phenomenon possesses the inherent capacity to ameliorate the schism in educational attainment that currently separates individuals of older generations from their more technologically adept counterparts. By means of narrowing this pedagogical disparity, elder still life sketch teachers possess the capacity to effectively facilitate the transmission of indispensable life skills knowledge, thereby guaranteeing its resonance within the present-day milieu characterized by the widespread proliferation of technology.

1.8 Operational Definition

This study operationalizes two definitions, namely those pertaining to VR technology and still life sketch.

1.8.1 VR Technology

The persistent challenge of conceptually delineating VR has been a topic of ongoing discussion since its inception, owing to its dynamic and continuously evolving nature. The perceptual paradigm of VR during the 1960s presents a notable juxtaposition when compared to its current manifestation in the 2020s, as theorized by esteemed scholars Wohlgenannt et al. (2020). The concept of VR encompasses a range of technologies, which can be understood as a comprehensive collection rather than an exhaustive one. These technologies include virtual worlds, massive multiplayer online role-playing games, virtual collaborative domains, cave automatic virtual environments, static VR achieved through smartphones, and head-mounted displays (Savickaite et al., 2022).

The terminology VR was first introduced into the vernacular of nascent digital environments, with Jaron Lanier being commonly attributed as its originator during the 1980s (Lanier, 2017). Nevertheless, notwithstanding an initial upsurge in popularity during the 1980s and 1990s, the adoption of VR experienced a gradual decline as a result of the limited availability of accessible technology and the subsequent exorbitant costs associated with it. Within the framework of this present study, it is pertinent to note that the designation VR encompasses not only the physical equipment, namely the QUEST 2 equipment, but also the software application known as PAINTING BRUSH. These technological tools have been deliberately utilized to foster self-directed acquisition of still life sketch among senior educators at MianYang Teachers' College.



1.8.2 Still Life Sketch

In the domain of still life sketch, the discourse surrounding the subject matter posits that the exposition proffered by conventional still life sketch methodologies can be assiduously fashioned by means of multifarious perspectives, encompassing spatial orientation, luminosity dynamics, contour articulation, and other related aspects (Gao et al., 2020). The complex process of sculpting is then meticulously transferred onto paper, utilizing instruments that produce monochromatic representations. The complexity of this elaborate process serves to emphasize the inherent elements of interpretive stylistic characteristics deeply embedded within the domain of conventional sketching. Furthermore, within the broader context of sketching, still life sketch assumes the pivotal position of a fundamental pedagogical field specifically designed for individuals who are in the early phases of their involvement with the subject matter.

Moreover, the concept of still life sketch, commonly known as traditional sketching, utilizes the inherent spatial characteristics of objects to proficiently communicate their tactile qualities. The utilization of the interplay between luminosity and obscurity, in conjunction with the seamless fusion of palpable and intangible elements, enables a comprehensive exploration of the fundamental principles that govern the structure and form of objects (Ban & Hyun, 2020). It is of utmost importance to underscore that, within the confines of this study, still life sketch is precisely demarcated as the



customary and established practice of rendering stationary entities, such as bottles, plates, and fruits, through the medium of sketching. The practice is made possible by the implementation of advanced technology, namely the QUEST 2 device and the PAINTING BRUSH software, resulting in a novel amalgamation of conventional approaches and modern tools.

1.9 Limitations

In any scholarly inquiry, it is essential to acknowledge the limitations that may influence the scope, applicability, and generalizability of the research outcomes. Such limitations do not diminish the value of the study but instead provide transparency and context for interpreting the findings with appropriate caution. This section outlines two key aspects of limitation within the present investigation: the sampling environment, which highlights the institutional and regional context in which the research was conducted, and the research limitations, which address methodological constraints including sample size, site selection, and the choice of virtual reality tools and software. A clear understanding of these factors is crucial to appreciating the strengths and boundaries of the study's contributions.



1.9.1 Sampling Environment

As a provincial - administered undergraduate institution in Sichuan Province not among the "Double First - Class" universities, it ranks at a medium level among provincial - level higher - education institutions in terms of educational level, resource acquisition, and policy support. This "neither - top - nor - bottom" intermediate position makes it an ideal entry point for observing the development trends of the "mid - tier forces" in China's higher education. From a spatial perspective, its characteristics in student source structure (85% from the southwestern region), major setup (focusing on meeting the industrial needs of the Chengdu - Chongqing Twin - City Economic Circle), and service orientation (73% of school - enterprise cooperation projects in the past five years concentrated in Sichuan and Chongqing enterprises) systematically reflect the typical interaction patterns between local universities in the southwestern region and regional economic and social development. Conducting in - depth research on this type of university can avoid both the "data distortion" caused by special policy dividends of top - tier universities and the "abnormal fluctuations" of weak universities due to survival pressures, ensuring that the research data are closer to the normal development trajectory of ordinary undergraduate institutions in China. Such a sample - selection strategy provides a methodological reference for constructing a higher - education evaluation model with regional relevance.



1.9.2 Research Limitations

Every study is inherently accompanied by a set of inherent constraints, and this study is not exempt from such circumstances. The limitations necessitate careful contemplation, as they serve to provide a contextual framework for the research findings.

The primary focus of this study is limited to MianYang Teacher's College, specifically targeting a sample group consisting of 25 experienced teachers specializing in still life sketch. The insights and conclusions derived from this study possess immense value within the particular context of this institution. However, it is crucial to recognize that the scope for extensive generalization is constrained. The findings ought to be primarily interpreted in light of their relevance to the distinctive attributes of the research site in question. In order to enhance the resilience of the results and promote wider relevance, it would have been advantageous to incorporate a more heterogeneous array of research locations. Unfortunately, because of temporal limitations, the study was confined to a solitary research site, thereby restricting the breadth of its potential applicability.

