The copyright © of this thesis belongs to its rightful author and/or other copyright owner. Copies can be accessed and downloaded for non-commercial or learning purposes without any charge and permission. The thesis cannot be reproduced or quoted as a whole without the permission from its rightful owner. No alteration or changes in format is allowed without permission from its rightful owner.



## MOBILE LEARNING EXPERIENCE AND SELF-DIRECTED LEARNING READINESS ON MOBILE TASK-BASED ACTIVITY PERFORMANCE: A CASE STUDY AMONG POSTGRADUATE STUDENTS



DOCTOR OF PHILOSOPY UNIVERSITI UTARA MALAYSIA 2022



Awang Had Salleh Graduate School of Arts And Sciences

Universiti Utara Malaysia

### PERAKUAN KERJA TESIS / DISERTASI

(Certification of thesis / dissertation)

Kami, yang bertandatangan, memperakukan bahawa (We, the undersigned, certify that)

#### MALINI A/P THIAGRAJ

calon untuk ljazah (candidate for the degree of) PhD

telah mengemukakan tesis / disertasi yang bertajuk: (has presented his/her thesis / dissertation of the following title):

#### "MOBILE LEARNING EXPERIENCE AND SELF-DIRECTED LEARNING READINESS ON MOBILE TASK-BASED ACTIVITY PERFORMANCE: A CASE STUDY AMONG POSTGRADUATE STUDENTS"

seperti yang tercatat di muka surat tajuk dan kulit tesis / disertasi. (as it appears on the title page and front cover of the thesis / dissertation).

Bahawa tesis/disertasi tersebut boleh diterima dari segi bentuk serta kandungan dan meliputi bidang ilmu dengan memuaskan, sebagaimana yang ditunjukkan oleh calon dalam ujian lisan yang diadakan pada : **19 Mei 2021**.

That the said thesis/dissertation is acceptable in form and content and displays a satisfactory knowledge of the field of study as demonstrated by the candidate through an oral examination held on: 19 May 2021.

| Pengerusi Viva:<br>(Chairman for VIVA)                               | Assoc. Prof. Ts. Dr. Arumugam a/l Raman | Tandatangan A              |
|--|---|----------------------------|
| Pemeriksa Luar:<br>(Extemal Examiner)                                | Prof. Dr. Nor Aziah Alias               | Tandatangan<br>(Signature) |
| Pemeriksa Dalam:<br>(Intemal Examiner)                               | Assoc. Prof. Dr. Hasniza Nordin         | Tandatangan<br>(Signature) |
| Nama Penyelia/Penyelia-penyelia:<br>(Name of Supervisor/Supervisors) | Prof. Dr. Abdul Malek Hj Abdul Karim    | Tandatangan                |
| Tarikh:<br>(Date) <b>19 May 2021</b>                                 |   |                            |

### **Permission to Use**

In presenting this thesis in fulfilment of the requirements for a postgraduate degree from Universiti Utara Malaysia, I agree that the Universiti Library may make it freely available for inspection. I further agree that permission for the copying of this thesis in any manner, in whole or in part, for scholarly purpose may be granted by my supervisor(s) or, in their absence, by the Dean of Awang Had Salleh Graduate School of Arts and Sciences. It is understood that any copying or publication or use of this thesis or parts thereof for financial gain shall not be allowed without my written permission. It is also understood that due recognition shall be given to me and to Universiti Utara Malaysia for any scholarly use which may be made of any material from my thesis.

Requests for permission to copy or to make other use of materials in this thesis, in whole or in part, should be addressed to:

Dean of Awang Had Salleh Graduate School of Arts and Sciences UUM College of Arts and Sciences Universiti Utara Malaysia 06010 UUM Sintok

### Abstrak

Peranti mudah alih mempunyai pelbagai potensi besar terutama menyediakan kemudahan mengakses maklumat tanpa batasan dan pembelajaran kendiri kepada para pelajar. Tujuan kajian ini adalah untuk mengenal pasti pengalaman para pelajar pascasiswazah melakukan aktiviti berasaskan tugasan peranti mudah alih dan kesediaan pembelajaran arahan kendiri. Aktiviti berasaskan tugasan peranti mudah alih ini merupakan amalan pengajaran yang menggabungkan pembelajaran dan penilaian. Penyelidik mengunakan persampelan bertujuan seramai 34 pelajar pascasiswazah dari sebuah universiti awam di Malaysia. Penyelidik menggunakan reka bentuk kajian bertumpu selari dengan gabungan data kualitatif dan kuantitatif untuk tujuan triangulasi. Data kuantitatif dikumpulkan melalui soal selidik atas talian, dan penilaian berasaskan peranti mudah alih. Data dari soal selidik dianalisis menggunakan statistik deskriptif, dan analisis ujian t-sampel berpasangan, manakala penilaian berasaskan peranti mudah alih dianalisis menggunakan rubrik. Data kualitatif dikumpulkan melalui buku-log pembelajaran, penulisan reflektif, dan temubual separa berstruktur, dan seterusnya dianalisis secara tematik. Hasil kajian dari analisis statistik deskriptif menunjukkan pengetahuan pembelajaran terdahulu serta pengalaman pelajar mengunakan teknologi peranti mudah alih adalah kurang. Walau bagaimanapun, hasil kajian pasca membuktikan pelajar yang menggunakan komputer riba, and telefon pintar untuk aktiviti berasaskan tugasan peranti mudah alih menjadi lebih berpengalaman. Ujian pemeringkatan bertanda Wilcoxon menunjukkan bahawa ujian post kesediaan pembelajaran arahan kendiri di kalangan pelajar adalah signifikan daripada ujian pre. Penilaian berasaskan peranti mudah alih mendedahkan bahawa pelajar mempunyai tahap prestasi yang maju dan mahir. Oleh itu, kajian ini menunjukkan bahawa aktiviti berasaskan teknologi mudah alih mempunyai keupayaan untuk meningkatkan dan memperbaiki pengalaman pembelajaran pelajar dengan cara yang bermakna dan pembangunan kemahiran pembelajaran kendiri. Penemuan ini akan digunakan untuk kajian masa depan mengenai peranti mudah alih untuk tujuan pembelajaran dan penilaian. Implikasi kajian ini adalah memupuk pengalaman pelajar terhadap pembelajaran mudah alih yang bermakna dan kemahiran pembelajaran kendiri.

**Kata Kunci:** Peranti mudah alih, Pengalaman M-pembelajaran, Aktiviti berasaskan tugasan peranti mudah alih, Kesediaan pembelajaran arahan kendiri.

### Abstract

Mobile devices have a wide array of capabilities, including accessing unlimited information and self-learning for students. This study aimed to identify postgraduate students' experiences performing task-based activities on mobile devices and preparing for self-directed learning. This mobile task-based activity is an educational practice that combines education and assessment. The researcher used a targeted sample of 34 postgraduates from a public university in Malaysia. This study used a mixed-method case study design with qualitative and quantitative data for triangulation. The researcher gathered quantitative data through online questionnaires and evaluations based on mobile devices. Questionnaire data were analyzed using descriptive statistics and paired t-sample analyses, while mobile-based assessments were analyzed using a rubric. Oualitative data were collected through learning logbooks, reflective writing, and semistructured interviews and analyzed thematically. The survey results of descriptive statistical analysis have shown that students' prior knowledge and learning experience using mobile technology is more modest. However, post-study findings prove that students who use laptops and smartphones for task-based activities on mobile devices gain more experience. The Wilcoxon Signed-Ranks test showed that students' post-test readiness for self-directed learning was more significant than the pre-test. Assessments of mobile devices indicate that students perform at an advanced and competent level. Thus, this study shows that mobile task-based activities can improve students' learning experiences in a significant way and develop self-directed learning skills. These results could assist further studies on mobile devices for learning and assessment purposes. The implications of this research are to cultivate students' experience of meaningful mobile learning and self-directed learning skills. Universiti Utara Malaysia

**Keywords:** Mobile device, Mobile learning experience, Mobile task-based activity, Self-directed learning readiness.

### Acknowledgement

I felt deeply delighted and emotional when writing this section as my five years of PHD journey reaching to end path. I felt fulfilling as I gave my fullest hard work, time, efforts, and age for this soulful search on knowledge acquisition. Completing this study is one of the great achievements in my life till to date. This achievement make me to feel proud and splendid at my own self. This journey not only uplift my self-confident but also enlighten me to be a positive oriented person and hardworking. There are many ups and downs yet I never ever felt to give up on this journey and now I am able to complete this thesis. This five years journey gave me great learning experience with beautiful memories which I will forever hold in my heart. I am deeply humble and grateful for everything revolved around me.

I could not able to complete this journey without support of some important persons in this journey. First and foremost, I want to express my heartfelt thanks and gratitude to my almighty God and Universe, for providing me the strength, perseverance, and wisdom for completing this journey. Next, my loving parents, Mr. Thiagaraj Kandasamy and Mrs. Kunavathy Suppramaniam. I always considered my parents as my living God, I am who I am because of them. My parents' unconditional love and support made me able to complete this thesis. Without them I am definitely nothing. Furthermore, I am grateful to my beloved husband, Mr. Logesvaran Gunasekharan and my daughter Aishwariyaa Logesvaran, my siblings, friends, and colleagues, who have given endless support. I sincerely appreciate their care and bountiful support for me to attain success in this study.

I extend my profound gratitude to my supervisors Prof. Dr. Abdul Malek Bin Hj. Abdul Karim and Prof. Dr. Arsaythamby Veloo for their relentless support, trust, detailed feedback and encouragement. Without your guidance, I probably would have been stuck in the abyss for eternity. My sincere thanks to them.

I thank Dr. Vinothini Vasodavan for the support in completing this study, always believing in me and always cheering me on. She is beyond my dearest friend. I sincerely appreciate her effort to be with me throughout this journey.

Finally, my appreciation also goes to Universiti Utara Malaysia (UUM), for providing me a quality learning environment for academic development and also the Ministry of Education Malaysia, for the generous financial support through the MyBrain15 research scholarship program. My gratitude to all the respondents and people whom have contributed directly or indirectly to the process of completing this thesis.

Thank you very much.





### Dedication

I dedicate this study to my beloved and beautiful parents, Mr. Thiagraj Kandasamy and Mrs. Kunavathy Suppramaniam, my better half, Mr. Logesvaran Gunasekharan, and my princess Aishwariyaa Logesvaran, who have always loved, encouraged, and supported me unconditionally. This journey won't be possible without unlimited support from my family members. You have been most amazing and important person in my entire life which I could ever ask for.

I love you dearly and forever.



# **Table of Contents**

| Abstrak                                  | iii  |
|--|------|
| Abstract                                 | iv   |
| Acknowledgement                          | v    |
| Dedication                               | vii  |
| List of Table                            | xiv  |
| List of Figure                           | XV   |
| List of Appendices                       | xvi  |
| List of Abbreviations                    | xvii |
| CHAPTER ONE : INTRODUCTION               | 1    |
| 1.1 Background of the Study              | 1    |
| 1.2 Problem Statement                    |      |
| 1.3 Research Objectives                  | 14   |
| 1.4 Research Questions                   | 15   |
| 1.5 Research Hypothesis                  |      |
| 1.6 Significance of the Study            |      |
| 1.7 Limitation of the research           |      |
| 1.8 Operational Definitions              |      |
| 1.8.1 Mobile Learning                    |      |
| 1.8.2 Massive Open Online Courses (MOOC) |      |
| 1.8.3 Mobile-based Assessment            |      |
| 1.8.4 Learning Experience                |      |
| 1.8.5 Self-Directed Learning (SDL)       |      |
| 1.8.6 Postgraduate Students              |      |

| 1.9 Conceptual Framework  | 29         |
|---|------------|
| 1.10 Conclusion   | 30         |
| CHAPTER TWO : LITERATURE REVIEW   | 31         |
| 2.1 Introduction  | 31         |
| 2.2 The Overview of Mobile Task-based Activity                                | 31         |
| 2.2.1 Designing Mobile Task-based Activity                                    | 38         |
| 2.2.2 Use of Mobile Devices to support Mobile Learning in Higher Education 4  | 12         |
| 2.2.3 Barriers on Mobile Task-based Activity5                                 | 50         |
| 2.3 Malaysian Students perceptions towards mobile device use                  | 50         |
| 2.4 Postgraduate Students Learning Experience on Mobile Learning              | 53         |
| 2.5 Prior Studies on Mobile Learning Experience on Mobile Task-based Activity | 58         |
| 2.6 Factors influence Self-directed Learning Readiness                        | 34         |
| 2.7 Reflection for Mobile Task-based Activity                                 | 92         |
| 2.8 Theories and Model used in Mobile Learning                                | )5         |
| 2.8.1 Rational Analysis of Mobile Education (FRAME) Model                     | )5         |
| 2.8.2 Independence Model  | <b>)</b> 9 |
| 2.8.3 Development of Theoretical Framework 10                                 | )3         |
| 2.9 Conclusion  | )7         |
| CHAPTER THREE : RESEARCH METHODOLOGY 10                                       | )8         |
| 3.1 Introduction  | )8         |
| 3.2 Research Design   | )8         |
| 3.3 Subject of Studies  | 1          |
| 3.4 Research Intervention   | 1          |
| 3.5 Quantitative  | 17         |
| 3.5.1 Web-based Survey Questionnaire11  | 17         |

| 3.5.2 Mobil-based Assessment   | 122   |
|--|-------|
| 3.5.3 Pilot Study  | 127   |
| 3.5.4 Data Analysis  | 130   |
| 3.6 Qualitative  | 131   |
| 3.6.1 Reflective Practices   | 132   |
| 3.6.2 Learning logbook   | 134   |
| 3.6.3 Semi-structured Interview  | 136   |
| 3.6.4 Pilot Study for Reflective Practices, Learning Logbook and Interview     | 138   |
| 3.6.5 Data Analysis  | 139   |
| 3.6.6 Data Preparation   | 143   |
| 3.6.7 Trustworthiness  | 147   |
| 3.7 Data Collection Procedure  | 149   |
| 3.7.1 Stage One: Mobile-based Learning   | 151   |
| 3.7.2 Stage Two: Mobile-based Assessment                                       | 155   |
| 3.7.3 Chronology of Events and Procedures                                      | 155   |
| 3.8 The Role of the Instructor and Educator                                    | 161   |
| 3.8.1 Instructor bias  | 163   |
| 3.9 Conclusion   | 165   |
| CHAPTER FOUR : FINDINGS  | 166   |
| 4.1 Introduction   | 166   |
| 4.2 Background Information of Postgraduate Students                            | 166   |
| 4.3 Do postgraduate students exhibit M-learning experience when completing a M | obile |
| Task-based Activity?   | 167   |
| 4.3.1 Mobile Learning Experience on MOOC Context                               | 168   |
| 4.3.2 Mobile Learning Experiences on Social Media Use and Experience           | 171   |

| 4.3.3 Mobile Learning Experiences on Mobile Device Use and Experience   | 72   |
|---|--|
| 4.3.4 Findings17  | 74   |
| 4.4 How do postgraduate students use mobile devices during a Mobile Task-based  |  |
| Activity?17   | 75   |
| 4.4.1 Device Used   | 76   |
| 4.4.2 Mobile Learning Elements  | 80   |
| 4.4.3 Mobile-based Assessment Elements  | 84   |
| 4.4.4 Findings  | 85   |
| 4.5 Does postgraduate students' SDL readiness affect the completion of a Mobile Task-   |  |
| based Activity?   | 86   |
| 4.5.1 Normality Test  | 86   |
| Ho (1): There is no effect on students self-control in Self Directed Learning   |  |
| readiness on completing the Mobile Task-based Activity  | 87   |
| Ho (2): There is no effect on students Self-management in Self-Directed Learning  |  |
|   |  |
| Readiness on completing the Mobile Task-based Activity  | 88   |
| Readiness on completing the Mobile Task-based Activity  | 88   |
| Readiness on completing the Mobile Task-based Activity  | 88<br>88                                     |
| Readiness on completing the Mobile Task-based Activity.    18      Ho (3): There is no effect on students desire for learning in Self Directed Learning      Readiness on completing the Mobile Task-based Activity.    18      4.5.2 Finding    18   | 88<br>88<br>89                               |
| Readiness on completing the Mobile Task-based Activity.    18      Ho (3): There is no effect on students desire for learning in Self Directed Learning      Readiness on completing the Mobile Task-based Activity.    18      4.5.2 Finding.    18      4.6 What are the levels of M-learning experience and SDL readiness among  | 88<br>88<br>89                               |
| Readiness on completing the Mobile Task-based Activity.    18      Ho (3): There is no effect on students desire for learning in Self Directed Learning      Readiness on completing the Mobile Task-based Activity.    18      4.5.2 Finding.    18      4.6 What are the levels of M-learning experience and SDL readiness among postgraduate students?    18   | 88<br>88<br>89<br>89                         |
| Readiness on completing the Mobile Task-based Activity.    18      Ho (3): There is no effect on students desire for learning in Self Directed Learning    18      Readiness on completing the Mobile Task-based Activity.    18      4.5.2 Finding    18      4.6 What are the levels of M-learning experience and SDL readiness among    18      9    18      4.6.1 Findings.    18   | 88<br>88<br>89<br>89<br>93                   |
| Readiness on completing the Mobile Task-based Activity.    18      Ho (3): There is no effect on students desire for learning in Self Directed Learning    18      Readiness on completing the Mobile Task-based Activity.    18      4.5.2 Finding    18      4.6 What are the levels of M-learning experience and SDL readiness among    18      9    18      4.6.1 Findings    19      4.7 Which factors influence the M-learning experience of postgraduate students?    19   | 88<br>88<br>89<br>89<br>93<br>94             |
| Readiness on completing the Mobile Task-based Activity.    18      Ho (3): There is no effect on students desire for learning in Self Directed Learning      Readiness on completing the Mobile Task-based Activity.    18      4.5.2 Finding    18      4.6 What are the levels of M-learning experience and SDL readiness among      postgraduate students?    18      4.6.1 Findings.    19      4.7 Which factors influence the M-learning experience of postgraduate students?    19      4.7.1 New Learning and Assessment Experience    19   | 88<br>88<br>89<br>93<br>94<br>95             |
| Readiness on completing the Mobile Task-based Activity.    18      Ho (3): There is no effect on students desire for learning in Self Directed Learning      Readiness on completing the Mobile Task-based Activity.    18      4.5.2 Finding.    18      4.6 What are the levels of M-learning experience and SDL readiness among    18      90stgraduate students?    18      4.6.1 Findings.    19      4.7 Which factors influence the M-learning experience of postgraduate students?    19      4.7.1 New Learning and Assessment Experience    19      4.7.2 Benefits of Mobile Task-based Activity    19                            | 88<br>88<br>89<br>93<br>94<br>95<br>97       |
| Readiness on completing the Mobile Task-based Activity.    18      Ho (3): There is no effect on students desire for learning in Self Directed Learning      Readiness on completing the Mobile Task-based Activity.    18      4.5.2 Finding    18      4.6 What are the levels of M-learning experience and SDL readiness among      postgraduate students?    18      4.6.1 Findings.    19      4.7 Which factors influence the M-learning experience of postgraduate students?    19      4.7.1 New Learning and Assessment Experience    19      4.7.2 Benefits of Mobile Task-based Activity    19      4.7.3 Personal Feeling    20 | 88<br>88<br>89<br>93<br>94<br>95<br>97<br>00 |

| 4.7.5 Social interaction   | 205   |
|--|-------|
| 4.7.6 Empowering Devices   | 206   |
| 4.7.7 Findings   | 208   |
| 4.8 Which factors influence the SDL readiness of postgraduate students, based or | their |
| M-learning experience?   | 209   |
| 4.8.1 Self-control   | 210   |
| 4.8.2 Self-management  | 215   |
| 4.8.3 Desire for learning  | 221   |
| 4.8.4 Findings   | 224   |
| 4.9 Which barriers inhibit the M-learning experience and SDL readines            | ss of |
| postgraduate students during Mobile Task-Based Activities?                       | 225   |
| 4.9.1 Barriers on Mobile Task-based Activity                                     | 226   |
| 4.9.2 Inhibited Facet for Mobile Learning Experiences                            | 233   |
| 4.9.3 Inhibited Facet for Self-directed Learning Readiness                       |       |
| 4.9.4 Findings   | 244   |
| 4.10 Reflection of Instructor  | 244   |
| 4.11 Triangulation of Qualitative and Quantitative Data                          |       |
| 4.12 Summary   | 254   |
| CHAPTER FIVE : DISCUSSION AND CONCLUSION   | 255   |
| 5.1 Introduction   | 255   |
| 5.2 Summary of Study   | 255   |
| 5.3 Discussion   | 257   |
| 5.3.1 Students Mobile Learning Experiences on Mobile Task-based Activity         | 257   |
| 5.3.2 Students Mobile Devices used on Mobile Task-based Activity                 | 258   |
| 5.3.3 Effect of Students Self-directed Learning Readiness on completing          | g the |
| Mobile Task-based Activity   | 260   |

| 7   | APPENDIX  | 342 |
|-----|---|-----|
| 6   | REFERENCES  | 308 |
| 5.6 | Conclusion  | 306 |
|     | 5.5.3 Practical contribution  | 303 |
|     | 5.5.2 Methodological contribution   | 301 |
|     | 5.5.1 Theoretical contribution  | 300 |
| 5.5 | Contribution of the study   | 299 |
|     | 5.4.2 Practical implications and recommendation                                   | 289 |
|     | 5.4.1 Theoretical Implications and Recommendations                                | 285 |
| 5.4 | Implication of the study  | 285 |
|     | Readiness of Postgraduate Students during   | 274 |
|     | 5.3.7 Barriers that inhibit Mobile Learning Experiences and Self-directed Learnin | g   |
|     | 5.3.6 Factors influence Postgraduate Students Self-directed Learning Readiness    | 271 |
|     | 5.3.5 Factors influence the Mobile Learning Experiences of Postgraduate Students  | 264 |
|     | among Postgraduate Students.  | 262 |
|     | 5.3.4 Level of Mobile Learning Experience and Self-directed Learning Readines     | SS  |

## List of Table

| Table 2. 1 The Independence Model  |
|--|
| Table 3. 1 Mobile-based Assessment Descriptions and Rationalities                  |
| Table 3.3 Survey Questionnaire for Mobil Learning experience and Self-directed     |
| Learning Readiness   |
| Table 3. 4 Aborted and Retained Questionnaire Items 120                            |
| Table 3. 5 Cronbach's Alpha for Self-directed Learning Readiness                   |
| Table 3. 6 Rubric Performance Indicator 123  |
| Table 3. 7 Aborted and Retained Items for learning logbook 139                     |
| Table 3. 9 Description of Students Reflective Practices 144                        |
| Table 3. 10 Description of Students Learning Logbook. 144                          |
| Table 3. 11 Description of Semi-structured Interview Respondents 145               |
| Table 4. 1 Background Information on Postgraduate Students 167                     |
| Table 4. 2 Postgraduate Students M-learning experiences on MOOC context170         |
| Table 4. 3 Postgraduate Students Social Media Use and Experience                   |
| Table 4. 4 Postgraduate Students Mobile Device Use and Experience Section          |
| Table 4. 5 Themes for Device used, Mobile learning Course, and Mobile-based        |
| Assessment176  |
| Table 4. 6 Normality Test 186  |
| Table 4. 7 Wilcoxon Test for pre-test and post-test for Self-directed Learning     |
| Readiness  |
| Table 4. 8 Pre-test and Post-test Score for Self-control                           |
| Table 4. 9 Pre-test and Post-test for Self-management 188                          |
| Table 4. 10 Pre-test and Post-test for Desire for Learning188                      |
| Table 4. 11 Factor Influenced Students Experience on M-learning                    |
| Table 4. 12 Factor Influenced Students Self-directed Learning Readiness      209   |
| Table 4. 13 Barriers that inhibit M-learning experience and Self-directed learning |
| readiness on Mobile Task-based Activity226   |
| Table 4. 14 Students Score based on M-learning experience and SDL readiness        |
| on Mobile-based Assessment   |

# List of Figure

| Figure 1. 1: Conceptual Framework  |     |
|--|-----|
| Figure 2. 1: Reflective practices from Gibbs' Reflective Learning Cycle (1988) | 94  |
| Figure 3. 1: Case study mixed method design                                    | 110 |
| Figure 3. 2: The Stages of Mobile Task-based Activity                          | 112 |
| Figure 3. 7: Pre-test and Post-test  | 131 |
| Figure 3. 8: Thematic Qualitative Text Analysis Process                        | 140 |
| Figure 3. 3: The Process of Mobile Task-based Activity                         | 150 |
| Figure 3. 4: An overview of a FutureLearn platform structure                   | 152 |
| Figure 3. 5: Weekly unit overview with progress bars under each unit           | 153 |
| Figure 3. 6: Visual overview of the learning elements within a weekly unit     | 153 |
| Figure 4. 4: Barriers in Mobile Task-based Activity                            | 226 |
| Figure 4. 5: Inhibited facet for M-learning Experience                         | 233 |
| Figure 4. 6: Inhibited facet for SDL Readiness                                 | 239 |
|  |     |



Universiti Utara Malaysia

# List of Appendices

| Appendix A: Informed Document                                      | 342 |
|--|-----|
| Appendix B: Key Characteristics of FRAME Model (Theory)            | 345 |
| Appendix C: Learning Logbook Template                              | 348 |
| Appendix D: Reflective Practice                                    | 351 |
| Appendix E: Interview Informed Consent                             | 354 |
| Appendix F: Moderator's Question Guide                             | 354 |
| Appendix G: Themes Classification                                  | 357 |
| Appendix H: Mobile Task-based Activity Assessment                  | 358 |
| Appendix I: Rubric for Mobile-based Assessment                     | 361 |
| Appendix J: Sample of Validation Feedback for Survey Questionnaire | 364 |
| Appendix K: Survey Questionnaire                                   | 368 |
| Appendix L: Measurement Items Analysis                             | 372 |
| Appendix M: Joint Display of Qualitative and Quantitative Data     | 375 |
| Appendix N: Sample of Scoring                                      | 385 |
|  |     |

Universiti Utara Malaysia

## List of Abbreviations

| FL          | : FutureLearn  |
|-------------|--|
| FLMOOC      | : FutureLearn Massive Open Online Course                       |
| FRAME model | : The Framework for the Rational Analysis of Mobile Education  |
|             | Model  |
| HEI         | : Higher educational institutions                              |
| ICT         | : Information and Communications Technology                    |
| IR4.0       | : Fourth Industrial Revolution                                 |
| IT          | : Instructional Technology                                     |
| MBA         | : Mobile-based Assessment                                      |
| MCMC        | : Malaysian Communication and Multimedia Commission            |
| M-learning  | : Mobile learning  |
| MOHE        | : Ministry of Higher Education                                 |
| MOOC        | : Massive Open Online Course                                   |
| МТВА        | : Mobile Task-based activity                                   |
| ocw         | : Open courseware  |
| OER         | : Open educational resources                                   |
| OS          | : Operating System   |
| PG students | : Postgraduate students  |
| RMO         | : Restricted Movement Order.                                   |
| SDL         | : Self-directed learning                                       |
| SDLRS       | : Self-directed learning readiness scale                       |
| SDLRSNE     | : Self-Directed Learning Readiness Scale for Nursing Education |
| SPSS        | : Statistical package for social sciences                      |
| Web 2.0     | : The 'second generation' web-based technologies and Services  |
| WIFI        | : Wireless Fidelity  |

## CHAPTER ONE INTRODUCTION

#### **1.1 Background of the Study**

The advent of mobile devices means it has become almost impossible to survive without them in the current world of digitalisation. The omnipresence of mobile devices enables learners to access information immediately, bevond conventionalities such as traditional time and space (Curum & Khedo, 2020). Although recent years have witnessed a steady rise in the number of mobile device owners and users, a sudden dramatic increase in mobile usage was identified in 2020 following the coronavirus disease (COVID-19) outbreak in 2019 (Statista, 2020). Subsequently, the utilisation of mobile devices in the field of education has continued to expand.

The increased usage of mobile devices as mobile technology, constantly updated information, the pervasive need for access to information and personalised learning have been attributed to the emergence of mobile learning (M-learning) (Talan, 2020). M-learning can be defined as "a learning process in which the learner makes use of such mobile technology" (Lau et al., 2020, p. 1). The recently developed learning management systems (LMS) environment that involves accessing electronic learning using wireless devices is known as M-learning (El-Sofany & El-Haggar, 2020). These wireless devices include mobile computational devices such as digital media players (iPods and iPod Touches), smartphones (iPhones, Android phones, and Window phones), personal digital assistants (PDAs), tablet computers (iPads and Samsung tablets), and laptops with new and advanced features (Churchill & King, 2016; Alrasheedi & Capretz, 2018). The applications installed on these devices are

#### REFERENCES

- Abrantes, S., & Gouveia, L. B. (2010). A study on the usage of mobile devices in collaborative environments vs desktops: an approach based on flow experience. *International Conference on E-Business (ICE-B)*, 1–4. Athens.
- Adepu, S., & Adler, R. F. (2016). A comparison of performance and preference on mobile devices vs.desktop computers. *IEEE 7th Annual Ubiquitous Computing, Electronics and Mobile Communication Conference (UEMCON)*, 1–7. New York, NY.
- Agarwal, R., & Prasad, J. (1998). A conceptual and operational definition of personal innovativeness in the domain of information technology. *Information Systems Research*, 9(2), 204–215.
- Akcay, H. (2017). Learning from and dealing with real world problems. *Educational Theory*, *137*(7), 413–417.
- Al-Adwan, A. S., Al-Adwan, A., & Berger, H. (2018). Solving the mystery of mobile learning adoption in higher education. *International Journal of Mobile Communications*, 16, 24–49.
- Al-Adwan, A. S., Al-Madadha, A., & Zvirzdinaite, Z. (2018). Modeling students' readiness to adopt mobile learning in higher education: An empirical study. *International Review of Research in Open and Distributed Learning*, 19(1), 1–21. https://doi.org/https://doi.org/10.19173/irrodl.v19i1.3256
- Al-Emran, M., Elsherif, H. M., & Shaalan, K. (2016). Investigating attitudes towards the use of mobile learning in higher education. *Computers in Human Behavior*, 56, 93– 102. https://doi.org/https://doi.org/10.1016/j.chb.2015.11.033
- Al-Emran, M., Alkhoudary, Y. A., Mezhuyev, V., & Al-Emran, M. (2019). Students and educators attitudes towards the use of M-Learning: gender and smartphone ownership differences. *International Journal of Interactive Mobile Technologies* (*IJIM*), 13(01), 127. https://doi.org/10.3991/ijim.v13i01.9374
- Al-Hussaini, K. (2021). The Impact of 4G LTE Communication Technology on Mlearning Crest Factor (CF) Reduction Methods in Massive MIMO for 5G Wireless Communications. View project IoT Smart Farming: Monitoring using Low Range and Low Power Wireless Platform View project The Imp. *Global Summit on Applied Science, Engineering and Technology*, 1–10. Retrieved from https://www.researchgate.net/publication/356192298
- Al-Kandari, A. M., & Al-Qattan, M. M. (2020). E-task-based learning approach to enhancing 21st-century learning outcomes. *International Journal of Instruction*, 13(1), 551–566. https://doi.org/https://doi.org/10.29333/iji.2020.13136a
- Alexander, P. A. (2019). The art (and science) of seduction: Why, when, and for whom seductive details matter. *Applied Cognitive Psychology*, 33(1), 142–148.
- Alghazi, S. S., Kamsin, A., Almaiah, M. A., Wong, S. Y., & Shuib, L. (2021). For sustainable application of mobile learning: An extended utaut model to examine the

effect of technical factors on the usage of mobile devices as a learning tool. *Sustainability (Switzerland)*, *13*(4), 1–23. https://doi.org/10.3390/su13041856

- Alhajri, R., & AL-Hunaiyyan, A. (2016). Integrating Learning Style in the Design of Educational Interfaces. CSIJ Advances in Computer Science: An International Journal, 5, 124–131.
- Alharbi, H. A. (2018). Readiness for self-directed learning: how bridging and traditional nursing students differs? *Nurse Education Today*, *61*, 231–234.
- Alhassan, R. (2016). Mobile learning as a method of ubiquitous learning: Students' attitudes, readiness, and possible barriers to implementation in higher education. *Journal of Education & Learning*, 5(1), 176–189. https://doi.org/10.5539/jel.v5n1p176
- Almaiah, M. A., & Al-Khasawneh, A. (2020). Investigating the main determinants of mobile cloud computing adoption in university campus. *Education and Information Technologies*, 25, 3087–3107. https://doi.org/https://doi.org/10.1007/s10639-020-10120-8
- Almaiah, M. A., & Alamri, M. M. (2018). Proposing a new technical quality requirements for mobile learning applications. *Journal of Theoretical and Applied Information Technology*, 96(19), 14–25.
- Almaiah, M. A., Jalil, M. A., & Man, M. (2016). Extending the TAM to examine the effects of quality features on mobile learning acceptance. *Journal of Computers in Education*, 3(4), 453–485.
- Almaiah, M. A., & Al-Mulhem, A. (2019). Analysis of the essential factors affecting of intention to use of mobile learning applications: A comparison between universities adopters and non-adopters. *Education and Information Technologies*, 24(2), 1433– 1468. https://doi.org/10.1007/s10639-018-9840-1
- Almarashdeh, I. A., Sahari, N., Zin, N. A. M., & Alsmadi, M. (2010). The success of learning management system among distance learners in Malaysian Universities. *Journal of Theoretical & Applied Information Technology*, 21(2), 45–59.
- Alonso-García, S., Aznar-Díaz, I., Caceres-Reche, M. P., Trujillo-Torres, J. M., & Romero-Rodríguez, J. M. (2019). Systematic review of good teaching practices with ICT in Spanish higher education. Trends and challenges for sustainability. *Sustainability*, 11(24), 7150–7180. https://doi.org/https://doi.org/10.3390/su11247150.
- Alqahtani, M. S. M., Bhaskar, C.V., Elumalai, K. V., & Abumelha, M. (2018).
  WhatsApp: An Online Platform for University-Level English Language Education.
  Arab World English Journal, 9(4), 108–121.
  https://doi.org/10.24093/awej/vol9no4.7
- Alrasheedi, M., & Capretz, L. F. (2018). Determination of critical success factors affecting mobile learning: A meta-analysis approach. *Turkish Online Journal of Educational Technology - TOJET*, 14(2), 41–51.
- Alrofouh, A. M., Lakulu, M. M., & Almaiah, M. A. (2019). A systematic review of mobile-based assessment acceptance studies from 2009 to 2019. *Journal of*

Theoretical and Applied Information Technology, 97(20), 2530–2553.

- Alsadoon, E. (2018). The impact of social presence on learners' satisfaction in Mobile Learning. *Turkish Online Journal of Educational Technology - TOJET*, 17(1), 226–233.
- Alvarez, C., Alarcon, R., & Nussbaum, M. (2011). Implementing collaborative learning activities in the classroom supported by one-to-one mobile computing: A designbased process. *Journal of Systems and Software*, 84(11), 1961–1976. https://doi.org/https://doi.org/10.1016/j.jss.2011.07.011
- Alvin, C. B., & Ronald, F. B. (2009). Marketing Research (6th ed). Prentice Hall.
- Amandeep, K., Pooja, L., & Rajesh, K. (2020). Self-directed learning readiness and learning styles among Saudi undergraduate nursing students. *Nurse Education Today*, 16(1), 40–50. https://doi.org/10.1016/j.nedt.2012.05.003
- Amantha Kumar, J., & Al-Samarraie, H. (2019). An investigation of novice preuniversity students' views towards MOOCs: The case of Malaysia. *Reference Librarian*, 60(2), 134–147. https://doi.org/10.1080/02763877.2019.1572572
- Amro, H. J. (2014). The effects of motivation, technology, and satisfaction on student achievement in face-toface and online classes in college algebra at a college in South Texas. Texas A&M University-Kingsville.
- Andersson, U., Dasí, À., Mudambi, R., & Pedersen, T. (2016). Technology, innovation and knowledge: The importance of ideas and international connectivity. *Journal of World Business*, 51(1), 153–162. https://doi.org/doi:10.1016/j.jwb.2015.08.017
- Andreassen, C. S. (2015). Online social network site addiction: A comprehensive review. *Current Addiction Reports*, 2(2), 175–184.
- Anwar, K., & Husniah, R. (2016). Evaluating Integrated Task-Based Activities and Computer-Assisted Language Learning (CALL). *English Language Teaching*, 9(4), 119–129. https://doi.org/doi.org/10.5539/elt.v9n4p119
- Ariffin, S. A., Ismail, A., Yatim, M. H., & Sidek, S. F. (2018). An Assessment of Culturally Appropriate Design: A Malaysian University Context. International Journal of Interactive Mobile Technologies, 12(2), 1–8. https://doi.org/https://doi.org/10.3991/ijim.v12i2.8014
- Ariffin, S. A. (2016). Investigating the Daily Use of Mobile Phones as Tools to Enhance mobile learning for Local Cultural Subjects in the Context of Malaysian Universities. In *In Mobile and Blended Learning Innovations for Improved Learning Outcomes* (pp. 143–158). Retrieved from https://doi.org/10.4018/978-1-5225-0359-0.ch008
- Ariffin, S. A. (2017). Needs and Potentials for Studying Local Malaysian Culture through Mobile Learning. In Proceedings of the 3rd International Conference on Human Computer Interaction and User Experience in Indonesia, 60–66. ACM.
- Ariffin, Shamsul Arrieya, Glahn, C., Anshar, M., Daud, F., Kiong, T. T., Noordin, N. H., & Kamsin, A. (2020). Early investigation of the impact of mobile learning ethics student-generated activities for STEM subjects in a local Malaysian university context. *International Journal of Interactive Mobile Technologies*, 14(5), 210–218.

https://doi.org/10.3991/ijim.v14i05.13359

- Ariffin, Shamsul Arrieya, Side, S. F., & Mutalib, M. F. H. (2018). A preliminary investigation of Malaysian student's daily use of mobile devices as potential tools for STEM in a local university context. *International Journal of Interactive Mobile Technologies*, 12(2), 80–91. https://doi.org/10.3991/IJIM.V12I2.8015
- Asiimwe, E. & Grönlund, A. (2017). Practices and challenges in an emerging m-learning environment. *International Journal of Education and Development Using Information and Communication Technology*, 13(1), 103–122.
- Asiimwe, E. N., & Grönlund, A. (2015). MLCMS actual use, perceived use, and experiences of use. *International Journal of Education and Development Using Information and Communication Technology (IJEDICT), 11*(1), 101–121.
- Asikainen, H., Hailikari, T., & Mattsson, M. (2018). The interplay between academic emotions, psychological flexibility and self-regulation as predictors of academic achievement. *Journal of Further and Higher Education*, 42(4), 439–453. https://doi.org/10.1080/0309877X.2017.1281889
- Aubusson, P., Schuck, S., & Burden, K. (2009). Mobile learning for teacher professional learning: benefits, obstacles, and issues. *ALT-J, Research in Learning Technology*, 233–247.
- Ausubel, D. P. (1968). A Cognitive View. In Rinehart and Winston (Ed.), *Educational Psychology Review*. New York, New York, USA.
- Aziz, S., Rajan, K., Deepani, B. G., Krishna, P., Vanaja, K. (2021). Mobile Learning Approaches and Its Impact on Student's Education — A Survey. International Journal of Information and Education Technology, 11(9), 429–435. https://doi.org/10.18178/ijiet.2021.11.9.1546
- Aznar-Díaz, I., Caceres-Reche, M. P., & Romero-Rodríguez, J. M. (2018). Quality indicators to evaluate good teaching practices of mobile learning in Higher Education. *Education in the Knowledge Society*, 19(3), 52–68. https://doi.org/https://doi.org/10.14201/eks20181935368.
- Bachman, K. M., & Gannod, G. C. (2011). A critical analysis of M-Learning initiatives.In P. Sanchez, I.A., Isaias (Ed.), *In Mobile Learning 2011* (p. 310). Avila, Spain: International Association for Development of the Information Society.
- Bachman, L., & Palmer, A. (1996). *Language testing in practice*. Oxford: Oxford University Press.
- Baharum, A., Yi Wan, L., Yahya, F., Hanin Nazlah, N., Azida Mohamed Nor, N., Ismail, I., ... Baharun, A. (2020). Mobile learning application: flipped classroom. *Indonesian Journal of Electrical Engineering and Computer Science*, 17(2), 1084– 1090. https://doi.org/10.11591/ijeecs.v17.i2.pp1084-1090
- Bai, H. (2019). Pedagogical Practices of Mobile Learning in K-12 and Higher Education Settings. *TechTrends*, 63(5), 611–620. https://doi.org/10.1007/s11528-019-00419w
- Bailey, A. A., Pentina, I., Mishra, A. S., & Ben Mimoun, M. S. (2020). Exploring factors influencing US millennial consumers' use of tap-and-go payment

technology. The International Review of Retail, Distribution and Consumer Research, 30(2), 143–163.

- Baldwin, S., Ching, Y. H., & Hsu, Y. C. (2018). Online course design in higher education: A review of national and statewide evaluation instruments. *TechTrends*, 62(3), 46–57. https://doi.org/https://doi.org/10.1007/ s11528-017-0215-z.
- Baldwin, S. J., & Ching, Y. H. (2020). Guidelines for Designing Online Courses for Mobile Devices. *TechTrends*, 64(3), 413–422. https://doi.org/10.1007/s11528-019-00463-6
- Baldwin, S. J. (2019). Assimilation in online course design. *The American Journal of Distance Education*, 33(3), 195–211. https://doi.org/https://doi.org/10.1080/08923647.2019.1610304
- Bao, R., & Du, X. (2015). Implementation of task-based language teaching in Chinese as a foreign language: benefits and challenges. *Language Culture Curriculum*, 3(1), 1–20.
- Bartholomew, S. R., Reeve, E., Veon, R., Goodridge, W., Lee, V., & Nadelson, L. (2017). Relationships between access to mobile devices, student self-directed learning, and achievement. In *Journal of Technology Education* (Vol. 29).
- Baticulon, R. E., Rose Alberto, N. I., Beatriz Baron, M. C., Earl Mabulay, R. C., Gabriel Rizada, L. T., Jenkin Sy, J., ... Carlo Reyes, J. B. (2020). Barriers to online learning in the time of COVID-19: A national survey of medical students in the Philippines. *MedRxiv*, 4(18), 1–19. https://doi.org/10.1101/2020.07.16.20155747
- Bayan Abu Shawar. (2017). Neither Completely M- Nor E-Learning: Integrating both is the Solution. Proceedings of the 2017 International Conference on Cloud and Big Data Computing (ICCBDC 2017)., 112–118. https://doi.org/doi.org/10. 1145/3141128.3141144
- Beach, P. (2017). Self-directed online learning: A theoretical model for understanding elementary teachers' online learning experiences. *Teaching and Teacher Education*, *61*(1), 60–72. https://doi.org/https://doi.org/10.1016/j.tate.2016.10.007
- Bello, H., & Athiyah Abdullah, N. (2021). Investigating the Influence of Quality Factors on User Satisfaction with Summative Computer-based Assessment. *The Electronic Journal of E-Learning*, 19(6), 490–503. https://doi.org/10.34190/ejel.19.6.2487
- Bennett, S., Dawson, P., Bearman, M., Molloy, E., & Boud, D. (2016). How technology shapes assessment design: Findings from a study of university teachers. *British Journal of Educational Technology*, 00(00), 1–11. https://doi.org/http://dx.doi.org/10.1111/bjet.12439
- Berry, M. J., & Westfall, A. (2015). Dial D for distraction: The making and breaking of cell phone policies in the college classroom. *CollegeTeaching*, *63*(2), 62–71. https://doi.org/http://dx.doi.org/10.1080/87567555.2015.1005040
- Bidaki, M. Z., Sanati, A. R., & Ghannad, F. R. (2013). Producing and introducing mobile books, as a new model of providing learning content in medical sciences. *Procedia – Social and Behavioral Sciences*, 83, 99–102.
- Bildfell, A. (2015). Blog: What is Innovative Teaching and How Can We Implement it

into Our Classrooms at the Post-Secondary Level? Retrieved from https://carleton.ca/tasup%02port/2015/what-is-innovative-teaching-and-how-can-we-implement-it-into-our-classrooms-at-the-post%02secondary-level/

- Binkley, M., Erstad, O., Herman, J., Raizen, S., Ripley, M., & Runmble, M. (2014). Partnership for 21st century skills.
- Bissett-Johnson, K. M., & Radcliffe, D. F. (2019). Assessing the authenticity of the student learning experience. *Proceedings of the Design Society: International Conference on Engineering Design*, 1(1), 449–458. https://doi.org/10.1017/dsi.2019.48
- Bogdanović, Z., Barać, D., Jovanić, B., Popović, S., & Radenković, B. (2014). Evaluation of mobile assessment in a learning management system. *British Journal* of Educational Technology, 45(2), 231–244.
- Boyles, P. C. (2011). Maximising learning using online student assessment. Retrieved from Online Journal of Distance Learning Administration website: http://www.westga.edu/~distance/ojdla
- Bradley, L., Lindström, N. B., & Hashemi, S. S. (2017). Integration and language learning of newly arrived migrants using mobile technology. *Journal of Interactive Media in Education*, 1(1), 1–9. https://doi.org/https://doi.org/10.5334/jime.434
- Broadbent, J., & Poon, W. L. (2015). Self-regulated learning strategies and academic achievement in online higher education learning environments: A systematic review. *Internet and Higher Education*, 27(C), 1–13.
- Broadbent, J. (2017). Comparing online and blended learner's self-regulated learning strategies and academic performance. *The Internet and Higher Education*, *33*, 24–32. https://doi.org/https://doi.org/10.1016/j.iheduc.2017.01.004
- Brown, C., Czerniewicz, L., & Noakes, T. (2016). Online content creation: looking at students' social media practices through a connected learning lens. *Learning, Media and Technology*, *41*(1), 140–159.
- Brown, J. S., Collins, A., & Duguid, P. (1989). Situated cognition and the culture of learning. *Educational Researcher*, 18(1), 32–42.
- Bruton, A. (2005). Task-based language teaching: for the state secondary FL classroom? *Language Learning Journal*, *31*(1), 55–68.
- Buckner, E., & Kim, P. (2012). Mobile innovations, executive functions, and educational developments in conflict zones: A case study from Palestine. *Educational Technology Research and Development*, *60*, 175–192.
- Burdujan, R. (2019). E-learning activities in task-based language teaching as a way to improve language proficiency. *Multidisciplonary Academic Conference*, 191–198. Prague.
- Burston, J. (2016). The future of foreign language instructional technology: BYOD MALL. *The EuroCALL Review*, 24(1), 3–20.
- Calderón, A., Meroño, L., & MacPhail, A. (2020). A student-centred digital technology approach: The relationship between intrinsic motivation, learning climate and academic achievement of physical education pre-service teachers. *European*

*Physical Education Review*, 26(1), 241–262. https://doi.org/10.1177/1356336X19850852

- Campbell, S. (2006). Perceptions of mobile phones in college classrooms:Ringing, cheating, and classroom policies. *Communication Education*, 55(3), 280–294. https://doi.org/http://dx.doi.org/10.1080/03634520600748573
- Carless, D. (2007). The suitability of task-based approaches for secondary schools: Perspectives from Hong Kong. *Systematic Reviews*, *35*(4), 595–608. https://doi.org/https://doi.org/10.1016/j.system.2007.09.003
- Carver, C. S., & Scheier, M. F. (2001). On the self-regulation of behavior. Cambridge University Press.
- Case, R. (2015). Intellectual development: Birth to adulthood. Orlando, FL: Academic Press.
- Chae, M., & Kim, J. (2004). Do size and structure matter to mobile users? An empirical study of the effects of screen size, information structure, and task complexity on user activities with standard web phones. *Behaviour and Information Technology*, 23(3), 165–181.
- Chase, T. J. G., Julius, A., Chandan, J. S., Powell, E., Hall, C. S., Phillips, B. L., ... Fernando, B. (2018). Mobile learning in medicine: An evaluation of attitudes and behaviours of medical students. *BMC Medical Education*, 18(1), 1–8. https://doi.org/10.1186/s12909-018-1264-5
- Chen, B. Y., Kern, D. E., Kearns, R. M., Thomas, P. A., Hughes, M. T., & Tackett, S. (2019). From modules to MOOCs: Application of the six-step approach to online curriculum development for medical education. *Academic Medicine*, 94(5), 678– 685.
- Chen, K., Chen, J. V., & Yen, D. C. (2011). Dimensions of self-efficacy in the study of smart phone acceptance. *Computer Standards & Interfaces*, 33(4), 422–431.
- Chen, C. M. (2010). Intelligent location-based mobile news service system with automatic news summarization. *Expert Systems with Applications*, 37(2), 6651–6662.
- Chen, J., & Neo, P. (2019). Texting the waters: An assessment of focus groups conducted via the WhatsApp smartphone messaging application. *Methodological Innovations*, *12*(3). https://doi.org/10.1177/2059799119884276
- Cheng Ean Lee., Serena Wai Yee Leow., & X. J. K. (2019). The use of Mobile technologies for learnign in Higher Education: Students' Readiness. *The 6th International Search Conference 2019 Proceedings*, (June), 1–12. Kuala Lumpur, Malaysia.
- Cheung, R. (2013). Predicting user intentions for mobile learning in a project-based environment. *International Journal of Electronic Commerce Studies*, 4(2), 263–280.
- Chi, H., Le, T. P., & Aves, G. E. (2021). Integrating Online Assessment into Blended Training Form: A Case Study at Lac Hong University. *Journal of Technical Education Science*, 1(62), 38–43.
- Chin, W. W., & Todd, P. A. (1995). On the use, usefulness, and ease of use of structural

equation modeling in MIS research: A note of caution. *MIS Quarterly*, 19(2), 210–237. https://doi.org/http://dx.doi.org/10.2307/249690.