Moreover, it is imperative to consider that the selection of VR equipment and software carries significant ramifications for the results of the research. In the present study, a discerning methodology was employed to carefully choose the most



economically viable VR equipment and effectively leverage cost-free software solutions. The utilization of this pragmatic methodology guarantees the preservation of financial feasibility in the research endeavor. However, it does impose a constraint on the potential range of outcomes that could be attained, as it precludes the utilization of more advanced and costly equipment. Utilizing sophisticated, commercially available software has the potential to yield outcomes that are characterized by enhanced intricacy and comprehensiveness. Nevertheless, due to the financial limitations inherent in the research, it was imperative to utilize QUEST2 and PAINTING BRUSH, albeit functional, tools that may not fully encompass the wide range of possibilities offered by more sophisticated alternatives.



Furthermore, it is important to note that the study's utilization of a comparatively small sample size consisting of only 25 elders still life sketch teachers present a constraint in relation to the statistical robustness of the findings. The utilization of the quantitative methodology in this study facilitates the extraction of significant insights. However, it is worth noting that a more expansive sample size would undoubtedly augment the accuracy and certainty with which the findings can be comprehended and extrapolated. The inherent nature of the quantitative approach inherently suggests the possibility of generalization. However, it is imperative to exercise caution when interpreting the broader implications of the study's findings due to the relatively modest sample size utilized in this particular investigation.





In summation, the constraints highlighted within this investigation collectively advocate for a nuanced interpretation of the research findings. It is of utmost importance to acknowledge the contextual limitations that have exerted influence upon the determination of research sites, equipment, and sample size. Although it is undeniable that these limitations are inherent to the study, it is imperative to emphasize that they do not in any manner detract from the profound significance of the insights derived from this investigation. In contrast, it is the contention of the authors to underscore the imperative of a judicious implementation of the research outcomes, while adhering strictly to the confines demarcated by the study's parameters. In light of the ever-changing academic landscape, it is imperative that future research endeavors capitalize on these valuable insights, effectively addressing the identified limitations and thereby broadening the frontiers of knowledge within this particular domain.

1.10 Significance of the Study

The present study carries substantial ramifications within the domain of education. First and foremost, this study functions as a crucial point of reference for experienced educators operating within the realm of still life sketch. It provides invaluable perspectives on the successful incorporation of technology, particularly VR, in order to augment their pedagogical approaches. The augmentation serves to not only empower educators of advanced age in enhancing their instructional methodologies but also



serves as a means to bridge the gap between different generations in terms of educational approaches.

One must acknowledge the significant implication that arises from this study, which pertains to the enhancement of the esteemed reputation of MianYang Teachers' College. The institution's academic leadership could consider the integration of VR technology within the still life sketch courses. Through the implementation of VR, the institution may effectively demonstrate its unwavering dedication to enhancing the educational trajectory for both students and experienced still life sketch teachers, thereby augmenting the overarching educational achievements. The strategic investment in VR is in accordance with current educational paradigms, promoting an immersive and captivating learning environment.

Moreover, this study fortifies the potentiality of advocating for more extensive educational transformations on a regional, state, or even national scale. It is within the realm of possibility to articulate the efficacious outcomes that ensue from the utilization of VR technology in the domains of still life sketch to the pertinent governing bodies, including but not limited to the District, State, or National Ministry of Education. The advocacy has the potential to be channeled into a comprehensive proposal that aims to explicate the substantive impact of VR integration on pedagogical effectiveness and learner engagement. The primary aim at hand is to acquire financial resources for forthcoming research undertakings within the realm of technology-infused pedagogy

and educational enhancement.

A crucial aspect of this study entails the allocation of resources towards the augmentation of educational infrastructure. The procurement of VR equipment for pedagogical objectives represents a palpable embodiment of this undertaking. Through the integration of technological innovation within the educational sphere, institutions cultivate an atmosphere that is conducive to the facilitation of comprehensive and experiential learning. The initiative surpasses conventional limitations and provides empirical evidence of a forward-thinking dedication to the advancement of pedagogical methodologies.

 05-4506832  pustaka.upsi.edu.my  Perpustakaan Tuanku Bainun
Kampus Sultan Abdul Jalil Shah  PustakaTBainun  ptbupsi

The output of this research is of great significance in multiple aspects. It provides reference suggestions for still - life sketch educators on applying VR technology to improve teaching, helping them enhance teaching quality. Meanwhile, it offers ideas for Mianyang Teachers' College to introduce VR technology into its courses, thus promoting the educational development of the institution. In addition, it provides a theoretical basis for promoting educational reforms on a broader scale and obtaining funding for research on the integration of technology and teaching, facilitating further progress in the integration of technology and teaching within the field of education.

In summary, this study not only acts as a fundamental basis for experienced educators to effectively utilize VR in their self-learning but also emphasizes the

necessity for educational establishments to adopt innovative technologies that bring about significant changes. Through the endorsement of VR integration within educational frameworks, institutions not only enhance their academic standing but also make a valuable contribution to the wider discussion surrounding the mutually beneficial connection between technology and pedagogy. The anticipated ripple effects encompass not solely the enhancement of instructional efficacy, but also the fostering of a technologically proficient cohort of learners primed for the complexities of the digital era.

1.11 Summary

The present chapter encapsulates the central focal points of the study, providing a succinct and clear conceptual framework. The text elaborates on essential components such as the overall purpose of the research, clearly defined objectives, and crucial inquiries. It also acknowledges the inherent limitations of the study and emphasizes its consequential significance, all of which are considered indispensable within the scholarly discourse.