- Christ, T., Arya, P., & Liu, Y. (2018). Technology integration in literacy lessons: Challenges and successes. *Literacy Research and Instruction*, 58(1), 49–66. https://doi.org/10.1080/19388071.2018.1554732
- Christensen, R., & Knezek, G. (2018). Reprint of readiness for integrating mobile learning in the classroom: Challenges, preferences and possibilities. *Computers in Human Behavior*, 78(4), 1–37. https://doi.org/10.1016/j.chb.2017.07.046
- Chung, C. C., Cheng, Y. M., Shih, R. C., & Lou, S. J. (2019). Research on the learning effect of the positive emotions of "ship fuel-saving project" APP for engineering students. *Sustainability (Switzerland)*, *11*(4), 1–23. https://doi.org/10.3390/su11041136
- Churchill, D., Fox, B., & King, M. (2016). Framework for designing mobile learning environments. In *Mobile learning design* (pp. 3–25). Singapore: Springer.
- Claessens, B. J. C., van Eerde, W., Rutte, C. G., & Roe, R. A. (2007). A review of the time management literature. *Personnel Review*, *36*(2), 255–276.
- Cleveland, R. E. (2018). Using Digital Portfolios: Reflection, Assessment & Employment. *TechTrends*, 62(3), 276–285. https://doi.org/10.1007/s11528-018-0262-0
- Cohen, L., & Manion, L. (1985). Research methods in education (2nd editio). London: Croom Helm.
- Cohen, L., Manion, L., & Morrison, K. R. B. (2004). A guide to teaching practice (5th editio). London: Routledge.
- Cohn, M. A., Fredrickson, B. L. (2009). Positive emotions. In Oxf. Handb. Positive Psychol.
- Conole, G. P., & Alevizou, P. (2010). *A literature review of the use of Web 2.0 tools in higher education*. (A report commissioned by the higher education academy). Higher Education Academy.
- Cook, N. F., McAloon, T., O'Neill, P., & Beggs, R. (2012). Impact of a web based interactive simulation game (PULSE) on nursing students' experience and performance in life support training - A pilot study. *Nurse Education Today*, 6(2), 714–720.
- Corbeil, J. R., & Valdes, M. E. (2007). "Are You Ready for Mobile Learning?" *Educause Quarterly*, 30(2), 165–175.
- Corbin, J., & Strauss, A. (2008). *Basics of qualitative research: Techniques and procedures for developing Grounded Theory* (3rd editor, Ed.). Retrieved from https://doi.org/http://dx.doi.org/10.4135/9781452230153
- Craft, M. (2005). Reflective writing and nursing education. Journal Of Nursing Education, 44(2), 53-57.
- Creswell, J. W., & Plano, C. V. L. (2017). *Designing and conducting mixed methods research* (3rd editio). Los Angeles, CA: Sage.

- Creswell, J.W., & Miller, D. L. (2000). In Qualitative Inquiry. *Theory Into Practice*, 39(3), 124–130. https://doi.org/10.1207/s15430421tip3903\_2
- Creswell, J. W. (2003). *Research Design Qualitative quantitative and Mixed Methods Approaches*. SAGE Publications Ltd.
- Creswell, J. W. (2007). *Qualitative inquiry and research design: Choosing among five approaches*. SAGE Publications Ltd.
- Creswell, J. W. (2014). *Research design: Qualitative, quantitative, and mixed methods approaches* (4th editio). SAGE Publications Ltd.
- Creswell, L. L. (2009). Invited commentary. *The Annals of Thoracic Surgery*, 88(6), 1876–1882. https://doi.org/10.1016/j.athoracsur.2009.08.031
- Criollo-C, S., Lujan-Mora, S., & Jaramillo-Alcazar, A. (2018). Advantages and disadvantages of M-learning in current education. *2nd IEEE World Eng. Educ. Conf*, 1–6. https://doi.org/10.1109/EDUNINE.2018.8450979.
- Crompton, H., & Burke, D. (2020). Mobile learning and pedagogical opportunities: A configurative systematic review of PreK-12 research using the SAMR framework. *Computers & Education*, 156(9), 1–50.
- Crompton, H., Burke, D., & Gregory, K. H. (2017). The use of mobile learning in PK-12 education: A systematic review. *Computers & Education*, 110, 51–63.
- Crompton, H., Burke, D., Gregory, K. H., & Gräbe, C. (2016). The use of mobile learning in science: A systematic review. *Journal of Science Education and Technology*, 25(2), 149–160. https://doi.org/10.1007/s10956-015-9597-x.
- Crompton, H. (2015). A theory of mobile learning. In *International Handbook of E-Learning-Theoretical Perspectives and Research* (Volume 2, p. 309). London, UK,: Routledge; Taylor & Francis.
- Curum, B., & Khedo, K. K. (2020). Cognitive load management in mobile learning systems: principles and theories. *Journal of Computers in Education*, *8*, 109–136. https://doi.org/10.1007/s40692-020-00173-6
- Dahlstrom, E., & Bichsel, J. (2014). ECAR study of undergraduate students and information technology. Louisville CO: ECAR.
- Darcin, A. E., Kose, S., Noyan, C. O., Nurmedov, S., Yılmaz, O., & Dilbaz, N. (2016). Smartphone addiction and its relationship with social anxiety and loneliness. *Behavior Information Technology*, 35(7), 520–525. https://doi.org/10.1080/0144929X.2016.1158319.
- Daud, R., Susanto, A., & Dwi, H. (2017). The Dynamics of Mobile Learning Utilization in Vocational Education: Frame Model Perspective Review. *TOJET: The Turkish Online Journal of Educational Technology*, 16(4).
- Davies, R. S., Dean, D. L., & Ball, N. (2013). Flipping the classroom and instructional technology integration in a college-level information systems spreadsheet course. *Educational Technology Research and Development*, 61(4), 563–580. https://doi.org/10.1007/s11423-013-9305-6
- Dawson, S., Macfadyen, L., Risko, F., Foulsham, T., & Kingstone, A. (2012). Using

technology to encourage self-directed learning: The Collaborative Lecture Annotation System (CLAS). Ascilite 2012: Future Challenges, Sustainable Futures, 246–255. Retrieved from http://www.ascilite.org/conferences/Wellington12/2012/images/custom/dawson,\_sh ane - using technology.pdf

- de Waard, I. (2013). Analyzing the impact of mobile access on learner interactions in a MOOC (Master thesis, ATHABASCA UNIVERSITY). Retrieved from https://dt.athabascau.ca/jspui/bitstream/10791/23/1/Master thesis Inge de Waard MEd publication final reviewed.pdf
- Deci, E. L., & Ryan, R. M. (2008). Facilitating optimal motivation and psychological well-being across life's domains. *Canadian Psychology*, 49(1), 14–23. https://doi.org/10.1037/0708-5591.49.1.14
- Delone, W. H., & McLean, E. R. (2003). The DeLone and McLean model of information systems success: a ten-year update. *Journal of Management Information Systems*, 19(4), 9–30. https://doi.org/10.1007/s10639-018-9840-1.
- Denzin, N. K. (1989). Qualitative research methods. In *Interpretive biography*. Oxford, UK: SAGE Publications Ltd.
- Deutsch, T., Herrmann, K., Frese, T., & Sandholzer, H. (2012). Implementing computerbased assessment – A web-based mock examination changes attitudes. *Computers* and Education, 58(4), 1068–1075. https://doi.org/10.1016/j.compedu.2011.11.013
- Dewey, J. (1933). *How we think: a restatement of the relation of reflective thinking to the educative process.* Chicago IL: Henry Regnery Co.
- Dewi, A. K., Ratminingsih, N. M., & Santosa, M. H. (2020). Mobile-Assisted Task-Based Language Learning, Writing Competency, And Motivation. JPI (Jurnal Pendidikan Indonesia), 9(1), 119. https://doi.org/10.23887/jpi-undiksha.v9i1.23164
- Dhawan, S. (2020). Online learning: A panacea in the time of COVID-19 crisis. *Journal* of Educational Technology Systems, 49(1), 5–22. https://doi.org/10.1177/0047239520934018
- Dilshad, M. N. (2017). Collaborative learning environment. Archives of Business Research, 5(10), 195–198.
- Doughty, C. J. & Long, M. H. (2003). Optimal psycholinguistic environments for distance foreign language learning. *Language Learning & Technology*, 7(3), 50–80. Retrieved from http://llt.msu.edu/vol7num3/doughty/
- Dziuban, C. D., Picciano, A. G., Graham, C. R., & Moskal, P. D. (2015). *Conducting research in online and blended learning environments: New pedagogical frontiers.* Routledge; Taylor & Francis.
- Eisenhardt, K. M. (1989). Building Theories from Case Study Research. *The Academy of* Management Review, 14(4), 532–550.
- Eitel, A., Endres, T., & Renkl, A. (2020). Self-management as a Bridge Between Cognitive Load and Self-regulated Learning: the Illustrative Case of Seductive Details. *Educational Psychology Review*, 32(4), 1073–1087. https://doi.org/10.1007/s10648-020-09559-5

- El-Hussein, M. O. M., & Cronje, J. C. (2010). Defining Mobile Learning in the Higher Education Landscape. *Mobile Learning Design*, 13(3), 12–21.
- El-Sofany, H. F., & El-Haggar, N. (2020). The effectiveness of using mobile learning techniques to improve learning outcomes in higher education. *International Journal* of *Interactive Mobile Technologies*, 14(8), 4–18. https://doi.org/10.3991/IJIM.V14I08.13125
- Ellis, R. (2009). Task-based language teaching: Sorting out the misunderstandings. *International Journal of Applied Linguistics*, 19, 221–246. https://doi.org/10.1111/j.1473-4192.2009.00231.x
- Elvers, G. C., Polzella, D. J., & Graetz, K. (2003). Procrastination in online courses: Performance and attitudinal differences. *Teaching of Psychology*, *30*(2), 159–162. https://doi.org/10.1207/S15328023TOP3002 13
- Englert, L. M. (2010). Learning with laughter: using humor in the nursing classroom. *Nursing Education Perspectives*, *31*(1), 48–49.
- Estaire, S., & Zanón, J. (1994). Task-based teaching. Oxford, UK: Heinemann.
- Evren Sumuer. (2018). View of Factors related to college students' self-directed learning with technology. *Australasian Journal of Educational Technology*, *34*(3), 29–43. https://doi.org/https://doi.org/10.14742/ajet.3142
- Fan, K. Y. K., Lo, P., Ho, K. K. W., So, S., Chiu, D. K. W., &, & Ko., E. H. T. (2020). Exploring the mobile learning needs amongst performing arts students. *Information Discovery and Delivery*, 48(2), 103–112. https://doi.org/10.1108/IDD-12-2019-0085
- Fang, W. C., Yeh, H. C., Luo, B. R., & Chen, N. S. (2020). Effects of mobile-supported task-based language teaching on EFL students' linguistic achievement and conversational interaction. *ReCALL*, 1–17. https://doi.org/10.1017/S0958344020000208
- Farrell, M. J., & Rose, L. (2008). Use of mobile handheld computers in clinical nursing education. *Journal of Nursing Education*, 47(1), 13–19. https://doi.org/10.3928/01484834-20080101-03
- Feldon, D. F., Gregory, C., Juth, S., & Jeong, S. (2019). Cognitive load as motivational cost. *Educational Psychology Review*, 31(2), 319–337. https://doi.org/10.1007/s10648-019-09464-6
- Findlater, L., & McGrenere, J. (2008). "Impact of screen size on performance, awareness, and user satisfaction with adaptive graphical user interfaces." *Proceedings CHI 2008, ACM Press*, 1247–1256.
- Fisher, K., & Koren, A. (2007). Palm perspectives: the use of personal digital assistants in nursing clinical education. A qualitative study. *Online Journal Of Nursing Informatics*, 11(2), 12–19.
- Fisher, M. J., & King, J. (2010). The self-directed learning readiness scale for nursing education revisited: A confirmatory factor analysis. *Nurse Education Today*, *30*(1), 44–48. https://doi.org/10.1016/j. nedt.2009.05.020.
- Fisher, M. J., King, J., & Tague, G. (2001). Development of a self-directed learning

readiness scale for nursing education. *Nurse Education Today*, 21(7), 516–525. https://doi.org/10.1054/nedt.2001.0589

- Fitzgerald, J. H., & Tisdell, C. C. (2019). The impact of educational microcontent on the student learning experience. ACM International Conference Proceeding Series, 17– 22. https://doi.org/10.1145/3348400.3348412
- Foen, N. S., Affiq, M., Azlan, K., Nadhirah, A., Kamal, A., & Manion, A. (2020). A quasi-experiment on using guided mobile learning interventions in ESL classrooms: Time use and academic performance abbreviations CGPA Cumulative Grade Point Average ESL English as a Second Language FIAT Faculty of Agro-Based Industry FSB Faculty of Ear. *Education and Information Technologies*. https://doi.org/10.1007/s10639-020-10191-7
- Fournier, H., Kop, R., & Durand, G. (2014). Challenges to research in MOOCs. *Journal* of Online Learning and Teaching, 10(1), 1–15.
- Franke, T., Sims-Gould, J., Chaudhury, H., Winters, M., & McKay, H. (2019). It makes your life worthwhile. It gives you a purpose in living': Mobility experiences among active older adults with low income. *Ageing and Society*, 39(8), 1639–1666. https://doi.org/10.1017/S0144686X18000181
- Frey, B., Schmitt, V., & Allen, P. (2012). Defining authentic classroom assessment. *Practical Assessment, Research & Evaluation, 17*(2), 1–17. https://doi.org/10.7275/sxbs-0829
- Fu, Q. K., & Hwang, G. J. (2018). Trends in mobile technology- supported collaborative learning: A systematic review of journal publications from 2007 to 2016. *Computers & Education*, 119, 129–143. https://doi.org/10.1016/j.compedu.2018.01.004
- Fullana, J., Pallisera, M., Colomer, J., Fernández Peña, R., & Pérez-Burriel, M. (2016). Reflective learning in higher education: A qualitative study on students' perceptions. *Studies in Higher Education*, 41, 1008–1022. https://doi.org/10.1080/03075079.2014.950563
- Fung Lan Yong. (2010). A study on the learning approaches of Malaysian students in relation to English Language acquisition. Retrieved October 18, 2018, from https://www.researchgate.net/publication/260762634\_A\_study\_on\_the\_learning\_ap proaches\_of\_%0AMalaysian\_students\_in\_relation\_to\_English\_Language\_acquisiti on
- Garrison, D. R. (1997). Self-directed learning: Toward a comprehensive model. Adult Education Quarterly, 48(1), 18–33. https://doi.org/10.1177/074171369704800103
- Gatt, S., Ojala, M., & Soler, M. (2011). Promoting social inclusion counting with everyone: Learning communities and included. *International Studies in Sociology* of Education, 21(1), 33–47. https://doi.org/10.1080/09620214.2011.543851
- Gedik, N., Hanci-Karademirci, A., Kursun, E., & Cagiltay, K. (2012a). Key instructional design issues in a cellular phone-based mobile learning project. *Computers & Education*, 58(4), 256–262. https://doi.org/10.1016/j.compedu.2011.12.002
- Gedik, N., Hanci-Karademirci, A., Kursun, E., & Cagiltay, K. (2012b). No Title.

*Computer Education*, 58(4), 1149–1159. https://doi.org/https://doi.org/10.1016/j.compedu.2011.12.002

- Gon, S., & Rawekar, A. (2017). Effectivity of e-learning through WhatsApp as a teaching learning tool. *MVP Journal Medical Science*, 4(1), 19–25. https://doi.org/10.18311/mvpjms/2017/v4i1/8454
- Gordon, C., Tindall-Ford, S., Agostinho, S., & Paas, F. (2016). Learning from instructor-managed and self-managed split-attention materials. *Applied Cognitive Psychology*, 30(1), 1–9.
- Gove, J. (2019). What makes a good mobile web site? Google Developers. Retrieved from https://developers.google.com/web/%0Afundamentals/design-andux/principles/
- Grant, M. M., & Barbour, M. K. (2013). Mobile teaching and learning in the classroom and online: Case studies in k-12. In Z. L. Berge & L. Y. Muilenburg (Ed.), *Handbook of mobile learning* (pp. 285–292). New York: Routledge.
- Guglielmino, L. M. (1977). *Development of the self-directed learning readiness scale*. Unpublished doctoral dissertation. University of Georgia, Georgia, USA.
- Guiffrida, D. A., Lynch, M. F., Wall, A. F., & Abel, D. S. (2013). Do reasons for attending college affect academic outcomes? A test of a motivational model from a self-determination theory perspective. *Journal of College Student Development*, 54(2), 121–137. https://doi.org/10.1353/csd.2013.0019
- Guler, C., Kilic, E. & Cavus, H. (2014). "A comparison of difficulties in instructional design processes: mobile vs. desktop." *Computers in Human Behavior*, 39, 128– 135. https://doi.org/10.1016/j.chb.2014.07.008
- Güneş, H. (2015). *Mission-oriented language teaching and Arabic grammar teaching*. Ankara: Gazi University Institute of Educational Sciences.
- Gurova, T., Riabukha, T., Zinenko, N., & Gostishcheva, N. (2020). Mobile learning in developing phonetic competence of future interpreters. *Advanced Education*, 14(1), 66–74. https://doi.org/doi.org/10.20535/2410-8286.155398
- Hadwin, A. F. (2008). Self-regulated learning. In T. L. Good (Ed.), 21st century education: A reference handbook (pp. 175–183). Thousand Oaks, CA: SAGE Publications Ltd.
- Hair, J. F., Black, W. C., Babin, B. J., & Anderson, R. E. (2010). *Multivariate Data Analysis* (7th Ed). New Jersey: Prentice Hall, Upper Saddle River.
- Halcomb, E. J., & Davidson, P. M. (2006). Is verbatim transcription of interview data always necessary? *Applied Nursing Research*, 19(1), 38–42. https://doi.org/10.1016/j.apnr.2005.06.001
- Hamdan, A., Nasir, R., Rozainee, W., & Sulaiman, W. S. (2013). Time management does not matter for academic achievement unless you can cope. *International Proceedings of Economics Development and Research*, 78, 22.
- Hamid, S., Waycott, J., Kurnia, S., & Chang, S. (2015). Understanding students' perceptions of the benefits of online social networking use for teaching and learning. *The Internet and Higher Education*, 26, 1–9.

https://doi.org/https://doi.org/10.1016/j.iheduc.2015.02.004

- Hamzah, A., Hidayatullah, A. F., & Persada, A. G. (2020). Discovering trends of mobile learning research using topic modelling approach. *International Journal of Interactive Mobile Technologies*, 14(9), 4–14. https://doi.org/10.3991/ijim.v14i09.11069
- Hansson, P. O., & Jobe, W. (2013). Smart running in Kenya runners' improvement in training, informal learning and economic opportunities using smartphones. *Proceedings of the IST-Africa 2013 Conference & Exhibition*, 29–31. Nairobi, Kenya.
- Harida, E. S. (2020). Students ' learning in corona virus diseases 2019 (Covid-19) situation. *English Education Journal*, 8(1), 25–37. Retrieved from http://jurnal.iainpadangsidimpuan.ac.id/index.php/EEJ/article/view/2675/2068
- Harley, J. M., Liu, Y., Ahn, T. B., Lajoie, S. P., Grace, A. P., Haldane, C., ... McLaughlin, B. (2019). I've got this: Fostering topic and technology-related emotional engagement and queer history knowledge with a mobile app. *Contemporary Educational Psychology*, 59, 101790. https://doi.org/10.1016/J.CEDPSYCH.2019.101790
- Hashemifardnia, A., Rasooyar, H., & Sepehri, M. (2019). Enhancing Iranian EFL learners' speaking fluency through using task-based activities. *Active Global Foreign Language Teaching*, 9(3), 24–32.
- Heflin, H., Shewmaker, J., & Nguyen, J. (2017). Impact of mobile technology on student attitudes, engagement, and learning. *Computers & Education*, 107, 91–99. https://doi.org/10.1016/j.compedu.2017.01.006
- Helyer, R. (2015). Learning through reflection: The critical role of reflection in workbased learning (WBL). *Journal of Work-Applied Management*, 7(1), 15–27. https://doi.org/10.1108/JWAM-10-2015-003
- Heo, J. C., & Han, S. (2017). Effects of motivation, academic stress and age in predicting self-directed learning readiness (SDLR): Focused on online college students. *Education and Information Technologies*, 23(1), 61–71. https://doi.org/10.1007/s10639-017-9585-2
- Herman, G. L. (2012). Designing contributing student pedagogies to promote students' intrinsic motivation to learn. *Computer Science Education*, 22(4), 369–388. https://doi.org/10.1080/08993408.2012.727711
- Herrington, J., & Oliver, R. (2000). An instructional design framework for authentic learning environments. *Educational Technology Research and Development*, 48(3), 23–48.
- Herrington, J., Reeves, T. C., & Oliver, R. (2010). A guide to authentic e-learning. London: Routledge.
- Herrington, J. (2006). Authentic e-learning in higher education : Design principles for authentic learning environments and tasks. *World Conference on E-Learning in Corporate, Government, Healthcare, and Higher Education*, (October), 13–17.
- Hickson, H. (2011). Critical reflection: Reflecting on learning to be reflective. Reflective

Practice, 12(6), 829-839. https://doi.org/10.1080/14623943.2011.616687

- Hoober, S., & Berkman, E. (2018). *Designing mobile interfaces: Patterns for interaction design*. O'Reilly Media, Inc.
- Hosler, K. A. (2013). Pedagogies, perspectives, and practices: Mobile learning through the experiences of faculty developers and instructional designers in centers for teaching and learning. University of Northern Colorado.
- Howlett, G., & Waemusa, Z. (2019). 21 st century learning skills and autonomy: Students' perceptions of mobile devices in the Thai EFL context. *Teaching English with Technology*, 19(1), 72–85.
- Huang, R. T., & Yu, C. L. (2019). Exploring the impact of self-management of learning and personal learning initiative on mobile language learning: A moderated mediation model. *Australasian Journal of Educational Technology*, 35(3), 118–131. https://doi.org/10.14742/ajet.4188
- Huang, Y. M., Chiu, P. S., Liu, T. C., & Chen, T. S. (2011). The design and implementation of a meaningful learning-based evaluation method for ubiquitous learning. *Computers & Education*, 57(4), 2291–2302. https://doi.org/10.1016/j.compedu. 2011.05.023
- Hussain, A., Mkpojiogu, E. O. C., Abduljabbar, A. M., & Almadhagi, A. H. G. (2018). UUM mobile for students: A usability evaluation on two mobile OS platforms. *Journal of Advanced Research in Dynamical and Control Systems*, 10(10), 1514– 1519.
- Hussain, R. M. R., & Al Saadi, K. K. (2019). Students as designers of e-book for authentic assessment. *Malaysian Journal of Learning and Instruction*, 16(1), 23–48. https://doi.org/10.32890/mjli2019.16.1.5315
- Hwang, G. J., Lai, C. L., Liang, J. C., Chu, H. C., & Tsai, C. C. (2018). A long-term experiment to investigate the relationships between high school students' perceptions of mobile learning and peer interaction and higher-order thinking tendencies. *Educational Technology Research and Development*, 66, 75–93. https://doi.org/10.1007/s11423-017-9540-3
- Hwang, W.-Y., Shadiev, R., Hsu, J.-L., Huang, Y.-M., Hsu, G.-L. & Lin, Y.-C. (2016). Effects of storytelling to facilitate EFL speaking using web-based multimedia systems. *Computer Assisted Language Learning*, 29(2), 215–241. https://doi.org/https://doi.org/10.1080/09588221.2014.927367
- Iji, C. O., Abah, J. A., & Anyor, J. W. (2017). Impact of cloud services on students' attitude towards mathematics education in public universities in Benue State, Nigeria. *International Journal of Research in Education and Science (IJRES)*, 3(1), 228–244. Retrieved from http://dergipark.ulakbim.gov.tr/ijres/article/download/5000202010/5000179858
- Ilic, P. (2015). The effects of mobile collaborative activities in a second language course. *International Journal of Mobile and Blended Learning*, 7(4), 16–37. https://doi.org/10.4018/IJMBL.2015100102
- Ismail, I., Azizan, S. N., & Gunasegaran, T. (2016). Mobile Learning in Malaysia

Universities: Are Students Ready? International Journal of Interactive Mobile Technology, 10(3), 17–23.

- Jaggars, S. S., & Xu, D. (2016). How do online course design features influence student performance? *Computers & Education*, 95(1), 270–284.
- James, L., & Casidy, R. (2018). Authentic assessment in business education: Its effects on student satisfaction and promoting behaviour. *Studies in Higher Education*, 43(3), 401–415. https://doi.org/10.1080/03075079.2016.1165659
- Jansen, D., & Schuwer, R. (2015). *Institutional MOOC strategies in Europe: Status report based on a mapping survey conducted in October-December 2014*. Retrieved from http://www.flickr.com/photos/mathplourde/8620174342/
- Jiang, Y., Rosenzweig, E. Q., & Gaspard, H. (2018). An expectancy-value-cost approach in predicting adolescent students' academic motivation and achievement. *Contemporary Educational Psychology*, 54(1), 139–152.
- Johansson, P. E., Petersson, G. I., & Nilsson, G. C. (2013). Nursing students' experience of using a personal digital assistant (PDA) in clinical practice - an intervention study. *Nurse Education Today*, 33(10), 1246–1251. https://doi.org/10.1016/j.nedt.2012.08.019
- Johnson, L., Adams Becker, S., Estrada, V., & Freeman, A. (2015). NMC Horizon report: 2015 higher education edition. The New Media Consortium, Austin, TX.
- Johnson, E. M., & Howard, C. (2019). A library mobile device deployment to enhance the medical student experience in a rural longitudinal integrated clerkship. *Journal* of the Medical Library Association, 107(1), 30–42. https://doi.org/10.5195/jmla.2019.442
- Jonassen, D., & Reeves, T. C. (1996). Learning with technology: Using computers as cognitive tools. In D. H. Jonassen (Ed.), *Handbook of research on educational communications and technology* (pp. 693–719). New York: Macmillan.
- Jonassen, D. (1994). Towards a constructivist design model. *Educational Technology*, 34(4), 34–37.
- Jonassen, D. (1999). Designing constructivist learning environment. In & R. CarrChellman (Ed.), *Instructional-design theories and models, building a common knowledge base* (pp. 215–239). Mahwah, NJ: Lawrence Erlbaum Associates.
- Jong, M. S., & Tsai, C. C. (2016). Understanding the concerns of teachers about leveraging mobile technology to facilitate outdoor social inquiry learning: the Edu venture experience. *Interactive Learning Environments*, 24(2), 328–344. https://doi.org/10.1080/10494820.2015.1113710
- Kali, Y., Sagy, O., Kuflik, T., Mogilevsky, O., & Maayan-Fanar, E. (2015). Harnessing technology for promoting undergraduate art education: A novel model that streamlines learning between classroom, museum, and home. *IEEE Transactions* on Learning Technologies, 8(1), 5–17. https://doi.org/10.1109/TLT.2014.2365810.
- Kant, R. (2020). Social media: Attraction or addiction? Asia Pacific Journal of *Education, Arts and Sciences, 7*(1), 1–8. Retrieved from https://www.researchgate.net/publication/339089287
- Katz, L. (2014). Today's lesson: Life in the classroom before cellphones. Retrieved December 8, 2016, from http://www.chronicle.com/article/Todays-Lesson-Life-in-the/148423/
- Kaur, A., Lakra, P., & Kumar, R. (2020). Self-directed Learning Readiness and Learning Styles among Nursing Undergraduates. Retrieved from https://www.researchgate.net/publication/340117963
- Kawalilak, C., Wells, N., Connell, L., & Beamer, K. (2012). E-learning access, opportunities and challenges for aboriginal adult learners located in rural communities. *College Quarterly*, 15(2), 2–15. Retrieved from https://files.eric.ed.gov/fulltext/EJ979430.pdf
- Keegan, D. (1996). Foundations of Distance Education (Volume 3). London, UK,: Routledge; Taylor & Francis.
- Kek, M., & Huijser, H. (2011). Exploring the combined relationships of student and teacher factors on learning approaches and self-directed learning readiness at a Malaysian university. *Studies in Higher Education*, 36(2), 185–198. https://doi.org/10.1080/03075070903519210
- Kennedy, G., Judd, T., Keppell, M., Ginns, C., Crabb, B., & Strugnell, R. (2001). DNA explorer: Computer facilitated learning of bioinformatics using a situated model. In P. Kommers & G. Richards (Ed.), *World Conference on Educational Multimedia, Hypermedia and Telecommunications 2001* (pp. 931–936). Norfolk, VA: AACE.
- Khaddage, F., & Cosío, J. H. (2014). Trends and barriers on the fusion of mobile apps in higher education where to next and how? In M. Searson & M. Ochoa (Ed.), *Proceedings of Society for Information Technology & Teacher Education International Conference 2014* (pp. 903–909). Chesapeake: AACE.
- Khaddage, F., Christensen, R., Lai, W., Knezek, G., Norris, C., & Soloway, E. (2015). A model driven framework to address challengesin a mobile learning environment. *Education and Information Technologies*, 20, 625–640. https://doi.org/10.1007/s10639-015-9400-x
- Kim, B., & Reeves, T. C. (2007). Reframing research on learning with technology: In search of the meaning of cognitive tools. *Instructional Science*, 35, 207–256. https://doi.org/10.1007/s11251-006-9005-2
- Kim, J. H., Aulck, L., Bartha, M. C., et al. (2012). Are there differences in force exposures and typing productivity between touch-screen and conventional keyboard? *Proceedings of the Human Factors and Ergonomics Society Annual Meeting*, 56(1), 1104–1108.
- Kinay, I., & Bagceci, B. (2016). The investigation of the effects of authentic assessment approach on prospective teachers' problem-solving skills. *International Education Studies*, 9(8), 51–60. https://doi.org/10.5539/ies.v9n8p51
- Knowles, M. (1975). *Self-directed Learning: A Guide for Learners and Teachers*. Follet, Chicago, USA.
- Koohestani, H. R., Baghcheghi, N., Karimy, M., Hemmat, M., &, & Shamsizadeh, M. (2019). Lived experiences of nursing students about ethical concerns regarding

mobile learning in educational and clinical contexts. *Journal of Medical Ethics and History of Medicine*, *12*(5), 1–13. https://doi.org/10.18502/jmehm.v12i5.858

- Koole, M. L. (2006). Framework for the rational analysis of mobile education (FRAME): A model for evaluating mobile learning devices. Thesis, Centre for Distance Education, Athabasca University.
- Koole, M. L. (2009). A model for farming mobile learning. In M. Ally (Ed.), *Mobile Learning: Transforming the Delivery of Education and Training, Edmonton*. AU Press, Edmonton.
- Koole, M. L. (2018). Mobile learning, teacher education, and the sociomaterialist perspective: Analysis of the SMS story project. *International Journal of Mobile* and Blended Learning, 10(2), 66–77. https://doi.org/10.4018/IJMBL.2018040106
- Kortum, P. & Sorber, M. (2015). Measuring the usability of mobile applications for phones and tablets. *International Journal of Human-Computer Interaction*, 31(8), 518–529. https://doi.org/10.1080/10447318.2015.1064658
- Koszalka, T. A., & Ntloedibe-Kuswani, G. S. (2010). Literature on the safe and disruptive learning potential of mobile technologies. *Distance Education*, 31(2), 139–157. https://doi.org/10.1080/01587919.2010.498082
- Krasulia, A., & Saks, K. (2020). Students' perceptions towards mobile learning in an English as a foreign language class. *Proceedings - IEEE 20th International Conference on Advanced Learning Technologies, ICALT 2020*, 238–240. https://doi.org/10.1109/ICALT49669.2020.00078
- Krull, G., & Duart, J. (2017). Research trends in mobile learning in higher education: A systematic review of articles (2011 2015). *The International Review of Research in Open and Distance Learning*, 18(7), 1–25. https://doi.org/https://doi.org/10.3991/ijim.v8i4.3991.
- Kuckartz, U. (2014). *Qualitative text analysis: A guide to methods, practice and using software.* SAGE Publications Ltd.
- Kuimova, M., Burleigh, D., Uzunboylu, H., & Bazhenov, R. (2018). Positive effects of mobile learning on foreign language learning. *TEM Journal*, 7(4), 837–841. https://doi.org/10.18421/TEM74-22
- Kumar, B. A., & Chand, S. S. (2019). Mobile learning adoption: A systematic review. *Education and Information Technologies*, 24(1), 471–487. https://doi.org/10.1007/s10639-018-9783-6
- Kumar, B. A., Goundar, M. S., & Chand, S. S. (2019). Usability guideline for mobile learning applications: an update. *Education and Information Technologies*, 24(6), 3537–3553. https://doi.org/10.1007/s10639-019-09937-9
- Kuo, Y. C., & Kuo, Y. T. (2020). Preservice teachers' mobile learning experience: An exploratory study of iPad-enhanced collaborative learning. *Journal of Digital Learning in Teacher Education*, 36(2), 1–13. https://doi.org/10.1080/21532974.2020.1719380
- Kutluk, F. A., & Gülmez, M. (2014). A research about mobile learning perspectives of university students who have accounting lessons. *Procedia Social and Behavioral*

Sciences, 116(9), 291–297.

- Lai, C., & Li, G. (2011). Technology and task-based language teaching: A critical Review. *CALICO Journal*, 28(2), 498–521.
- Lai, C. L., Hwang, G. J., & Chu, H. C. (2017). Prepare your own device and determination (PYOD): a successfully promoted mobile learning mode in Taiwan. *International Journal of Mobile Learning and Organisation*, 11(2), 87. https://doi.org/10.1504/ijmlo.2017.10005261
- Lai, C., & Zheng, D. (2018). Self-directed use of mobile devices for language learning beyond the classroom. *ReCALL*, 30(3), 299–318. https://doi.org/10.1017/S0958344017000258
- Lau, K. S. N., Lo, P., Chiu, D. K.W., Ho, K. K. W., Jiang, T., Zhou, Q., Percy, P., & Allard, B. (2020). Library and learning experiences turned mobile: A comparative study between LIS and non-LIS students. *Journal of Academic Librarianship*, 46(2), 102–113. https://doi.org/10.1016/j.acalib.2019.102103
- Law, E. L. C., & Sun, X. (2012). Evaluating user experience of adaptive digital educational games with Activity Theory. *International Journal of Human Computer Studies*, 70(7), 478–497. https://doi.org/10.1016/j.ijhcs.2012.01.007
- Lee, D. Y., & Lehto, M. R. (2013). User acceptance of YouTube for procedural learning: An extension of the technology acceptance model. *Computers & Education*, 61(2), 193–208.
- Lee, H., Parsons, D., Kwon, G., Kim, J., Petrova, K., Jeong, E., & Ryu, H. (2016). Cooperation begins: encouraging critical thinking skills through cooperative reciprocity using a mobile learning game. *Computers & Education*, 97, 97–115. https://doi.org/10.1016/j.compedu.2016.03.006
- Lee, J., & Song, J. (2019). The impact of group composition and task design on foreign language learners' interactions in mobile-based intercultural exchanges. *ReCALL*, 32(1), 1–22. https://doi.org/10.1017/S0958344019000119
- Lee, S. J., Lee, H., & Kim, T. T. (2018). A study on the instructor role in dealing with mixed contents: How it affects learner satisfaction and retention in e-learning. *Sustainability (Switzerland)*, 10(3). https://doi.org/10.3390/su10030850
- Leis, A., Tohei, A., & Cooke, S. (2015). Smartphone Assisted Language Learning and Autonomy. International Journal of Computer-Assisted Language Learning and Teaching (IJCALLT), 3(5), 75–88. https://doi.org/10.4018/IJCALLT.2015070105
- Leong, K. W., & Latif, R. A. (2018). Digital experience moving toward greater learning experience. *Preparing the Next Generation of Teachers for 21st Century Education*, 126–143. https://doi.org/10.4018/978-1-5225-4080-9.ch008
- Levene, J., & Seabury, H. (2015). Evaluation of mobile learning: Current research and implications for Instructional Designers. *TechTrends*, 59, 46–52. https://doi.org/10.1007/s11528-015-0904-4
- Li, K. C., & Wong, B. T. M. (2016). A review of indicators of success in mobile learning. *Proceedings of the Third International Conference on Open and Flexible Education*, 53–63. Hong Kong, China.

- Li, K. C., Lee, L. Y. K., Wong, S. L., Yau, I. S. Y., & Wong, B. T. M. (2019). The effects of mobile learning for nursing students: An integrative evaluation of learning process, learning motivation, and study performance. *International Journal of Mobile Learning and Organisation*, 13(1), 51–67. https://doi.org/10.1504/IJMLO.2019.096471
- Liamputtong, P. (2011). *Focus group methodology: Principle and practice*. SAGE Publications Ltd.
- Lichtman, M. (2013). *Qualitative Research in Education: A User's Guide*. Thousand Oaks, CA: SAGE Publications Ltd.
- Lim, C. P., & Churchill, D. (2016). Mobile learning. Interactive Learning Environments. *Interactive Learning Environments*, 24(2), 273–276. https://doi.org/10.1080/10494820.2015.1113705
- Lim, C. P., & Wang, L. (2017). Blended learning for quality higher education: Selected case studies on implementation from Asia-Pacific. United Nations Educational, Scientific and Cultural Organization.
- Lim, W. N. (2017). Improving student engagement in higher education through mobilebased interactive teaching model using socrative. *IEEE Global Engineering Education Conference, EDUCON*, (April), 404–412. https://doi.org/10.1109/EDUCON.2017.7942879
- Lincoln, Y., & Guba, E. (1986). But is it rigorous? Trustworthiness and authenticity in naturalistic evaluation. In D. Williams (Ed.), *Naturalistic evaluation* (pp. 73–84). San Francisco, CA: Jossey-Bass.
- Lindner, C., Nagy, G., Arhuis, W. A. R., & Retelsdorf, J. (2017). A new perspective on the interplay between self-control and cognitive performance: Modeling progressive depletion patterns. *PloS One*, *12*(6), e0180149.
- Liu, G.-Z., Kuo, F.-R., Shi, Y.-R., & Chen, Y.-W. (2015). Dedicated design and usability of a context-aware ubiquitous learning environment for developing receptive language skills: A case study. *International Journal of Mobile Learning* and Organisation, 9(1), 49–65. https://doi.org/https://doi.org/10.1504/ IJMLO.2015.069717
- Liu, G. Z., Chen, J. Y., & Hwang, G. J. (2017). Mobile-based collaborative learning in the A, fitness center: a case study on the development of english listening comprehension with Application, Context-aware. *British Journal of Educational Technology.*, 49(2), 305–320. https://doi.org/doi.org/10.1111/bjet.12581
- Liu, K. S., & Hsueh, S. L. (2016). Effects of digital teaching on the thinking styles and the transfer of learning of the students in department of interior design. *Eurasia Journal of Mathematics, Science & Technology Education*, 12, 1697–1706. https://doi.org/10.12973/eurasia.2016.1563a
- Liu, Y., Li, H., & Carlsson, C. (2010). Factors driving the adoption of m-learning: An empirical study. *Computer Education*, 55(3), 1211–1219. https://doi.org/10.1016/j.compedu.2010.05.018.
- Loh, X. K., Lee, V. H., Loh, X. M., Garry, T., Wei-Han, O., Keng-Boon, D., Yogesh, K.

(2021). The Dark Side of Mobile Learning via Social Media: How Bad Can It Get? *Information Systems Frontiers*, 1, 1–18. https://doi.org/10.1007/s10796-021-10202-z

- Lok, W. F., & Hamzah, M. (2021). Student experience of using mobile devices for learning chemistry. *International Journal of Evaluation and Research in Education*, 10(3), 893–900. https://doi.org/10.11591/ijere.v10i3.21420
- Long, J., Lui, T. Q., Liao, Y. H., Qi, C., He, H. Y. Chen, S. B., & Billieux, J. (2016). Prevalence and correlates of problematic smartphone use in a large random sample of Chinese undergraduates. *BMC Psychiatry*, 16(1), 1–12. https://doi.org/10.1186/s12888-016-1083-3.
- Long, M. (1985). A role for instruction in second language acquisition: Task-based language teaching. In K. Hyltenstam & M. Pienemann (Ed.), *Modelling and assessing second language acquisition* (pp. 77–100). Clevedon: Multilingual Matters.
- Long, M. (2005). Methodological issues in learner needs analysis. In M. Long (Ed.), *Second language needs analysis* (pp. 19–76). Cambridge, MA: Cambridge University Press.
- Long, M. H. (2016). In defence of tasks and TBLT: Nonissues and real issues. *Annual Review of Applied Linguistics*, 36, 5–33. https://doi.org/10.1017/S0267190515000057
- Loschky, L., & Bley-Vroman, R. (1993). Grammar and task-based methodology. In & S. G. G. Crookes (Ed.), *Tasks and language learning: Integrating theory and practice* (pp. 123–167). Clevedon Avon: Multilingual Matters.
- Lucas, M. (2018). External barriers affecting the successful implementation of mobile educational interventions. *Computers in Human Behavior*, 5(1), 1–7. https://doi.org/10.1016/j.chb.2018.05.001
- Macher, D., Paechter, M., Papousek, I., & Ruggeri, K. (2012). Statistics anxiety, trait anxiety, learning behavior, and academic performance. *European Journal of Psychology of Education*, 27(4), 483–498. https://doi.org/10.1007/s10212-011-0090-5
- Mahat, J., Ayub, A. F. M., Luan, S., & Wong. (2012). An Assessment of Students' Mobile Self-Efficacy, Readiness and Personal Innovativeness towards Mobile Learning in Higher Education in Malaysia. *Procedia - Social and Behavioral Sciences*, 64, 284–290. https://doi.org/10.1016/j.sbspro.2012.11.033
- Makoe, M. (2012). "Exploring the use of MXit: A cell phone social network to facilitate learning in distance education." *Open Learning*, 25(3), 251–257. Retrieved from http://dx.doi.org/10.1080/02680513.2010.512099
- Malaysian Ministry of Higher Education. (2020). Press Release by the Malaysian Ministry of Higher Education. Retrieved from https://www.nst.com.my/education/2020/06/599586/overseas-dream-put-hold.
- Malekian, M., Ghiyasvandian, S., Cheraghi, M. A., & Hassanzadeh, A. (2015). Iranian clinical nurses' readiness for self-directed learning. *Global Journal of Health*

Science, 8(1), 157–164. Retrieved from https://doi.org/10.5539/gjhs.v8n1p157

- Mandell, H. (2015). No phones, please, this is a communications class. Retrieved from http://www.chronicle.com/article/No-Phones-Please-This-Is-a/231235/
- Mann, E. G., Medves, J., & Vandenkerkhof, E. G. (2015). Accessing best practice resources using mobile technology in an undergraduate nursing program: a feasibility study. *Computers, Informatics, Nursing: CIN, 33*(3), 122–128. https://doi.org/10.1097/CIN.00000000000135
- Mansor, N. R., Rahman, A. H. A., Ahmad Tajuddin, A. J., Rashid, R. A., & Chua, N. A. (2021). New norms of online teaching and learning: Covid-19 semester experience for Universiti Malaysia Terengganu students. *Academic Journal of Interdisciplinary Studies*, 10(4), 248–260. https://doi.org/10.36941/AJIS-2021-0114
- Martyn, J., Larkin, K., Sander, T., Yuginovich, T., & Jamieson-Proctor, R. (2014). Distance and devices — Potential barriers to use of wireless handheld devices. *Nurse Education Today*, 34(3), 457–461. https://doi.org/10.1016/j.nedt.2013.04.021
- Mccurdy, R., Nickels, M., & Bush, S. B. (2020). Problem-based design thinking tasks: Engaging student empathy in STEM. *Electronic Research in Science & Mathematics Education*, 24(2), 22–55.
- McGovern, E., & Baruca, A. (2013). Want to enroll in a MOOC? No thanks, my professors have their own videos. *Journal for Advancement of Marketing Education*, 21(2), 64–76. Retrieved from http://digitalcommons.sacredheart.edu/wcob\_fac
- Merriam, S., & Caffarella, R. (1999). Learning in Adulthood: A Comprehensive Guide. Jossey-Bass.
- Merriman, S. (1998). *Qualitative research and case study applications in education*. San Francisco: Jossey-Bass.
- Mertens, D. (2010). *Research and evaluation in education and psychology*. Thousand Oaks, CA: SAGE Publications Ltd.
- Meyer, B., Haywood, N., Sachdev, D., & Faraday, S. (2008). 'What is independent learning and what are the benefits for students?' In *Schools and Families Research Report*. London: Department for Children Schools and Families.
- Miles, M.B., & Huberman, A. M. (1984). Qualitative data analysis. In *A sourcebook of new methods*. Beverly Hills, LA.: SAGE Publications Ltd.
- Ministry of Education Malaysia. (2013). *Malaysia Education Blueprint 2013 2025*. Retrieved from http://linkinghub.elsevier.com/retrieve/pii/S0742051X10001435
- Mohamad, M., Kamarul, M., & Irwan, A. R. (2018). Factors affecting MOOCs continuance intention in Malaysia. *Journal of Humanities, Language, Culture and Business*, 2(7), 61–72.
- Mohammadi, H. (2015). Investigating users' perspectives on e-learning: An integration of TAM and IS success model. *Computers in Human Behavior*, 45, 359–374. https://doi.org/10.1016/j.chb.2014.07.044
- Montilus, K., & Jin, T. (2020). Embedding Self-Management into Mobile Learning Experiences. *The Emerging Learning Design Journal*, 7(1), 3. Retrieved from

https://digitalcommons.montclair.edu/eldj/vol7/iss1/3

- Moodlerooms. (2012). About Moodle. Retrieved June 22, 2012, from http://www.moodlerooms.com/resources/moodle-resources/
- Moore, M. G. (1989). Editorial: Three types of interaction. *American Journal of Distance Education*, *3*, 1–6.
- Munge, B., Thomas, G., & Heck, D. (2018). *Outdoor Fieldwork in Higher Education : Learning* https://doi.org/10.1177/1053825917742165
- Munoz-Reyes, P. (2014). Bridging the Digital and Knowledge Gap in Rural Communities through Mobile Learning. Retrieved May 14, 2019, from wise ed.review website: http://www.wise-qatar.org/mobile-learning-rural-communities
- Murillo-Zamoranoa, L. R., & Montanero, M. (2018). Oral presentations in higher education: a comparison of the impact of peer and teacher feedback. Assessment & Evaluation in Higher Education, 43(1), 138–150. https://doi.org/https://doi.org/10.1080/02602938.2017.1303032
- Nahid, Y., & Mostafam, G. (2020). Investigating the role of formative mobile based assessment in vocabulary learning of pre-intermediate EFL learners in comparison with paper based assessment. *Turkish Online Journal of Distance Education*, 21(1), 181–196. https://doi.org/10.17718/tojde.690390
- Ng, S. C., Lui, A. K., & Ngao, S. H. (2013). An interactive mobile learning platform for teaching and learning Chinese language in secondary school environment. *Communications in Computer and Information Science*, 407(5), 135–147.
- Ng, S. F., Azlan, M. A. K., Kamal, A. N. A., & Manion, A. (2020). A quasi-experiment on using guided mobile learning interventions in ESL classrooms: Time use and academic performance. *Education and Information Technologies*, 25(6), 4699– 4719. https://doi.org/10.1007/s10639-020-10191-7
- Nicol, D. J. (2010). From monologue to dialogue: improving written feedback processes in mass higher education. *Assessment & Evaluation in Higher Education*, 35(5), 501–517. https://doi.org/10.1080/02602931003786559
- Nielsen, J. (1993). Usability engineering. San Francisco: Morgan Kaufmann.
- Nikou, S. A., & Economides, A. A. (2013). Student achievement in paper, computer/web and mobile based assessment. *BCI'13*. Thessaloniki, Greece.
- Nikou, S. A., & Economides, A. A. (2014). A model for Mobile-based Assessment adoption based on Self-Determination Theory of Motivation. *International Conference on Interactive Mobile Communication Technologies and Learning* (*IEEE*), 86–90. https://doi.org/10.1109/ imctl.2014.7011111
- Nikou, S. A., & Economides, A. A. (2016a). An outdoor mobile-based assessment activity: Measuring students' motivation and acceptance. *International Journal of Interactive Mobile Technologies*, 10(4), 11–17. https://doi.org/10.3991/ijim.v10i4.5541
- Nikou, S. A., & Economides, A. A. (2016b). The impact of paper-based, computerbased and mobile-based self-assessment on students' science motivation and

achievement. *Computers in Human Behavior*, 55(B), 1241–1248. https://doi.org/10.1016/j.chb.2015.09.025

- Nikou, S. A., & Economides, A. A. (2017a). Mobile-based assessment: integrating acceptance and motivational factors into a combined model of self-determination theory and technology acceptance. *Computers in Human Behavior*, 68, 83–95. https://doi.org/10.1016/j.chb.2016.11.020
- Nikou, S. A., & Economides, A. A. (2017b). Mobile-based assessment: investigating the factors that influence behavioral intention to use. *Computers and Education*, 109, 56–73. https://doi.org/10.1016/j.compedu.2017.02.005
- Nikou, S. A., & Economides, A. A. (2017c). "Mobile-based assessment: investigating the factors that influence behavioral intention to use." *Computers & Education*, 109, 56–73.
- Nikou, S. A., & Economides, A. A. (2018). Mobile-based assessment: A literature review of publications in major referred journals from 2009 to 2018. *Computers and Education*, 125(17), 101–119. https://doi.org/10.1016/j.compedu.2018.06.006
- Nikou, S. A., & Economides, A. A. (2019). A comparative study between a computerbased and a mobile- based assessment Usability and user experience. *Interactive Technology and Smart Education*, *16*(4), 381–391. https://doi.org/10.1108/ITSE-01-2019-0003
- Nikou, S. A., & Economides, A. A. (2016). The impact of paper-based, computer-based and mobile-based self-assessment on students' science motivation and achievement. *Computers* in *Human Behavior*, 55, 1241–1248. https://doi.org/10.1016/j.chb.2015.09.025
- Nordin, N. M., Embi, M. A., Norman, H., & Panah, E. (2017). A historical review of mobile learning research in Malaysia and its implications for Malaysia and the Asia-Pacific region. In *In Mobile Learning in Higher Education in the Asia-Pacific Region* (pp. 137–150). Retrieved from https://doi.org/10.1007/978-981-10-4944-6 7
- Norman, N. (2011). Mobile Learning Made Easy. *Training & Development*, 65(12), 52–55.
- Nunan, D. (1989). *Designing tasks for the communicative classroom*. Cambridge, MA: Cambridge University Press.
- Nunan, D. (1997). Designing and Adapting Materials to Encourage Learner Autonomy. In *Autonomy and independence in language learning* (In P. Bens, pp. 192–203). Harlow, England: Longman.
- Olmos, E., Cavalcanti, J. F., Soler, J. L., Contero, M., & Alcaniz, M. (2018). Mobile virtual reality: A promising technology to change the way we learn and teach. In S. Yu, et al. (Ed.), *Mobile and ubiquitous learning* (pp. 95–106). Singapore: Springer.
- Omar, M., Ahmad, M., Yasin, A., Ibrahim, H., Ghazali, O., & Khamis, S. (2018). WiFi usage and student performance: Examining the interrelations for UUM students. *AIP Conference Proceedings*, 2016(September). https://doi.org/10.1063/1.5055517
- Oppenheimer, T. (1997). The computer delusion. The Atlantic Monthly, 280(1), 45-62.

- Oyedele, A., & Simpson, P. M. (2007). An empirical investigation of consumer control factors on intention to use selected self-service technologies. *International Journal* of Service Industry Management, 18(3), 287–306. Retrieved from https://doi.org/10.1108/09564230710751497
- Paivio, A. (1971). *Imagery and verbal processing* (H. R. & Winston., Ed.). New York, New York, USA.
- Pandey, M., Litoriya, R., & Pandey, P. (2018). Mobile APP development based on agility function. *Ingénierie Des Systèmes d'Information*, 23(6), 19–44. Retrieved from https://doi.org/10.3166/ISI.23.6.19-44
- Papadakis, S. (2019). Apps to Promote Computational Thinking Concepts and Coding Skills in Children of Preschool and Pre-Primary School Age,. https://doi.org/10.4018/978-1-7998-1486-3.ch006
- Park, E., & Kim, K. J. (2013). User acceptance of long-term evolution (LTE) services: an application of extended technology acceptance model. *Program: Electron. Lib. Info. Syst.*, *47*(2), 188–205. https://doi.org/http://dx.doi.org/10.1108/00330331311313762
- Park, Y. (2011). A pedagogical framework for mobile learning: Categorizing educational applications of mobile technologies into four types. *International Review of Research in Open and Distributed Learning*, 12(2), 78–102. https://doi.org/10.19173/irrodl.v12i2.791
- Passaribu, T. A. (2020). Challenging EFL strudents to read: Digital reader response tasks to foster learner autonomy. *Teach English with Technology*, 6(3), 21–41.
- Pekrun, R., Goetz, T., Daniels, L. M., Stupnisky, R. H., & Perry, R. P. (2010). Boredom in achievement settings: Exploring control-value antecedents and performance outcomes of a neglected emotion. *Journal of Educational Psychology*, 102(3), 531– 549. https://doi.org/10.1037/a0019243
- Pennell, R., Durham, M., Ozog, M., & Spark, A. (1997). Writing in context: Situated learning on the web. In Kevill, R., Oliver, R., & Phillips, R. (Ed.), What works and why: Proceedings of the 14th Annual Conference of the Australian Society for Computers in Learning in Tertiary Education (pp. 463–469). Perth, WA: Curtin University.
- Perera, C. J., Zainuddin, Z., & Piaw, C. Y., Cheah, K. S. L., & Asirvatham, D. (2020). The Pedagogical Frontiers of Urban Higher Education : Blended Learning and Co-Lecturing. SAGE Open, 1(401), 1–25. https://doi.org/10.1177/0013124519894966
- Petersen, S. A., Procter-Legg, E., & Cacchione, A. (2014). LingoBee: Engaging mobile language learners through crowd-sourcing. *International Journal of Mobile and Blended Learning*, 6(2), 58–73. https://doi.org/https://doi.org/10.4018/ijmbl.2014040105
- Phillips, B. N., Turnbull, B. J., & He, F. X. (2015). Assessing readiness for self-directed learning within a non-traditional nursing cohort. *Nurse Education Today*, 35(3), e1– e7. https://doi.org/10.1016/j.nedt.2014.12.003
- Pinto, M., Caballero, D., Sales, D., & Pascual, R. F. (2020). MOBILE-APPS

questionnaire: Developing and validating a scale to measure the attitudes and perceptions of undergraduate students on mobile information literacy. *Journal of Librarianship* and *Information* Science, 00(0), 1–10. https://doi.org/10.1177/0961000620902260

- Poikela, P., Ruokamo, H., & Teräs, M. (2015). Comparison of meaningful learning characteristics in simulated nursing practice after traditional versus computer-based simulation method: A qualitative videography study. *Nurse Education Today*, 35(2), 373–382. https://doi.org/10.1016/j.nedt.2014.10.009
- Polly, D., Mims, C., Shepherd, C. E., & Inan, F. (2010). Evidence of impact: Transforming teacher education with preparing tomorrow's teachers to teach with technology (PT3) grants. *Teaching and Teacher Education*, 26(4), 863–870. https://doi.org/10.1016/j.tate.2009.10.024
- Porumb, I., Tardini, S., Bergamin, P., & Picco-Schwendener, A. (2013). Bringing the technical and didactical perspective together in the design and development of a Moodle App within the FRAME (Framework for the Rational Analysis of Mobile Education) model. Retrieved from http://research.moodle.net/21/
- Pountney, R., Parr, S., & Whittaker, V. (2002). Communal Constructivism and Networked Learning: Reflections on a Case Study. *Proceedings of the Networked Learning* 2002 Conference. Retrieved from http://www.networkedlearningconference.org.uk/past/nlc2002/proceedings/papers/ 30.htm.
- Power, R. (2015). A framework for promoting teacher self-efficacy with mobile reusable learning objects. Athabasca University, Athabasca, AB, Canada.
- Prabhu, N. (1987). Second language pedagogy. Oxford, UK: Oxford University Press.
- Preece, J., Rogers, Y., & Sharp, H. (2002). Interaction Design: Beyond Human-Computer Interaction (2nd ed, Ed.). Hoboken, NJ, USA: Wiley Publishing, Inc.
- Prosser, M., Ramsden, P., Trigwell, K., & Martin, E. (2003). Dissonance in experience of teaching and its relation to the quality of student learning. *Studies in Higher Education Volume*, 28(1), 37–48. https://doi.org/10.1080/0307507032000050503
- Punch, F. K. (2009). *Introduction to research methods in education*. London: SAGE Publications Ltd.
- Qomariyah, N., Kolonial, P. A., Imron, R. M., Styawan, A., Shaleh, Z. C., & Lestari, P. T. (2020). A mobile-based assessment in chemistry: Indonesian pupils' perception. *ACM International Conference Proceeding Series*, 10–12. https://doi.org/10.1145/3377571.3377582
- Qureshi, I., Ilyas, K., Yasmin, R., & Whitty, M. (2012). Challenges of implementing elearning in a Pakistani university. *Knowledge Management & E-Learning: An International Journal*, 4(3), 310–324. https://doi.org/10.34105/j.kmel.2012.04.025
- Rachayon, S., & Soontornwipast, K. (2019). The effects of task-based instruction using a digital game in a flipped learning environment on English oral communication ability of Thai undergraduate nursing students. *English Language Teaching*, 12(7), 12. https://doi.org/10.5539/elt.v12n7p12

- Ramadhan, S., Atmazaki., Sukma, E., & Indriyani, V. (2021). Design of task-based digital language teaching materials with environmental education contents for middle school students. *Journal of Physics: Conference Series*, 1811(012060), 1–8. https://doi.org/10.1088/1742-6596/1811/1/012060
- Raposo, M., Cebrián, R. V., & Cebrián de la, S. M. (2015). E-rubric for the assessment of skills and content in the external practices: Legal aspects. *ECER* 2015. https://doi.org/10.13140/RG.2.1.3917.2320
- Rashid, T., & Asghar, H. M. (2016). Technology use, self-directed learning, student engagement and academic performance: Examining the interrelations. *Computers in Human Behavior*, 63, 604–612. https://doi.org/10.1016/j.chb.2016.05.084
- Richardson, P., Dellaportas, S., Perera, P., & Richardson, B. (2013). Asian review of accounting article information. *Asian Review of Accounting*, 21(1), 4–26. https://doi.org/10.1108/ARA-11-2013-0076
- Rios, T., Elliott, M., & Mandernach, B. J. (2018). Efficient instructional strategies for maximizing online student satisfaction. *Journal of Educators Online*, 15(3), 158– 166.
- Ritchie, S. M. (2016). Self-assessment of video-recorded presentations: Does it improve skills? *Active Learning in Higher Education*, 17(3), 207–221. https://doi.org/https://doi.org/10.1177%2F1469787416654807
- Rivera, K. D. (2018). 'Use Your Feelings': emotion as a tool for qualitative research. In G. Cassell, C. Cunliffe, A.L., Grandy (Ed.), *The SAGE Handbook of Qualitative Business and Management Research Methods* (pp. 450–467). Thousand Oaks, CA: SAGE Publications Ltd.
- Robertson, L. (2018). Toward an epistemology of active learning in higher education and its promise. In et al. Papadopoulo P (Ed.), Active Learning Strategies in Higher Education: Teaching for Leadership, Innovation and Creativity. (pp. 17– 44). London: Emerald Publishing.
- Robinson, L. J., Stevens, L. H., Threapleton, C. J. D., Vainiute, J., Williams, M. R. H., & Gallagher, P. (2012). Effects of intrinsic and extrinsic motivation on attention and memory. *Acta Psychologica*, 141(2), 243–249.
- Rodis, J., Aungst, T. D., Brown, N. V., Cui, Y., & Tam, L. (2016). Enhancing pharmacy student learning and perceptions of medical apps. *JMIR MHealth and UHealth*, 4(2), 55–65. https://doi.org/10.2196/mhealth.4843.
- Rodrigo-ruiz, D. (2016). Effect of teachers emotions on their students : Some evidence. *Journal of Education & Social Policy*, 3(4), 73–79.
- Rogers, C. R. (1968). A practical plan for educational revolution. In R. R. Goulet. (Ed.), *Educational Change: The Reality and the Promise*. New York: Citation Press.
- Ross, J. G., & Myers, S. M. (2017). The current use of social media in undergraduate nursing education: A review of the literature. *Computers Informatics Nursing*, 19085(7), 20–40. https://doi.org/10.1097/CIN.0000000000342
- Rossing, J. P., Miller, W. M., Cecil, A. K., & Stamper, S. E. (2012). *iLearning*: The future of higher education? Student perceptions on learning with mobile tablets.

12(2), 1–26.

- Ryan, R. M., & Deci, E. L. (2000). Self-determination theory and the facilitation of intrinsic motivation, social development and well-being. *American Psychologist*, 55, 68–78.
- Saadé, R. G., Nebebe, F., & Kira, D. (2015). Characterising computer experience and anxieties differences between Mid-dle Eastern and Western Students in eLearning. *Proceedings of Informing Science & IT Education Conference (InSITE)*, 353–365.
- Sakulwichitsintu, S. (2019). Learner behavior towards mobile learning at the Open University in Thailand. ACM International Conference Proceeding Series, 233–236. https://doi.org/10.1145/3369199.3369247
- Santos, P., Hernández-Leo, D., Pérez-Sanagustín, M., & Blat, J. (2012). Modeling the computing based testing domain extending IMS QTI: Framework, models and exemplary implementations. *Computers in Human Behavior*, 28(5), 1648–1662. Retrieved from http://dx.doi.org/10.1016/j.chb.2012.04.003
- Saraydaryan, J., Jumel, F., & Simonin, O. (2018). Dynamic multi-Agent patrolling: Robotic application for service delivery to mobile people. *Revue d'Intelligence Artificielle*, 31(4), 379–400. Retrieved from https://doi.org/10.3166/RIA.31.379-400
- Saskatchewan Education. (1988). Understanding the Common Essential Learnings : a Handbook for Teachers.
- Schlairet, M. C. (2012). PDA-assisted simulated clinical experiences in undergraduate nursing education: A pilot study. *Nursing Education Perspectives*, 33(6), 391–394.
- Schön, D. (1987). A review of Educating the Reflective Practitioner. San Francisco: Jossey-Bass.
- Schwandt, T. (2007). Judging Interpretations. In *Wiley Periodicals, Inc.* (Vol. 114). https://doi.org/10.1002/ev.223
- Seligman, M. E. F. (2003). The past and future of positive psychology. In Flourishing: Positive Psychology and the Life Well-Lived. *American Psychological Association:* Washington, DC, USA, 11–20.
- Sharif, Z., Mohd Ariff, A. H., Abdullah, Z., & Abu Bakar, F. (2021). Blended Learning Readiness and Its Way Forward: the Case of Undergraduates of Universiti Utara Malaysia. *Practitioner Research*, 3(6), 99–120. https://doi.org/10.32890/pr2021.3.5
- Shariffudin, R. S., Julia-Guan, C. H., Dayang, T., Mislan, N., & Lee, M. F. (2012). Mobile learning environments for diverse learners in higher education. *International Journal of Future Computer and Communication*, 1(1), 32–45.
- Sharples, M., de Roock, R., Ferguson, R., Gaved, M., Herodotou, C., Koh, E., KukulskaHulme, A., Looi, C. K., McAndrew, P., Rienties, B., & Weller, M. (2016). Innovating pedagogy 2016: open university innovation report 5. In *Institute of Educational Technology. The Open University*.
- Shearer, R. L., Aldemir, T., Hitchcock, J., Resig, J., Driver, J., & Kohler, M. (2019). What students want: A vision of a future online learning experience grounded in distance education theory. *American Journal of Distance Education*, 34(1), 36–52.

https://doi.org/10.1080/08923647.2019.1706019

- Shepperd, R. S. (2002). *Predictors of students success in distance education courses*. West Virginia University: Morgantown, WV.
- Shneiderman, B., & Plaisant, C. (2004). *Designing the user interface: Strategies for effective human-computer interaction*, (4th ed.). Toronto, ON, Canada: Pearson Education Inc.
- Shuib, M., Norbaya Azizan, S., & Ganapathy, M. (2018). Mobile Learning Readiness among English Language Learners in a Public University in Malaysia. *Pertanika J. Soc. Sci. & Hum*, 26(3), 1491–1504.
- Sithole, S., Chandler, P., Abeysekera, I., & Paas, F. (2017). Benefits of guided selfmanagement of attention on learning accounting. *Journal of Educational Psychology*, 109(2), 220–232.
- Sithole, T. (2014). Bringing technology to rural schools In Zimbabwe. Retrieved from http://www.globalgiving.org/projects/bringing-technology-to-rural-schools-in-zimbabwe/updates/
- Smith, A. (2017). How scrolling can make (or break) your user experience. UsabilityGeek.
- Snowball, J. D., & McKenna, S. (2017). Student-generated content: An approach to harnessing the power of diversity in higher education. *Teaching in Higher Education*, 22(5), 604–618. https://doi.org/10.1080/13562517.2016.1273205
- Soliman, M., & Al-Shaikh, G. (2015). Readiness for self-directed learning among first year Saudi medical students: A descriptive study. *Pakistan Journal of Medical Sciences*, 31(4), 799–802. https://doi.org/10.12669/pjms.314.7057
- Sophonhiranrak, S. (2021). Features, barriers, and influencing factors of mobile learning in higher education: A systematic review. *Heliyon*, 7(4), 1–10. https://doi.org/10.1016/j.heliyon.2021.e06696
- Stake, R. E. (2005). *The Art of Case Study Research*. Thousand Oaks, CA: SAGE Publications Ltd.
- Stanojevic, L., & Rakic, B. (2018). Mobile technology in higher education-a student perspective on learning with mobile computing devices. In Successful Implementation of Information Technology: It, Marketing, Education and Business Working Together for Business Success. London: Silver and Smith Publishers.
- Statista. (2020). Smartphone market in Malaysia statistics and facts. Retrieved from Statista Research Department website: https://www.statista.com/topics/6615/smartphones-in-malaysia/
- Steel, C. (2012). Fitting learning into life: Language students' perspectives on benefits of using mobile apps. *ASCILITE 2012 Annual Conference of the Australian Society for Computers in Tertiary Education*, (January 2012), 875–880.
- Stockdale, S. L., & Brockett, R. G. (2011). Development of the PRO-SDLS: A measure of self-direction in learning based on the personal responsibility orientation model. *Adult Education Quarterly*, 61(2), 161–180. https://doi.org/10.1177/0741713610380447

- Stowe, K., von Freymann, J., & Schwartz, L. (2011). Assessing active learning and skills training through alumni and current student views. *Journal of Case Studies in Accreditation and Assessment*, 2, 1–13.
- Strudler, N. & Wetzel, K. (2011). Electronic portfolios in teacher education: Forging a middle ground. *Journal of Research on Technology in Education*, 44(2), 161–173. https://doi.org/10.1080/15391523.2011.10782584
- Sun, D., & Looi, C. K. (2017). Boundary interaction: Towards developing a mobile technology-enabled science curriculum to integrate learning in the informal spaces. *British Journal of Educational Technology*, 49(3), 505–515. https://doi.org/10.1111/bjet.12555
- Sung, Y. T., Chang, K. E., & Yang, J. M. (2015). How effective are mobile devices for language learning? A meta-analysis. *Educational Research Review*, 16(2), 68–84. https://doi.org/10.1016/j.edurev.2015.09.001
- Symon, G. (2004). *Qualitative research diaries*. *Essential guide to qualitative methods in organizational research*.
- Tabuenca, B., Kalz, M., Drachsler, H., & Specht, M. (2015). Time will tell: The role of mobile learning analytics in self-regulated learning. *Computers & Education*, 89(6), 52–74.
- Tai, Y. (2012). Contextualizing a MALL: Practice Design and Evaluation Yaming. Journal of Educational Technology & Society, 15(2), 220–230.
- Talan, T. (2020). The effect of mobile learning on learning performance: A metaanalysis study. *Educational Sciences: Theory and Practice*, 20(1), 79–103.
- Tashakkori, A., & Teddlie, C. (1998). Mixed Methodology: Combining the Qualitative and Quantitative Approaches. Thousand Oaks, CA: SAGE Publications Ltd.
- Taylor, J. A. (2003). Managing staff development for online education: A situated learning model. *Journal of Higher Education Policy and Management*, 25(1), 26– 40.
- Terzis, V., & Economides, A. A. (2011). "The acceptance and use of computer based assessment". *Computers and Education*, *56*(4), 1032–1044.
- Thurmond, V. A. (2003). Examination of interaction variables as predictors of students' satisfaction and willingness to enroll in future Web-based courses while controlling for student characteristics. (University of Kansas. Parkland, FL). Retrieved from http://www.dissertation.com/library/1121814a.htm
- Thuy, T., & Dall'Alba, G. (2014). Authentic assessment for student learning: An ontological conceptualisation. *Educational Philosophy and Theory*, 46(7), 778–791.
- Ting, Y. L. (2012). The pitfalls of mobile devices in learning: A different view and implications for pedagogical design. *Journal of Education Computer Resource*, 46(2), 119–134. https://doi.org/10.2190/EC.46.2.a.
- Titchen, A., Cardiff, S., & Biong, S. (2017). The knowing and being of person-centred research practice across worldviews: an epistemological and ontological framework. In T. Van Dulmen, S., Eide, H., Skovdahl, K. and Eide (Ed.), *Person-centred Healthcare Research* (pp. 31–50). Chichester, UK: Wiley Blackwell.

- Tondeur, J., van Braak, J., Sang, G., Voogt, J., Fisser, P., & Ottenbreit-Leftwich, A. (2012). Preparing pre-service teachers to integrate technology in education: A synthesis of qualitative evidence. *Computers & Education*, 59(1), 134–144.
- Topali, P., Paraskevi, A. O. A., & Alejandra, M.-M., Sara, L., Villagrá, S., & Yannis, D. E. E. (2019). Exploring the problems experienced by learners in a MOOC implementing active learning pedagogies. *Springer*, 4(5), 81–90. https://doi.org/10.1007/978-3-030-19875-6
- Traxler, J. (2002). Evaluating m-learning. Proceedings of MLEARN, University of Birmingham: European Workshop on Mobile and Contextual Learning, 63–64.
- Tseng, T. H., Tai, Y., Tsai, S. P., & Ting, Y. L. (2018). Students' self-authoring mobile App for integrative learning of STEM. *International Journal of Electrical Engineering Education*, 1–12. https://doi.org/10.1177/0020720918800438
- Udell, C. (2012). *Learning everywhere: How mobile content strategies are transforming training*. Nashville. TN: Rockbench Publishing Corp.
- Valk, J.-H., Rashid, A. T., & Elder, L. (2010). Using mobile phones to improve educational outcomes: An analysis of evidence from Asia. *The International Review of Open and Distributed Learning*, 11(1). Retrieved from http://www.irrodl.org/index.php/irrodl/article/view/794/1487
- Van de Mortel, T. F. (2008). Faking it: social desirability response bias in self-report research. *The Australian Journal of Advanced Nursing*, 25(4), 40–48.
- Vavoula, G. N. (2005). D4.4: A Study of Mobile Learning Practices. Internal report of MOBIlearn project.
- Veletsianos, G., & Shepherdson, P. (2016). A systematic analysis and synthesis of the empirical MOOC literature published in 2013 to 2015. *International Review of Research in Open and Distributed Learning*, 17(2), 198–221. https://doi.org/10.19173/irrodl.v17i2.2448
- Veletsianos, G., Collier, A., & Schneider, E. (2015). Digging deeper into learners' experiences in MOOCs: Participation in social networks outside of MOOCs, note taking and contexts surrounding content consumption. *British Journal of Educational Technology*, 46(3), 570–587. https://doi.org/10.1111/bjet.12297
- Venkatesh, N. (2014). Analysis on Massive Open Online Courses (MOOC): Opportunities and challenges towards 21st century online education. *International Journal of Application or Innovation in Engineering & Management*, 3(7), 1–14.
- Vivian, R. (2011). University students' informal learning practices using Facebook: Help or hindrance? *Communications in Computer and Information Science*, 177 *CCIS*, 254–267. https://doi.org/10.1007/978-3-642-22383-9\_21
- Vygotsky, L. S. (1978). *Mind in Society: The Development of Higher Psychological Processes*. Cambridge, MA: Harvard University Press.
- Wai, I. S. H., Ng, S. S. Y., & Chiu, D. K. W. (2018). Exploring undergraduate students' usage pattern of mobile apps for education. *Journal of Librarianship and Information Science*, 50(1), 34–47.
- Wang, S., & Higgins, M. (2006). Limitations of mobile phone learning. Jalt Call

Journal, 2(1), 3-14. https://doi.org/https://doi.org/10.29140/jaltcall.v2n1.18

- Wang, S., & Smith, S. (2013). Reading and grammar learning through mobile phones. *Language Learning & Technology*, 17(3), 117–134.
- Wang, Y. S., Wu, M. C., & Wang, H. Y. (2009). Investigating the determinants and age and gender differences in the acceptance of mobile learning. *British Journal of Educational Technology*, 40(1), 92–118. https://doi.org/10.1111/j.1467-8535.2007.00809.x
- Waragai, I., Raindl, M., Ohta, T., & Miyasaka, K. (2016). Mobile assisted language learning and mnemonic mapping – The loci method revisited. In L. and In Papadima-Sophocleous, S., Bradley & S. (eds. . Thouësny (Eds.), CALL communities and culture – Short papers from EUROCALL 2016 (pp. 462–467). https://doi.org/https://doi.org/10.14705/rpnet.2016.eurocall2016.607
- Warring, S. (2013). A model of independent learning applied to the online context. *The Quarterly Review of Distance Education*, 14(1), 25–34.
- Wenger, E. (1998). *Communities of Practice: Learning, Meaning, and Identity*. Edinburgh,UK: Cambridge University Press.
- Wilcox, D., Thall, J., & Griffin, O. (2016). One canvas, two audiences: How faculty and students use a newly adopted learning management system. In Society for Information Technology & Teacher Education International Conference, 1163– 1168. Savannah, GA: Association for the Advancement of Computing in Education (AACE).
- Willemse, J. J., Jooste, K., & Bozalek, V. (2019). Experiences of undergraduate nursing students on an authentic mobile learning enactment at a higher education institution in South Africa. Nurse Education Today, 74, 69–75. https://doi.org/10.1016/j.nedt.2018.11.021
- Willis, J. (1996). A flexible framework for task-based learning. In eds. J. Willis & D. Willis (Ed.), *challange and change in language teaching*. Oxford, UK: MacMillan Publishers Limited.
- Wishart, J. (2015). Assimilate or accommodate? The need to rethink current use of the term 'Mobile Learning.' In *The Mobile Learning Voyage-From Small Ripples to Massive Open Waters* (pp. 229–238). Berlin, Germany: Springer US.
- Wiske, M. S., & Spicer, E. D. (2010). Teacher Education as Teaching for Understanding with New Technology. In *International Encyclopedia of Education* (3rd ed). Amsterdam: Elsevier.
- Wong, C. H. H. (2015). A Study of Mobile Learning for Guangzhou's University Students. Guangzhou University, Guangzhou, China.
- Woodill, G. (2011). *The Mobile Learning Edge: Tools and Technologies for Developing Your Teams*. New York: McGraw-Hill Professional.
- Wu,W.-H.,Wu, Y.-C. J., Chen, C. Y., Kao, H.-Y., Lin, C.-H., & Huang, S.-H. (2012). Review of trends from mobile learning studies: A meta-analysis. *Computers & Education*, 59, 817–827.
- Wyatt, T. H., Krauskopf, P. B., Gaylord, N. M., Ward, A., Huffstutler-Hawkins, S., &

Goodwin, L. (2010). Cooperative M-learning with nurse practitioner students. *Teaching with Technology*, *31*(2), 109–113.

- Xue, S., & Churchill, D. (2019). A review of empirical studies of affordances and development of a framework for educational adoption of mobile social media. *Educational Technology Research & Development*, 67(5), 1231–1257. https://doi.org/10.1007/s11423-019-09679-y.
- Xue, S. (2020). A conceptual model for integrating affordances of mobile technologies into task-based language teaching. *Interactive Learning Environments*, 0(0), 1–14. https://doi.org/10.1080/10494820.2019.1711132
- Yang, C., & Xie, Y. (2013). Learning chinese idioms through iPads. *Language Learning* and *Technology*, 17(2), 12–22. Retrieved from http://llt.msu.edu/issues/june2013/yangxie.pdf
- Yarbro, J., & Ventura, M. (2018). Skills for Today: What We Know about Teaching and Assessing Self-Management. London: Pearson.
- Yeap, J. A. L., Ramayah, T., & Soto-Acosta, P. (2016). Factors propelling the adoption of M-learning among students in higher education. *Electronic Markets*, 26(4), 323– 338.
- Yorulmaz, M. (2009). Advantages of the use of mission-based teaching method in the ability to listen to Turkish in the teaching of foreign languages. Edirne: Trakya University Institute of Social Sciences.
- Yuan, H. B., Williams, B. A., Fang, J. B., & Pang, D. (2012). Chinese nursing students' readiness for self-directed learning. *Nurse Educ Today*, 32, 427–431.
- Yuen, M. C., Koo, A. C., & Woods, P. C. (2018). Independent learning of digital animation. *International Journal of Information and Communication Technology Education*, 14(4), 107–120. https://doi.org/10.4018/IJICTE.2018100108
- Yundayani, A., Kardijan, D., & Herawan, T. (2019). Integrating ICT in english for academic purposes materials through task-based approach. *International Journal of Emerging Technologies in Learning*, 14(17), 29–43. https://doi.org/10.3991/ijet.v14i17.10753
- Yunus, K., Wahid, W., Omar, S. S., & Rashid, R. A. (2016). Computer phobia among adult university students. *International Journal of Applied Linguistics and English Literature*, 5(6), 209–213. https://doi.org/10.7575/aiac.ijalel.v.5n.6p.209
- Zaliza Hanapi, & Mohd Safarin Nordin. (2014). Unemployment among Malaysia graduates: Graduates' attributes, lecturers' competency and quality of education. *Procedia Social and Behavioral Sciences*, 112, 1056–1063. https://doi.org/10.1016/J.SBSPRO.2014.01.1269
- Zhang, Y., & Wildemuth, B. M. (2009). Qualitative analysis of content. In B. Wildemuth (Ed.), Applications of Social Research Methods to Questions in Information and Library Science (pp. 308–319). https://doi.org/10.1002/hbm.20661
- Zhang, X., Lo, P., So, S., Chiu, D. K. W., Leung, T. N., Ho, K. K. W., & Stark, A. (2021). Medical students' attitudes and perceptions towards the effectiveness of mobile learning: A comparative information-need perspective. *Journal of*

*Librarianship* and *Information Science*, 53(1), 116–129. https://doi.org/10.1177/0961000620925547

- Zheng, J., & Li, S. (2020). What drives students' intention to use tablet computers: An extended technology acceptance model. *International Journal of Educational Research*, 102(November 2019), 101612. https://doi.org/10.1016/j.ijer.2020.101612
- Zheng, S., Rosson, M. B., Shih, P. C., & Carroll, J. M. (2015). Understanding Student Motivation, Behaviors and Perceptions in MOOCs. Proceedings of the 18th ACM Conference on Computer Supported Cooperative Work & Social Computing -CSCW '15, 1882–1895. https://doi.org/10.1145/2675133.2675217
- Zikmund, W. G., Babin, B. J., Carr, J. C., & Griffin, M. (2010). Business Research Methods (8th ed). Mason, HO: Cengage Learning.
- Zubizarreta, J. (2009). The Learning Portfolio: Reflective Practice for Improving Student Learning. San Francisco: John Wiley & Sons.





#### APPENDIX

Appendix A: Informed Document

#### PROJECT TITLE: THE INFLUENCES OF POSTGRADUATE STUDENTS MOBILE LEARNING EXPERIENCE AND SELF-DIRECTED LEARNING READINESS ON MOBILE TASK-BASED ACTIVITY PERFORMANCE.

#### INTRODUCTION

The purpose of this form is to give you information that may affect your decision whether to say YES or NO to participation in this research. The form will also be used to record the consent of those who say YES. The title of this study is "The Influences of Postgraduate Students Mobile Learning Experience and Self-Directed Learning Readiness on Mobile Task-Based Activity Performance". The research study will be conducted at University Utara Malaysia (UUM).

#### DESCRIPTION OF RESEARCH STUDY

The purpose of this study is to develop an understanding of how Mobile Learning experiences and Self-directed Learning readiness measures postgraduate students Mobile Task-based Activity performance in Massive Open Online Courses (MOOC) platform. The findings will contribute to the larger body of knowledge surrounding postgraduate students who taking Information Technology (IT) courses. Information from this study will also help foster a better understanding of what Mobile Learning experiences and Self-directed Learning readiness contributes to the success of their postgraduate students.

#### INFORMED CONSENT

Thank you for your willingness to answer this survey questionnaire, reflective questions, learning logbook, and semi-structured interview, which focuses on your Mobile Learning experiences and Self-directed Learning readiness, measures postgraduate students' Mobile Task-based Activity performance in Massive Open Online Courses (MOOC) platform. The information that you provide will be reported in a research study that will be available to other higher education institutions.

Your answers will be confidential, and neither your University Utara Malaysia (UUM) will be able to identify you. Your responses and the results of any student responses or interview participation will also be kept confidential, and will not be used in any manner related to your faculty evaluation or any other evaluation of your performance at University Utara Malaysia (UUM), or at any other institution. We appreciate participation in this interview. If you have any questions or concerns, please contact the researcher below: Malini Thiagraj - Email: malini85t@gmail.com

#### RISKS AND BENEFITS

RISKS: There are no known risks involved in participating in this interview. BENEFITS: The main benefit to you for participating in this interview is for self-assessment and reflection that can come from disclosing and processing your experiences and readiness regarding Mobile learning and Self-directed learning.

#### COSTS AND PAYMENTS

The researchers are unable to give you any payment for participating in this study. There is no cost for participating in the study.

#### CONFIDENTIALITY

The researchers (Ms. Malini Thiagraj) will take all reasonable measures to keep private information, such as recordings and interview transcripts, confidential. Only the researchers will have access to your data. The results of this study may be used in reports, presentations, and publications; but the researchers will not identify you.

# VOLUNTARY NATURE OF THE STUDY

This study is completely voluntary, and the decision to participate or to abstain from participation is yours. This decision will not affect any relationships or standing with your institution or classes or anyone within that institution or your classes. If you choose to participate, then you may choose to abstain from responding to any of the questions in the interview that you do not wish to answer, for any reason.

By signing this form, you are saying several things. You are saying that you have read this form or have had it read to you, that you are satisfied that you understand this form, the research study, and its risks and benefits. And importantly, by signing below, you are telling the researcher YES, that you agree to participate in this interview. The researcher should give you a copy of this form for your records.

en

Participant Name & Signature: KHALILALULLAH AMN B. AHMAD

Date: 18/08/2017

Researcher Name & Signature: MALINI AIP THINGPAT

#### INVESTIGATOR'S STATEMENT

I certify that I have explained to this subject the nature and purpose of this research, including benefits, risks, costs, and any experimental procedures. I have described the rights and protections afforded to human subjects and have done nothing to pressure, coerce, or falsely entice this subject into participating. I have answered the subject's questions and have encouraged him/her to ask additional questions at any time during the course of this study. I have witnessed the above signature(s) on this consent form.

| Aspects /<br>Intersections | Characteristics            | Examples  |
|----------------------------|----------------------------|---|
| Device aspect              | Physical components        | Size, weight, composition, placement of<br>buttons and keys, right/left handed<br>requirements, one or two-hand operability   |
|                            | Input capabilities         | Keyboard, mouse, light pen, pen/stylus,<br>touch screen, trackball, joystick, touchpad,<br>hand/foot control, voice recognition.  |
|                            | Output capabilities        | Monitors, speakers or any other visual, auditory, and tactile output mechanisms.  |
|                            | File storage and retrieval | Storage on the device (RAM or ROM) or detachable, portable mechanisms such as USB drives, CDs, DVDs, and SD cards.  |
|                            | Processor speed            | Response rates; speed with which the device reacts to human input.  |
|                            | Error rates                | Malfunctions resulting from flaws in hardware, software, and/or interface design.   |
|                            | Prior knowledge            | Cognitive structures already in memory, anchoring ideas, schema theory, Gagne's conditions for learning.  |
|                            | Memory                     | Techniques for successful encoding with the<br>use of con textual cues: categorization,<br>mnemonics, self-questioning, semantic &<br>episodic memory, tactile, auditory, olfactory,<br>visual imagery, kinaesthetic imagery, dual<br>coding, and encoding specificity. |
|                            | Context and transfer       | Inert vs. active knowledge.   |
|                            | Learning proclivities      | Application of procedures and concepts to new situation; solutions for novel problems.  |
|                            | Emotions and Motivation    | Feelings of the learner towards a task; reasons or accomplishing a task.  |

# Appendix B: Key Characteristics of FRAME Model (Theory)

| Social aspect           | Conversation and Cooperation                                  | Social constraints: quantity, quality, relation, and manner.   |
|-------------------------|---|--|
|                         | Social Interaction  | Conversation as a cooperative activity, sharing of signs and symbols.  |
| Device usability        | Portability   | Portability and durability (dependent on<br>physical characteristics, number of<br>components, and materials used to construct<br>the device).   |
|                         | Information availability                                      | Portability and durability (dependent on<br>physical characteristics, number of<br>components, and materials used to construct<br>the device).   |
|                         | Psychological comfort   | Learnability, comprehensibility,<br>transparency, intuitiveness, memorability,<br>and metaphors.   |
| UTARA<br>A              | Satisfaction  | Aesthetics of the interface, physical appearance of the device, functionality, preferred cognitive style.  |
| Social<br>Technology    | Networking<br>Universiti Ut                                   | Personal area networks (PANs), wide area<br>networks (WANs), wireless local area<br>networks (WLAN), synchronization<br>software, Wireless Fidelity (Wi-Fi), cellular<br>Connectivity. |
|                         | System connectivity   | Internet access and document transfer protocols.   |
|                         | Collaboration/interaction                                     | Shared tools such as calendars, authoring tools and project management tools.  |
| Interaction<br>Learning | Interaction (learners,<br>instructors, content,<br>computers) | Learner-learner, learner-instructor, learner-<br>content; computer-based learning (CBL);<br>intelligent tutoring systems, zone of proximal<br>development.                             |
|                         | Situated cognition  | Authenticity of context and audience.  |
|                         | Learning communities  | Cognitive apprenticeships, dialogue, problem solving, communities of practice.   |

| Mobile Learning | Mediation                        | Task artefact cycle, mediation.   |
|-----------------|----------------------------------|---|
|                 | Information Access and Selection | Information noise, identification of patterns and relationships, relevancy, and accuracy. |
|                 | Knowledge Navigation             | Knowledge production vs. Knowledge navigation.  |

Adopted from Koole (2006, 2018)



# **Appendix C: Learning Logbook Template**

### **Daily Learning Log Book**

Name: Matrix Nom: Contact Nom: Email Address:

#### Learning actions

1. Date and Time. You only need to fill in this FutureLearn (MOOC) learning log for each day you are learning. (e.g. 07/10/2017, 6am—9 am)

.....

- 2. Location where the FutureLearn learning occurred.
  - $\Box$  In my dedicated study area
  - $\Box$  At home
  - $\Box$  At work
  - □ During commute
  - □ While waiting
  - □ While travelling
  - □ Other
    - (OA) .....
- 3. With which devices did you perform your learning activity?
  - □ Laptop
  - Tablet Universiti Utara Malaysia
  - □ Smartphone
  - □ eBook reader
  - □ Netbook
  - □ Other (please specify) .....

4. Is there a specific reason for using this or these specific devices for today's learning? (OQ)

.....

.....

5. FutureLearn learning activity, please check all activities you took part in term of :

### Content

- □ Viewing multimedia content
- □ Listening to multimedia content
- □ Synchronously following a webcast
- □ Asynchronously viewing a webcast
- □ Reading text-based content
- □ Reading course discussions

Interactions

- $\Box$  Adding notes
- □ Writing questions to the discussion forum
- $\Box$  Responding to discussion(s)
- □ Taking a self-assessment
- □ Filling in a multiple choice test
- $\Box$  Communicating with one of the educators
- □ Marking interesting conversations or content for later reading/learning
- □ Bookmarking content for retrieval after the course has stopped
- □ Blogging on what I have seen or on my FutureLearn journey

 $\hfill\square$  Transforming what I have seen in the course to fit my own professional challenges

6. Please briefly explain the problem/challenge you faced with regard to your FutureLearn learning experience (OQ)

.....

7. When you faced certain learning challenges in FutureLearn, did you search for support for your learning? (Y/N) If, YES, where or from whom? (OQ)

Weekly Learning Log Book

Name: Matrix Nom: Contact Nom: Email Address:

#### Learning actions

- 1. Please write down the date you wrote up this weekly log:
- 2. Did you spend some time planning your learning for this week? (Yes/No)
- 3. At this point in time: how do you perceive the FutureLearn course with regard to your learning?
  - □ I am still finding my way around the FutureLearn course environment, but I feel I am finding my way bit by bit.
  - □ The FutureLearn course environment meets my expectations of an online course.
  - $\Box$  I am frustrated by the FutureLearn course environment.
  - □ I am increasing the digital skills (my online and technological skills) needed to interact with others in the course, but I feel I am starting to get a hang of it.
  - □ I am looking at the content only and not engaging with other FutureLearn participants

- □ I am frustrated with the lack of digital skill tutorials (e.g. how to use certain tools, how to move through the course,...) that I need to follow and/or interact with the FutureLearn course.
- □ I feel frustrated with my lack of digital skills that are required in the course
- □ I have learned from interactions with others in the course
- $\Box$  I have not learned from any of the interactions with other participants in the course.
- $\Box$  The course facilitator helps me keep on track in the course
- □ The course facilitator is not guiding me through the course as I had expected him/her to do.
- □ The other FutureLearn participants help me keep on track in the course.
- □ Other (please briefly write down any other ideas you might have):
- 4. Finding your way around the course
  - □ I was able to immediately enter the course where I left it
  - $\Box$  I had to search for a bit before finding the location where I left the course
  - $\Box$  I had to search extensively to where I was in the course
  - □ Other
- 5. Who did you interact with for this part of your learning
  - □ Nobody
  - $\Box$  One or more facilitators/tutors
  - □ Other course participants
  - □ People outside of the course
- 6. At this point in time how do you perceive managing the course (time wise)? □ I am able to cope with the speed of the course
  - □ At this point I feel I do not have enough time to stay on top of everything that is happening in the course
  - □ Although I am not able to stay on top of everything that is happening, I have found a way to organize the course in a way that fits my time schedule
- 7. Please summarize your learning experience positive as well as negative with the FutureLearn course during this week (reflecting on your own learning, as well as the FutureLearn learning environment). (OQ)



# **Appendix D: Reflective Practice**

# Gibb's Reflective Cycle Model Template

### **Step 1 – Description**

This should be a brief description of the experience or event to set the scene and give context.

# **Step 2 – Feelings**

- Consider what you were thinking and how you felt before the experience.
- This is another short descriptive step, rather than being analytical.

# Step 3 – Evaluation

- Evaluation looks objectively at both positive and negative aspects of the experience.
- Describe key elements that went particularly well.
- Was there anything that did not go well or did not work?
- If appropriate, you can include what others did or did not do well.

# Step 4 – Analysis

Analysis attempts to explain why the experience was positive or negative and should form the largest section of your reflection. Take into account points made in the previous steps and identify any factors which helped you e.g. previous experiences, carrying out research or consulting with others. Consider your role in the experience and how you contributed to the success of this experience?

- If things did not go to plan, why do you think this was e.g. lack of preparation or external factors beyond your control?
- It can be useful to consider other people who were involved in the experience. Did they have similar views or reactions to you? If not, why do you think that was the case?

# Step 5 – Conclusion

Focus on what you have learned.

- Are there any skills you developed as a result of the experience?
- If so, how would you apply them in future experiences or situations?
- Are there areas of knowledge or particular skills you now need to develop?
- Is there anything you would do differently in the future?

# Step 6 – Action Plan

- What specific actions can you now take to build on your knowledge or skills?
- You could include any training that would benefit you (formal or otherwise), as well as identifying sources of information or support (people or resources).

#### **Reflective Practices Question**

#### **Pre-reflective practice**

- 1. How much did you know about the Mobile learning?
- 2. How much did you know or aware of any Massive Open Online Course (MOOC)?
- 3. Have you done any similar kind (engaging in MOOC) of work in the past?
- 4. Would you like to spend more time using mobile devices in universities?
- 5. Are you ready to do the task with less supervision from supervisor using own mobile devices?

#### **During-reflective practice**

- 1. How do you feel about this FutureLearn (MOOC)? What did/do you enjoy about this FutureLearn (MOOC)?
- 2. What was satisfying to you about FutureLearn (MOOC)?
- 3. What did/do you find frustrating about FutureLearn (MOOC)?
- 4. What problems did you encounter while you were working on this FutureLearn (MOOC)?
- 5. Did you learn anything useful as a result of taking part in FutureLearn (MOOC)?
- 6. Will you use the MOOC platform in future?
- 7. Do you think FutureLearn (MOOC) could able to improve your academicals performance?
- 8. How did you experience managing the course in term of time management?
- 9. Do you think using mobile devices could enhance your learning?
- 10. Did you make more or less use of learning with a mobile device as the course progressed?
- 11. What did you learn about yourself as you worked independently?
- 12. Where you able to self-directed / organize your learning amidst the content and discussions that were/are shared in FutureLearn?

# **Post-reflective practice**

- 1. How did the experience end? Were you able to complete or incomplete the FutureLearn (MOOC) and Mobile Task-based Activity?
- 2. What was satisfying to you about the FutureLearn (MOOC)?
- 3. What was satisfying to you about the Mobile Task-based Activity?
- 4. What did/do you find frustrating about FutureLearn (MOOC)?
- 5. Will you be better able to communicate with your instructors or classmates because of what you experienced in FutureLearn (MOOC)?
- 6. Do you think that your instructors did explain and guide you well in completing this FutureLearn (MOOC) and Mobile Task-based Activity?

- 7. How was your experience doing the FutureLearn (MOOC) and Mobile Task-based Activity independently or with less supervision from your instructors?
- 8. Do you feel you need one-to-one coaching from your instructors to complete this Mobile Task-based Activity?
- 9. Throughout this Mobile learning process (FutureLearn & Mobile Task-based Activity), what kind of learner are you?
- 10. Do you think your self-directed learning skill helps you in completing this FutureLearn (MOOC) and Mobile Task-based Activity?
- 11. Do you think your mobile devices enhance/improve your learning and assessment process?
- 12. Do you think your mobile devices and mobile usage experience helps you in completing this FutureLearn (MOOC) and Mobile Task-based Activity?
- 13. Do you feel comfortable working under this Mobile learning platform (FutureLearn) and Mobile Task-based Activity using your mobile devices?
- 14. Are you ready to new learning opportunities using mobile devices?
- 15. What would you change if you had a chance to do this FutureLearn (MOOC) over again?



Universiti Utara Malaysia

#### **Appendix E: Interview Informed Consent**

#### Research Title: THE INFLUENCES OF POSTGRADUATE STUDENTS MOBILE LEARNING EXPERIENCE AND SELF-DIRECTED LEARNING READINESS ON MOBILE TASK-BASED ACTIVITY PERFORMANCE

I Lee Jooi Peoh (your name) have received a copy of the information sheet and have read the information regarding this study. I am willing to participate in this study. I understand the interview will take between 40 to 45 minutes, will be video recorded and audio-taped. I also understand the text of interview will be transcribed for research purposes. I realise my personal details will be kept confidential. I also understand I can withdraw from this study at any time without penalty. If I have any questions, I will be able to contact the researcher, Ms. Malini Thiagraj, or her supervisor.

| Signature of participant:         | Utara Date: 20/09/ 2017 |
|-----------------------------------|-------------------------|
| Contact phone number: 016-4595709 |                         |
| Email: leipooipeon @ yahoo.com    | Matrix Nom: 822885      |
| Address:                          |                         |
| B201. JUN CENDANA DE000 SG PI     | TANI KEDAH              |

# THE INFLUENCES OF POSTGRADUATE STUDENTS MOBILE LEARNING EXPERIENCE AND SELF-DIRECTED LEARNING READINESS ON MOBILE TASK-BASED ACTIVITY PERFORMANCE

# MODERATOR'S QUESTION GUIDE BACKGROUND AND INTRODUCTIONS (10 minutes)

Hi, my name Malini Thiagraj. Thank you for being here.

As you know from the day I invited you to participate, I will be talking with you about a variety of things related to learning experiences and self-directed learning in M-learning platform. Specifically, I want to learn more from you today about what is you're M-learning experienced influences on your self-directed learning readiness. Then we'll talk about your opinions on various aspects of being a self-directed learner on this topic. Before I pose any questions, I want to go over just a few guidelines that will help us complete the discussion in the allotted time of about an hour:

□ Please bear in mind that this is an opinion study with no right or wrong answers.

 $\Box$  I encourage you to be candid about your personal view on any of the topics that come up.

 $\hfill\square$  You can use any language for the discussion as long as everyone in the group understands

 $\Box$  I am having our discussion recorded.

Let's begin now with INTRODUCTIONS so everyone can hear who is here.

All of you have in common you are Instructional Technology (IT) students'. Please tells your name and how you would like everyone to address you here.

[Calls on the first person on the list...] \_\_\_\_\_, I'll start with you.

#### DISCUSSION TOPICS (40 minutes) A: MOBILE LEARNING EXPERIENCE (20 minutes)

- 1. Type of mobile technology or mobile devices did you used during this mobile taskbased activity? Why?
- 2. How is the five week learning experience in FutureLearn platform and do u think it is a burden to learn something new?
- 3. Share your experience in handling mobile devices for mobile task-based activity?
- 4. What are the benefit and challenges when u faced during this mobile task-based activity?
- 5. Are you feeling boring looking at the video in M-learning platform?
- 6. Personal drawback of this FutureLearn (MOOC) platform? Do u think it's good to implement in school or too early for the implementation?
- 7. If opportunity given to attend any Massive Open Online Course (MOOC) in future, would you?

8. Last question, do u think the mobile learning experiences improve your learning to be meaningful?

# B: <u>SELF-DIRECTED LEARNING READINESS</u> (20 minutes)

- 1. You have to do this FutureLearn (MOOC) platform course at your own pace and with less supervision. So how do you feel? Do u feel burden or stress?
- 2. How you manage the time and balancing school work and house work?
- 3. Do you notice self-evaluation in improve you learning strategy / improvement?
- 4. Share your experience in handling mobile devices in FutureLearn (MOOC) Platform independently?
- 5. Can you do the FutureLearn (MOOC) Platform without the help of the instructors? Do u have high level of confident to do the mobile task-based activity?
- 6. How is your self-confident when you doing the FutureLearn (MOOC) platform and mobile task-based activity?
- 7. How you manage the barrier? (language, time, poor internet connection, and online learning difficulties)
- 8. How do you find a way to know a solution? Either by searching in other sources or ignore it?
- 9. Last question, do u think the Mobile learning experience has influence and improve you SDL readiness in mobile task-based activity?

# **ENDING**

# Do you have anything else to add?

Thank you all very much for participating today. Your input will be very valuable to us.

# Appendix G: Themes Classification

Example of themes classification

| Themes                | Categories                 | Example excerpt   |
|-----------------------|----------------------------|---|
| New Learning and      | • Interesting experience   | <b>REFLECTIVE PRACTICES</b>   |
| Assessment Experience | • Various technology tools | "Yes, this platform is interesting, fun, flexible, simple course content, easy to |
|                       | learned                    | access and collaborative learning" (DR/S35).                                      |
|                       | • New knowledge            | "I learn and familiarise with many new technology tools during this learning      |
|                       | • Excitement               | process" (PR-S36).  |
|                       |                            | "I enjoy FutureLearn because it is flexible and I can learn with my own pace      |
|                       |                            | while its increase my excitement for mobile learning" (DR/S5).                    |
|                       | UTARA                      | <u>INTERVIEW</u>  |
|                       | 5                          | I/R1: "Actually I learn new learning experiences thru this blended                |
|                       | 3                          | learning from the FutureLearn platform. I learn and know how other                |
|                       |                            | countries hire their education. So, I think for Malaysia we still need to         |
|                       |                            | move on. I finished my degree six years ago, I did not know what is               |
|                       |                            | blended learning and I did not use FutureLearn (MOOC). This is                    |
|                       |                            | because Malaysia educational system focuses more on traditional                   |
|                       |                            | learning".  |
|                       | 1000                       | LEARNING LOGBOOK  |
|                       | BUDI BN                    | "It was a new approach for me. Although had done a few online tasks,              |
|                       |                            | but all those were regarding my profession. But this online learning was          |
|                       |                            | totally different and interesting when using the mobile devices"                  |
|                       |                            | (LB/W1/S19).  |
|                       |                            | "My learning experience in first weeks is actually very excited. These            |
|                       |                            | platforms give new knowledge as well as allow me to discover to learn             |
|                       |                            | and know more" (LB/W1/S2/).   |
|                       |                            | I am more interesting to join and get involved in this learning                   |
|                       |                            | environment. I was very much interested on how technologies are being             |
|                       |                            | incorporated in lesson. I also get to know about various technology tools         |
|                       |                            | to be used in classroom (LB/W2/S3).   |

**Appendix H: Mobile Task-based Activity Assessment** 



#### ASSIGNMENT SUBMISSION AND ASSESSMENT

#### **INSTRUCTIONS TO STUDENTS**

- 1. This assignment contains three questions that is set in English.
- 2. This assignment require the students to do based on their five weeks learning experiences on FutureLearn (MOOC) platform.
- 3. Your e-portfolio should be prepared individually. You should not copy another person's works. You should also not plagiarise another person's work as your own.
- 4. There is no specification required in type-written document in blog as the freedom of choosing the font style and font size solely depends on the students' creativity.
- 5. There is no maximum words length.
- 6. Indicate the sources of information including all the necessary artifacts, citations, and references adopting the APA System as well as acknowledge the people who contributed to your work.
- 7. The video file format must submitted in one of the following file formats: *.mov, mv4, mp4, .wmv* and upload it on your blog site or embedding your video in blog.
- 8. This assignment accounts for 100% of the total marks for the course and shall be assessed based on the Rubrics attached.
- 9. You are to complete all these 3 tasks and provided your blog URL by email to me at <u>malini85t@gmail.com</u>
- 10.

#### **ASSIGNMENT QUESTIONS**

#### **MOBILE ASSIGNMENT (Individual Work Only)**

There are THREE (3) tasks for this assignment. The details of the tasks are presented below:

#### Task I: Your task is to create an e-portfolio using a blog (20 marks)

Process for Blogger

- 1. Go to https://www.blogger.com/start
- 2. Click on "Create your blog now"
- 3. Fill out the form to create a Google account and submit

(Note: if you already have a Google account such as a Gmail address, you can use your existing account for your blog)

- 4. Choose a name and URL for your blog and submit
- 5. Choose a template design and submit
- 6. Blog has been created, you may now post immediately.

Process for e-portfolio content

7. Create first page as introductory page where Students' need to add:

- i.) <u>Student Information</u>: name, contact information, major, graduation date, etc.
- ii.) <u>Table of Contents</u>: display links to contents of the portfolio
- iii.) <u>Learner Goals</u>
- iv.) Artifacts: examples of student work including documents, images, video, audio, etc.

Once your blog is created, email me its URL (web address) and I will link it.

# Task II: Your task is to write reflection over your experiences in *FutureLearn* platform (20 marks)

You will be assigned to write a reflective summary about the 5 weeks course that you have attended in *FutureLearn* platform. The reflective summary consists of:

- Experiences
- strength
- weakness
- recommended ideas for improvisation

FORMAT: For your assigned e-portfolio blog post, you should include a reflective summary of the main points of the topic as well as a personal/professional response. You should also include 2-3 discussion questions at the end of the post to which your classmates will be asked to respond. As the original author of the post, it is also your responsibility to moderate the online discussion generated by your post. In addition to your assigned chapter, you will be expected to post a comment at least five times during the course of the semester in response to your classmates' blog posts. More are welcome, but the smallest number of posts and comments should be five. Your post should be professionally written, utilizing correct grammar and APA format (6th edition) for citations.

#### Task III: Video presentation

Your task is to provide a 3-5 minute video presentation on your assigned topic from FutureLearn platform that you have attended earlier. You have to create a video on topic of "*Blended Learning Essentials: Getting Started*" from FutureLearn platform, where you need to present it with your own creativity and ideas based on your own field of study. At the end, your video should be a Video based Learning Object where subject to any topics.
**FORMAT:** You are encouraged to be creative in the way in which you present your material through the use of music, photographs, video or other sources.

## **Required elements for the video**

- 1. Length. Your video should be 3-5 minutes in length using any of you mobile devices.
- 2. *Style*. There are no restrictions on the style of the video (i.e., you may use a narrated slide show, a recorded lecture, video, a digital whiteboard, a stop motion animation (Claymation), animated graphics, a scripted scene, etc.)
- *3. Title slide.* Your video should begin with a descriptive title, your name(s), the name of the university, and the year in which it was created.
- 4. *References*. All artifacts (information, images, videos, music, sound effect, etc.) used in the video which you did not create yourself must be cited at the end.
- 5. *Credits*. Acknowledge the people who contributed to the video, including yourself, people who supported the production, and your instructor, and specify that the video was made within the context of this course (course number, institution, date).
- 5. *File format.* Your video must be submitted in one of the following file formats: *.mov, mv4, mp4, .wmv* and upload it on your blog site or embedding your video in blog.
- 6. Bandwidth. You can also choose your video in HD or on any prefer lower resolutions.

## How to Begin

Your task will take place in three separate stages:

1. *Planning*. This is the phase where you develop your ideas based on the FutureLearn (MOOC) platform topic and envision how your video will look and sound.

2. *Production*. This means creating and collecting all the artifacts (e.g., images, videos, sounds, narration) you will need for the video.

3. *Editing*. This stage is done using video-editing software such as Power Point, iMovie, or Movie Maker, where you stitch the artifacts together and sync then in time with a narration or other sounds.

\*\* If you are encounter problem in uploading large size video in your blog then u can embedding your video in your blog. Embedding a video means that you upload a video on a third party site like Youtube, Vimeo, and etc and then you can <u>easily embed it in your blog posts</u>. All you need to do is paste the video URL into the <u>post editor</u>. Make sure that the URL is in it's own line and not clickable (hyperlinked).

# Appendix I: Rubric for Mobile-based Assessment

# Mobile-based Assessment: E-Portfolio, Reflection summary on M-learning experience and Video Presentation

|                       | Novice  | Basic   | Proficient   | Advanced  | Score |
|-----------------------|---|---|--|---|-------|
|                       | 1   | 2 3   |  | 4   |       |
|                       | (0-25%)   | (25-50%)  | (50-75%)   | (75-100%)   |       |
| Goal setting          | The student does not<br>make an effort to<br>participate in the<br>establishment of goals<br>or to internalize the<br>goals associated with<br>learning activities. | The student<br>participates minimally<br>in the goal setting<br>process.  | The student is capable<br>of setting goals using a<br>prescribed or adapted<br>process.  | The student has<br>achieved competence<br>and independence in<br>goal setting.  | 10    |
| Ideas<br>&<br>Content | The ideas expressed<br>are not original, often<br>confused and are not<br>connected to<br>discussions around the<br>subject matter.                                 | The ideas expressed<br>are not necessarily<br>original, and are not<br>usually connected to<br>discussions around the<br>subject matter.  | The student expresses<br>some original ideas.<br>The majority of ideas<br>are related to the<br>subject matter.  | The student has many<br>original ideas and<br>expresses them clearly.<br>The great majority of<br>ideas are related to the<br>subject matter.   | 10    |
| Writing<br>Quality    | Posts are of very poor<br>quality. There is little<br>to no evidence of<br>reading other<br>information in order to<br>form new meaning of<br>the topics at hand.   | Posts show a below<br>average, overly casual<br>Writing style with a<br>lack of attention to<br>style. Students pay<br>little attention to other<br>reading and mostly<br>regurgitate previous<br>personal views. | Posts show above<br>average writing style.<br>The content<br>demonstrates that the<br>student reads<br>moderately, and<br>attempts to synthesize<br>information and form<br>new meaning. | Posts are well written,<br>and are characterized by<br>elements of a strong<br>writing style. The<br>content demonstrates<br>that the student is well<br>read, synthesizes<br>learned content and<br>constructs new<br>meaning. | 10    |

| Community   | Students do no show<br>evidence in any<br>participation in the<br>blogging community,<br>or the course<br>community, through<br>the use of weblogs. | Students rarely<br>participated in the<br>blogging community.<br>Most, if not all,<br>participation was<br>limited to the weblogs<br>of other classmates.      | The student<br>participated<br>moderately in the<br>blogging community.<br>There was some<br>evidence of out of<br>class participation. | The student participated<br>actively in the blogging<br>community via<br>comments on other<br>weblogs, and citing<br>others in their research<br>and writing.   | 10 |
|---|---|--|---|---|----|
| Technology<br>SkillsStudent has little, if<br>any, experience using a<br>computer or the<br>Internet, and has<br>minimal desire to<br>develop more skills in<br>this area |   | Student has limited<br>experience using a<br>computer and the<br>Internet, and has<br>expressed a strong<br>interest in developing<br>more skills in this area | Student has strong<br>computer skills and<br>detailed experience<br>using a word<br>processor, email<br>application and web<br>browser  | Student has excellent<br>computer skills and<br>significant experience<br>using a word processor,<br>email application and<br>web browser, and is<br>comfortable<br>downloading<br>information form the<br>Internet and using other<br>technology tools and<br>applications | 10 |
| Use<br>of<br>Enhancements   | The student did<br>nothing to enhance or<br>personalize the blog<br>space.  | There is very little<br>evidence of<br>multimedia<br>enhancement and the<br>student blog is<br>primarily text based.   | The student enhanced<br>their weblog to some<br>extent using video,<br>audio, images or<br>others.                                      | The student greatly<br>enhanced their weblog<br>space using video,<br>audio, images or other.   | 10 |
| Effective use of resources  | effectively and need<br>consistent teacher<br>guidance.   | teacher guidance to<br>select and use<br>resources effectively.  | appropriate resources<br>with minimal teacher<br>guidance.  | Independently identifies<br>and effectively uses<br>relevant resources.   | 10 |
|   | Rarely monitors   | Monitor learning   | Monitors learning   | Monitor learning  | 10 |

| Self-monitoring | learning progress, and<br>consistently requires<br>teacher guidance.                           | progress with frequent teacher intervention.  | progress and self-<br>corrects with<br>occasional teacher<br>guidance.   | progress, self-correcting as needed.   |    |  |  |
|-----------------|--|---|--|--|----|--|--|
| Help seeking    | The student does not<br>seek help, preferring to<br>abandon a task.                            | The student<br>occasionally seeks<br>help, but often from<br>inappropriate sources.   | The student<br>occasionally seeks help<br>and usually selects the<br>appropriate source.                                       | The student seeks help<br>when needed and<br>accurately identifies the<br>most efficient and<br>effective source of<br>assistance.   | 10 |  |  |
| Self-evaluation | No effort is made to<br>assess the quality of<br>work completed during<br>a learning activity. | The student relies on<br>external sources for<br>evaluation of learning<br>products, but can be<br>guided to limited self-<br>evaluation. | The student is able to<br>self-evaluate using<br>provided rubrics and<br>tools with minimal<br>assistance from the<br>teacher. | Self-evaluation is<br>automatic and the<br>student is capable of<br>sophisticated analysis of<br>progress against<br>standards or, in the<br>absence of standards,<br>against the work of<br>others. | 10 |  |  |
| TOTAL           |  |   |  |  |    |  |  |

Adapted from Timhorgan, 2011 and NCREL/Metiri Group, 2002.

# Appendix J: Sample of Validation Feedback for Survey Questionnaire

| In this secti<br>1. Gen   | in a second is a second to brief. Disease tick your approve   |
|---|---|
| 1. Gen  | on, we are interested in your background in brief. Please tick your answer.   |
|   | der   |
|   | Male  |
| 2. Yea  | Female     rof studies  |
|   | First year  |
|   | Second year     Third year  |
|   | G Forth year  |
| 3. Mas  | ter of Education  |
|   | Curriculum & Instruction  |
|   | Instructional Technology  |
|   | Educational Psychology     Islamic Education  |
| DADT D. I   | Achile Learning Experiment  |
| PART B. I   | Stull abservation   |
| Section A:  | MOOC Context  |
| The survey  | questions mentioned here are categorized as followed:   |
| MA = mult   | ple answers   |
| Y/N = yes   | or no answer  |
| LS7 = 7-po  | int Likert scale  |
| OA = Oper   | Answers   |
|   | items 2,406   |
| 2 Are   | you aware of MOOC? (MC) come questions and combine into   |
| -   | □ Yes   |
|   | No     Remains to take up later   |
|   | I manning to take up take   |
| X Wh  | A lurking participant (passive but following)   |
|   | A moderately active participant (An active participant)   |
| (4) Hay   | e you followed an eLearning or online course before (an online course other than a  |
| Me  |   |
| X Wh  | ere you able to self-directed / organize your learning amidst the content and   |
| dise  | Sussions that were/are shared in MobiMOOCT (MC)   |
|   | not at first, but I got into it yes   |
|   | no no   |
|   |   |
|   |   |
|   |   |
|   |   |
| ection B: So  | chal media use and experience   |
| ection B: Soc<br>11) How m  | ini media use and experience<br>any years have you been using social media (blogs, twitter, facebook)? (MC)   |
| ection B: Soc<br>11) How m  | ini media use and experience<br>any years have you been using social media (blogs, twitter, facebook)? (MC)<br>None<br>I year or less   |
| setion B: Soc<br>11) How m  | Etal media use and experience<br>any years have you been using social media (blogs, twitter, facebook)? (MC)<br>None<br>1 year or less<br>3 years or less   |
| ection B: Soc<br>11) How m  | <ul> <li>iai media use and experience</li> <li>any years have you been using social media (blogs, twitter, facebook)? (MC)</li> <li>None</li> <li>1 year or less</li> <li>3 years or less</li> <li>5 years or less</li> <li>More than 5 years</li> </ul>  |
| 11) How m   | <ul> <li>iai media use and experience</li> <li>any years have you been using social media (blogs, twitter, facebook)? (MC)</li> <li>None</li> <li>1 year or less</li> <li>3 years or less</li> <li>5 years or less</li> <li>More than 5 years</li> </ul>  |
| 11) How m   | <ul> <li>iail media use and experience</li> <li>any years have you been using social media (blogs, twitter, facebook)? (MC)</li> <li>None</li> <li>1 year or less</li> <li>3 years or less</li> <li>5 years or less</li> <li>More than 5 years</li> <li>type of social media tools used during Futurelearn do you have experience with?</li> </ul>  |
| 11) How m<br>12) Which<br>(MA)  | <ul> <li>Inil media use and experience</li> <li>any years have you been using social media (blogs, twitter, facebook)? (MC)</li> <li>None</li> <li>1 years or less</li> <li>3 years or less</li> <li>5 years or less</li> <li>More than 5 years</li> </ul> type of social media tools used during Futurelearn do you have experience with? <ul> <li>Wiki</li> <li>Twitter</li> </ul>  |
| 11) How m<br>12) Which<br>(MA)  | Elal media use and experience          any years have you been using social media (blogs, twitter, facebook,)? (MC)         None         1 year or less         3 years or less         5 years or less         More than 5 years         type of social media tools used during Futurelearn do you have experience with?         Wiki         Twitter         Facebook   |
| 11) How m<br>12) Which<br>(MA)  | inial media use and experience          any years have you been using social media (blogs, twitter, facebook)? (MC)         None         1 years or less         3 years or less         • More than 5 years         type of social media tools used during Futurelearn do you have experience with?         • Wiki         • Twitter         • Facebook         • Geogle groups         • Delicious         • abort this as this application is not  |
| 11) How m<br>12) Which<br>(MA)  | <ul> <li>Ital media use and experience</li> <li>any years have you been using social media (blogs, twitter, facebook,)? (MC)</li> <li>None</li> <li>1 year or less</li> <li>3 years or less</li> <li>5 years or less</li> <li>More than 5 years</li> </ul> type of social media tools used during Futurelearn do you have experience with? <ul> <li>Wiki</li> <li>Twitter</li> <li>Facebook</li> <li>Google groups</li> <li>applicate in Molegin</li> </ul>   |
| 11) How m<br>12) Which<br>(MA)  | <ul> <li>Init media use and experience</li> <li>any years have you been using social media (blogs, twitter, facebook)? (MC) <ul> <li>None</li> <li>1 year or less</li> <li>3 years or less</li> <li>5 years or less</li> <li>More than 5 years</li> </ul> </li> <li>type of social media tools used during Futurelearn do you have experience with? <ul> <li>Wiki</li> <li>Facebook</li> <li>Georgle groups</li> <li>Belicious</li> <li>applicable in Malagnia</li> <li>Netvibes</li> <li>Younube</li> </ul> </li> </ul>  |
| 11) How m<br>12) Which<br>(MA)  | Etal media use and experience          any years have you been using social media (blogs, twitter, facebook,)? (MC)         I year or less         3 years or less         5 years or less         More than 5 years         type of social media tools used during Futurelearn do you have experience with?         Wiki         Twitter         Facebook         Geogle groups         Belisious         Applicable in Malagain         Netwittes         Youtube   |
| 11) How m<br>12) Which<br>(MA)  | inial media use and experience          any years have you been using social media (blogs, twitter, facebook)? (MC)         None         1 years or less         3 years or less         3 years or less         More than 5 years         type of social media tools used during Futurelearn do you have experience with?         Wiki         Twitter         Facebook         Geogle groups         Other         Youtube         Stype         Other  |
| 12) Which<br>(MA)   | That media use and experience          any years have you been using social media (blogs, twitter, facebook,)? (MC)   |
| 11) How m<br>12) Which<br>(MA)  | <ul> <li>chal media use and experience</li> <li>any years have you been using social media (blogs, twitter, facebook)? (MC)</li> <li>None</li> <li>1 year or less</li> <li>3 years or less</li> <li>5 years or less</li> <li>More than 5 years</li> </ul> ttype of social media tools used during Futurelearn do you have experience with? <ul> <li>Wiki</li> <li>Twitter</li> <li>Facebook</li> <li>Geogle groups</li> <li>abort this as this application is not</li> <li>Netwibes</li> <li>Skype</li> <li>Other</li> </ul>  |
| 11) How m<br>12) Which<br>(MA)<br>13) Have ye   | End media use and experience          any years have you been using social media (blogs, twitter, facebook,)? (MC)  |
| ection B: Sou<br>11) How m<br>12) Which<br>(MA)<br>13) Have ye<br>ection C: Mo<br>14) Which               | Elal media use and experience          amy years have you been using social media (blogs, twitter, facebook,)? (MC)   |
| 12) Which<br>(MA)<br>13) Have ye<br>etion C: Mo   | <ul> <li>Ital media use and experience</li> <li>any years have you been using social media (blogs, twitter, facebook,)? (MC)</li> <li>None</li> <li>1 year or less</li> <li>3 years or less</li> <li>5 years or less</li> <li>More than 5 years</li> </ul> stype of social media tools used during Futurelearn do you have experience with? <ul> <li>Wiki</li> <li>Wiki</li> <li>Facebook</li> <li>Georgie groups</li> <li>about this ar this application is not</li> <li>Netwibes</li> <li>Skype</li> <li>Other</li> </ul> bile device use and experience section mobile devices do you have? (MA) <ul> <li>Main</li> <li>Main</li></ul>                   |
| 12) Which<br>(MA)<br>13) Have ye<br>etion C: Mo<br>14) Which 1  | End media use and experience          any years have you been using social media (blogs, twitter, facebook,)? (MC)  |
| 11) How m<br>11) How m<br>12) Which<br>(MA)<br>13) Have ye<br>etion C: Mo<br>14) Which                    | End media use and experience          any years have you been using social media (blogs, twitter, facebook,)? (MC)         None         1 year or less         3 years or less         • More than 5 years         type of social media tools used during Futureleam do you have experience with?         • Wiki         • Wiki         • Facebook         • Geogle groups         • Delicious         • Delicious         • Other         • Other         • Other         • Delicious do you have? (MA)         • Mp3         • Digital camera         • Gell phone  |
| ection B: Sou<br>11) How m<br>12) Which<br>(MA)<br>13) Have ye<br>ection C: Mo<br>14) Which i             | End media use and experience          amy years have you been using social media (blogs, twitter, facebook,)? (MC)  |
| ection B: So<br>11) How m<br>12) Which<br>(MA)<br>13) Have ye<br>ection C: Mo<br>14) Which 1              | intel media use and experience          any years have you been using social media (blogs, twitter, facebook,)? (MC)  |
| 11) How m<br>12) Which<br>(MA)<br>13) Have ye<br>retion C: Mo<br>14) Which 1                              | End media use and experience          any years have you been using social media (blogs, twitter, facebook,)? (MC)  |
| ection B: So<br>11) How m<br>12) Which<br>(MA)<br>13) Have ye<br>setion C: Mo<br>14) Which 1<br>15) How m | <pre>init media use and experience any years have you been using social media (blogs, twitter, facebook)? (MC)     None     J year or less     3 years or less     3 years or less     More than 5 years  stype of social media tools used during Futurelearn do you have experience with?  Wiki     Twitter     Hore the set of the se</pre> |
| ection B: So<br>11) How m<br>12) Which<br>(MA)<br>13) Have ye<br>ection C: Mo<br>14) Which 1              | Hall media use and experience          any years have you been using social media (blogs, twitter, facebook,)? (MC)         None         1 year or less         3 years or less         5 years or less         More than 5 years         twitter, facebook,)? (MC)         Wiki         Twitter         Geogle groups         Abert this, are this application is net         Geogle groups         Applicable in Makyaia         Netwittes         Skype         Other         mobile devices use and experience sections         mobile devices do you have? (MA)         Mp3         Biginal names         Amort Mathematical Strates         Amort Mathemating Strates  |
| ection B: So<br>11) How m<br>12) Which<br>(MA)<br>13) Have ye<br>setion C: Mo<br>14) Which 1<br>15) How m | <pre>init media use and experience any years have you been using social media (blogs, twitter, facebook,)? (MC)     None     J year or less     J years or less</pre>     |
| 11) How m<br>12) Which<br>(MA)<br>13) Have ye<br>etion C: Mo<br>14) Which 1<br>15) How m                  | <pre>Hall media use and experience any years have you been using social media (blogs, twitter, facebook,)? (MC)</pre>   |
| ection B: So<br>11) How m<br>12) Which<br>(MA)<br>13) Have ye<br>setion C: Mo<br>14) Which 1<br>15) How m | <pre>defined a use and experience<br/>may years have you been using social media (blogs, twitter, facebook)? (MC)</pre>   |

Sample of expert feedback and comments 1

### Sample of Validation Feedback for Mobile-based Assessment Rubric

|                           | Novice<br>1<br>(0-25%)   | Basic<br>2<br>(25-50%)   | Proficient<br>3<br>(50-75%)  | Advanced<br>4<br>(75-100%)   |
|---------------------------|--|--|--|--|
| Goal setting              | The student does not make<br>an effort to participate in<br>the establishment of goals<br>or to internalize the goals<br>associated with learning<br>activities. | The student participates minimally in the goal setting process.  | The student is capable of setting goals using a prescribed or adapted process.   | The student has achieved<br>competence and<br>independence in goal<br>setting.   |
| Ideas<br>& and<br>Content | The ideas expressed are<br>not original, often<br>confused and are not<br>conpected to discussions<br>around the subject matter.                                 | The ideas expressed are<br>not necessarily original,<br>and are not usually<br>connected to discussions<br>around the subject matter.  | The student expresses<br>some original ideas. The<br>majority of ideas are<br>related to the subject<br>matter.  | The student has many<br>original ideas and expresses<br>them clearly. The great<br>majority of ideas are related<br>to the subject matter.   |
| Writing<br>Quality        | Posts are of very poor<br>quality. There is little to no<br>evidence of reading other<br>information in<br>order to form new meaning<br>of the topics at hand.   | Posts show a below<br>average, Overly casual<br>Writing style with A lack<br>of attention To style.<br>Students Pay little<br>attention To other reading<br>And mostly regurgitate<br>previous personal views. | Posts show above<br>Xverage writing style.<br>The content demonstrates<br>that the student reads<br>moderately, and attempts<br>to synthesize information<br>and form new meaning. | Posts are well written, and<br>are characterized by<br>elements of a strong writing<br>style. The content<br>demonstrates that the<br>student is well read,<br>synthesizes learned content<br>and constructs new<br>meaning. |
| Community                 | Students' do no show<br>evidence in any<br>participation in the<br>blogging community, or<br>the course community, ~   | Students' rarefy<br>participated in the<br>blogging community.<br>Most, if not all,<br>participation was limited   | The student participated<br>moderately in the<br>blogging community.<br>There was some evidence<br>of out of class<br>participation.   | The student participated<br>actively in the blogging<br>community wa comments<br>on other weblogs, and citing<br>others in their research and<br>writing.  |

Sample of expert feedback and comments 2

#### **Samples of Validation Feedback for Reflective Practices**

Please answer the respective questions below.

- Pre-reflective practice
- 1. How much did you know about the Mobile learning?
- 2. How much did you know or aware of any Massive Open Online Course (MOOC)?
- 3. Have you done a similar kind (engaging in MOOC) of work in the past?
- 4. What would you like to spend more time using mobile devices in universities?
- 5. Are you ready to do the task with less supervision using own mobile devices?

**During-reflective practice** 

- 1. How do you feel about this FutureLearn (MOOC)? What did/do you enjoy about this FutureLearn (MOOC)? "Into point," "Like" or " contributy use only one term. cither " Like" or " contributy
- 2. What was especially like or satisfying to you about FutureLearn (MOOC)?
- 3. What did/do you find dislike or frustrating about FutureLearn (MOOC)?
- 4. What problems did you encounter while you were working on this FutureLearn (MOOC)?
  - 5. Did you learn anything useful as a result of taking part in FutureLearn (MOOC)?
  - 6. Will you use the MOOC platform in future?
  - 7. Do you think FutureLearn (MOOC) could able to improve your academicals performance?
  - 8. How did you experience managing the course (time wise)?
  - 9. Do you think using mobile devices could enhance your learning?
  - 10. Did you make more or less use of learning with a mobile device as the course progressed?
  - 11. What did you learn about yourself as you worked independently?
  - 12. Where you able to self-directed / organize your learning amidst the content and
  - discussions that were/are shared in FutureLearn?

**Post-reflective practice** 

- How did you think the experience end? Were you able to complete or incomplete the FutureLearn (MOOC) and Mobile Task-based Activity?
- 2. What was like or satisfying to you about the Future Learn (MOOC)?

Sample of expert feedback and comments 3

| nples of Validation Feedb   | oack for learning logbook  |
|---|--|
| DAILY LEARNING LOG BO   | ок   |
| NAME:<br>MATRIX NOM:  | CONTACT NOM:<br>EMAIL ADDRESS:   |
| Learning actions  | 1  |
| <ol> <li>Date and Time. You only net<br/>you are learning. (e.g. 07/10/</li> </ol>  | ed to fill in this FutureLearn (MOOC) learning log for each day 2017, 6am - 9 am)                                      |
| 2. Location where the FutureLea   | rn learning occurred.  |
| <ul> <li>In my dedicated study are</li> <li>At home</li> <li>At work</li> <li>During commute</li> <li>While waiting</li> <li>While travelling</li> <li>Other (OA)</li></ul> | ea<br>• +o<br>erform your learning activity?   |
| 5. with which devices and you p   | erform your rearining activity.  |
| <ul> <li>Laptop</li> <li>Tablet</li> <li>Smartphone</li> <li>eBook reader</li> <li>Netbook</li> <li>Other (please specify)</li> </ul>                                       |  |
| 4. Is there a specific reason for t   | using this or these specific devices for today's learning? (OQ)<br>use only one term "either" problem " or " challenge |
| 5. Please briefly explain the problem learning experience (OQ)  | blem/challenge you faced with regard to your FutureLearn   |
| 2   |  |
| <ol> <li>When you faced certain learning? (Y/N) If, YES</li> </ol>  | any additional<br>ing challenges in FutureLearn, did you search for support for<br>S, where or from whom? (OQ)         |
|   |  |

Sample of expert feedback and comments 4

#### Samples of Validation Feedback for Semi-structured Interview

#### THE INFLUENCES OF POSTGRADUATE STUDENTS' MOBILE LEARNING EXPERIENCE AND SELF-DIRECTED LEARNING READINESS ON MOBILE TASK-BASED ACTIVITY PERFORMANCE

#### **DISCUSSION TOPICS**

A: MOBILE LEARNING EXPERIENCE

- mobile Mobile 1. Type of technology or devices did you used during this Mobile Task-based Activity? Why?
- 2. How is the five week learning experience in FutureLearn Platform and do u think it is a burden to learn something new?
- 3. Share your experience in handling mobile devices for Mobile Task-based Activity? mobile Task-based activity
- 4. What are the benefit and challenges when u faced during this Mobile learning process?
- 5. Are you feeling boring looking at the video in Mobile Task-based Activity? chaye to M-Lary platform?
- 6. Personal drawback of this FutureLearn (MOOC)PPlatform? Do u think it's good to implement in school or too early for the implementation?
- (2) How was your experience using mobile devices? < came question as question num 1. combine it
- (8) Did you learn something useful? < combine with question num 2, because some question
- What mobile devices you used for this Mobile Task-based Activity? < combine with question much.</li>
   If opportunity given to attend any MOOC platform in future, would you? The full moce part of the second second
- Last question, do u think the meaningful mobile learning experiences improve your specified 11. learning? to be memiyful ?

#### B: SELF-DIRECTED LEARNING READINESS

- 1. You have to do this FutureLearn (MOOC). Platform course at your own pace and with less supervision. So how do you feel? Do u feel burden or stress?
- 2. How you manage the time and balancing school work and house work?
- 3. Do you notice self-evaluation in improve you learning strategy / improvement?
- 4. Share your experience in handling mobile devices in FutureLearn (MOOC) Platform independently?
- (5) How you managing your time? combine with querton 2.
- 6. Can you do the FutureLearn (MOOC) Platform without the help of the instructors? Do u have high level of confident to do the M-learning platform? mobile task-based activity?
- (2) How is your self-confident when you attend the Future Learn (MOOC) Platform? 1 combine into one
- J question (8) How is your self-confident when you attend the Mobile Task-based Activity?
- 9. How you manage the barrier? (language, time, poor internet connection, and online learning difficulties)
- After the five week of Mobile learning experiences, how is your self-confident? combine with q:7. (10)
- How do you find a way to know a solution? Either by searching in other sources or 11. ignore it?
- Did you confident enough in this Mobile Task-based Activity? combine with quition 10 (12)
- 13. Last question, do u think the Mobile learning experience has influence and improve you SDL readiness in Mobile Task-based Activity?

Sample of expert feedback and comments 5

## **Appendix K: Survey Questionnaire**

### Part A: Background Information of Students

In this section, we are interested in your background in brief. Please tick your answer. 1. Gender

- 🗆 Male
- □ Female
- 2. Year of studies
  - $\Box$  First year
  - $\Box$  Second year
  - $\Box$  Third year
  - $\Box$  Forth year

## 3. Master of Education

- □ English Language Teaching
- $\square$  Curriculum & Instruction
- Instructional Technology
- □ Educational Psychology
- □ Islamic Education

# Part B: Mobile Learning Experience

# Section 1: MOOC Context

The survey questions mentioned here are categorized as followed:

- MC = multiple choice
- MA = multiple answers
- Y/N = yes or no answer
- LS5 = 5-point Likert scale
- OA = Open Answers
  - 1. Are you aware of MOOC? (Y/N)
  - 2. Have you followed an M-learning or online course before (an online course other than a MOOC)? (Y/N)
  - 3. Which course elements related to online learning do you expect to potentially interfere with your learning during the FutureLearn course? Please select the elements in terms of influence, whereby 1 would be given to the elements most likely to interfere with your participation in the FutureLearn course (MA)
    - a. Technical challenges with the FutureLearn software
    - b. Educator and Instructor support
    - c. Peer support

- d. Unexpected course content (e.g. course content does not relate to what I expected)
- e. My ability to organize my learning
- f. Other (OA)
- 4. What is the key reason for using mobile devices for M-learning course?
  - a. Free and affordable
  - b. No Perquisite required
  - c. Flexible Timing
  - d. Update Knowledge
  - e. Others
- 5. Please rate your experience in MOOC's learning process. (LS6)
  - a. Ease of accessing the course information
  - b. Availability of student support service / help line if any query
  - c. Ease of doing the course on the schedule time slot provided
  - d. Quality of the course material provided
  - e. Quality of the online tutor

## Section 2: Social Media Use and Experience

- How many years have you been using social media (Blogs, Twitter, Facebook...)? (MC)
  - 🗆 None
  - $\Box$  1 year or less
  - □ 3 years or less
  - □ 5 years or less
  - $\Box$  More than 5 years
- 7. Which type of social media tools used during FutureLearn (MOOC) do you have experience with? (MA)
  - U Wikipedia
  - □ Twitter
  - □ Facebook
  - $\Box$  Search engine (Google)
  - □ YouTube
  - □ Skype
  - $\Box$  Other

## Section 3: Mobile Devices Use and Experience

- 8. Which mobile devices do you have? (MA)
  - $\Box$  Smartphone
  - 🗆 Laptop
  - □ Table

□ Netbook

🗆 I-Pad

- $\Box$  other (QA)
- 9. For what reason did you access the material with a mobile device (MA)
  - □ Flexibility to access no matter what time
  - □ Flexibility to access material no matter where I was
  - □ The material was easily accessible through a mobile medium
  - □ It was useful for my learning context
  - $\Box$  Other (QA)
- 10. For which type of learner interaction did you use a mobile device to engage in the interaction while adding content? (MA)
  - $\Box$  Posting questions
  - $\Box$  Answering questions
  - $\Box$  Commenting in threads/posts/tweets
  - Social Media
  - Sending e-mail messages to other participants
  - □ Collaborating on a project
  - □ Informal chatting
  - □ Other

## Part C: Self-directed Learning Readiness Scale (SDLRS)

This section is seeking your opinion regarding on learning preferences and attitude towards learning. Respondent are asked to indicate the extent to which they agreed or disagreed with each statement using Frequency 5 Likert Scale [(1) =Strongly Disagree; (2) =Disagree; (3) =Undecided; (4) =Agree; (5) =Strongly Agree] response framework. Please circle one number per line to indicate the extent to which you agree or disagree with the following statements.

| No | Questions                                       | Strongly<br>Disagree | Disagree | Undecided | Agree | Strongly<br>Agree |
|----|---|----------------------|----------|-----------|-------|-------------------|
| 1  | I manage my study time well                     | 1                    | 2        | 3         | 4     | 5                 |
| 2  | I learn from my mistakes                        | 1                    | 2        | 3         | 4     | 5                 |
| 3  | I have good management skills                   | 1                    | 2        | 3         | 4     | 5                 |
| 4  | I want to learn new information                 | 1                    | 2        | 3         | 4     | 5                 |
| 5  | I am not in control of my life                  | 1                    | 2        | 3         | 4     | 5                 |
| 6  | I set specific times for my study               | 1                    | 2        | 3         | 4     | 5                 |
| 7  | I am able to focus on a problem                 | 1                    | 2        | 3         | 4     | 5                 |
| 8  | I like to gather facts before I make a decision | 1                    | 2        | 3         | 4     | 5                 |
| 9  | I am aware of my limitations                    | 1                    | 2        | 3         | 4     | 5                 |

| 10 | I can be trusted to pursue my own learning                    | 1 | 2 | 3 | 4 | 5 |
|----|---|---|---|---|---|---|
| 11 | I enjoy a challenge   | 1 | 2 | 3 | 4 | 5 |
| 12 | I need to know why  | 1 | 2 | 3 | 4 | 5 |
| 13 | I do not enjoy studying                                       | 1 | 2 | 3 | 4 | 5 |
| 14 | I am self-disciplined   | 1 | 2 | 3 | 4 | 5 |
| 15 | I have high personal standards                                | 1 | 2 | 3 | 4 | 5 |
| 16 | I enjoy learning new information                              | 1 | 2 | 3 | 4 | 5 |
| 17 | I prefer to set my own learning goals                         | 1 | 2 | 3 | 4 | 5 |
| 18 | I critically evaluate new ideas                               | 1 | 2 | 3 | 4 | 5 |
| 19 | I solve problems using a plan                                 | 1 | 2 | 3 | 4 | 5 |
| 20 | I am open to new ideas  | 1 | 2 | 3 | 4 | 5 |
| 21 | I like to evaluate what I do                                  | 1 | 2 | 3 | 4 | 5 |
| 22 | I am responsible  | 1 | 2 | 3 | 4 | 5 |
| 23 | I am systematic in my learning                                | 1 | 2 | 3 | 4 | 5 |
| 24 | I have high personal expectations                             | 1 | 2 | 3 | 4 | 5 |
| 25 | I have a need to learn  | 1 | 2 | 3 | 4 | 5 |
| 26 | I am disorganised   | 1 | 2 | 3 | 4 | 5 |
| 27 | I like to make decisions for myself                           | 1 | 2 | 3 | 4 | 5 |
| 28 | When presented with a problem I cannot resolve I will ask for | 1 | 2 | 3 | 4 | 5 |
|    | assistance  |   |   |   |   |   |
| 29 | I am responsible for my own decisions/actions                 | 1 | 2 | 3 | 4 | 5 |
| 30 | I prefer to plan my own learning                              | 1 | 2 | 3 | 4 | 5 |
| 31 | I can find out information for myself                         | 1 | 2 | 3 | 4 | 5 |
| 32 | I am confident in my ability to search out information        | 1 | 2 | 3 | 4 | 5 |
| 33 | I prefer to set my own criteria on which to evaluate my       | 1 | 2 | 3 | 4 | 5 |
|    | performance Universiti Utara Malaysi                          | а |   |   |   |   |
| 34 | I prefer to set my own goals                                  | 1 | 2 | 3 | 4 | 5 |
| 35 | I prioritise my work  | 1 | 2 | 3 | 4 | 5 |
| 36 | I am logical  | 1 | 2 | 3 | 4 | 5 |
| 37 | I evaluate my own performance                                 | 1 | 2 | 3 | 4 | 5 |
| 38 | I am methodical   | 1 | 2 | 3 | 4 | 5 |
| 39 | I have high beliefs in my abilities                           | 1 | 2 | 3 | 4 | 5 |
| 40 | I set strict time frames                                      | 1 | 2 | 3 | 4 | 5 |

# Appendix L: Measurement Items Analysis

Pre-Test and Post-Test of Self-Control

|          |              |         |    |                | Std. Error |
|----------|--------------|---------|----|----------------|------------|
|          |              | Mean    | Ν  | Std. Deviation | Mean       |
| Pair 1   | PreSC &      | 3.22    | 34 | .21951         | .037       |
|          | PostSC       | 4.45    | 34 | .29654         | .050       |
|          | 105050       | 1.15    | 51 | .27031         |            |
|          |              |         |    |                |            |
| Paired S | amples Corre | lations |    |                |            |
|          |              |         | -  |                |            |

|        |         | Ν  | Correlation | Sig. |
|--------|---------|----|-------------|------|
| Pair 1 | PreSC & | 34 | 344         | 047  |
|        | PostSC  | 54 | .544        | .047 |

Paired Samples Test

|        | IVE    | AX      | Paired Differences |            |                 |          |         |    |          |
|--------|--------|---------|--------------------|------------|-----------------|----------|---------|----|----------|
|        |        |         |                    |            | 95% Confidence  |          |         |    |          |
|        |        | e)]/·/  |                    |            | Interval of the |          |         |    |          |
|        |        | a BALL  | Std.               | Std. Error | Diffe           | rence    | a       |    | Sig. (2- |
|        | 80     | Mean    | Deviation          | Mean       | Lower           | Upper    | t       | df | tailed)  |
| Pair 1 | PreSC- | -       | 20220              | 05194      | 1 22601         | 1 12500  | 22 752  | 22 | 000      |
|        | PostSC | 1.23137 | .30229             | .03184     | -1.33084        | -1.12390 | -23.733 | 33 | .000     |

## Pre-Test and Post-Test of Self-Management

| 1 and 50 | imples Statistic. | 3    |    |                |                 |
|----------|-------------------|------|----|----------------|-----------------|
|          |                   | Mean | Ν  | Std. Deviation | Std. Error Mean |
| Pair 1   | PreSM &           | 3.02 | 34 | .23261         | .039            |
|          | PostSM            | 3.81 | 34 | .21192         | .036            |

Paired Samples Statistics

| Paired Samples Correlations |         |    |      |      |  |  |  |  |  |
|-----------------------------|---------|----|------|------|--|--|--|--|--|
| N Correlation Sig.          |         |    |      |      |  |  |  |  |  |
| Pair 1                      | PreSM & | 24 | 110  | 504  |  |  |  |  |  |
|                             | PostSM  | 34 | .119 | .304 |  |  |  |  |  |

|           |                   | ·      |   |        |       |        |         |    |          |
|-----------|-------------------|--------|---|--------|-------|--------|---------|----|----------|
|           |                   |        |   |        |       |        |         |    |          |
|           |                   | TARA   | Std.Std.95% ConfidenceStd.Interval of the |        |       |        |         |    |          |
|           |                   |        |   |        |       |        |         |    |          |
|           |                   |        | Deviati                                   | Error  | Diffe | erence |         |    | Sig. (2- |
|           |                   | Mean   | on  | Mean   | Lower | Upper  | t       | df | tailed)  |
| Pair<br>1 | PreSM -<br>PostSM | 78281  | .29549                                    | .05068 | 88591 | 67971  | -15.447 | 33 | .000     |
|           | 13,00             | laysia | a   |        |       |        |         |    |          |

## Pre-Test and Post-Test of Desire for Learning

|                    |              | Mean          | Ν              | Std. Deviation   | Std. Error Mean |
|--------------------|--------------|---------------|----------------|------------------|-----------------|
| Pair 1             | PreDfL       | 3.11          | 34             | .29949           | .051            |
|                    | PostDfL      | 3.76          | 34             | .45010           | .077            |
|                    |              |               |                |                  |                 |
|                    |              |               |                |                  |                 |
| Paired S           | amples Corre | lations       |                |                  |                 |
| Paired S           | amples Corre | lations       | N              | Correlati        | an Sig          |
| Paired S           | amples Corre | elations      | N              | Correlati        | on Sig.         |
| Paired S<br>Pair 1 | PreDfL       | elations<br>& | <u>N</u><br>34 | Correlati<br>228 | on Sig.<br>.195 |

### Paired Samples Statistics



| <b>Qualitative</b><br>Themes and quotation from learning logbook,<br>reflective practice & semi-structured interview  | Quantitative<br>Corresponding Survey Items                           |  |  |  |  |
|---|--|--|--|--|--|
| Device Used (RQ2)<br>"The FutureLearn platform is very flexible as<br>I can use my iPad to access the platform at   | Type of mobile devices (Survey<br>Item 8) (RQ1)                      |  |  |  |  |
| anytime and anywhere" (Post-R/S30).<br>"Laptop is more convenient since this is my  | Smartphone (Pre: 23 (35.9%) /<br>Post: 25 (32.1%))                   |  |  |  |  |
| very first learning experiences in FutureLearn" (LB/D1/S20).  | Tablet         (Pre: 9 (14.1%) /<br>Post: 13 (16.7%))                |  |  |  |  |
| "I will used both smartphone and laptop. I<br>used laptop because of its wider screen and   | Netbook (Pre: 3 (4.7 %) /<br>Post: 4 (5.1%))                         |  |  |  |  |
| easy to watch video meanwhile I will used smartphone when away from home or during  | IPad (Pre: 4 (6.3 %) /<br>Post: 7 (8.9 %))                           |  |  |  |  |
| commute because of its portability and easy to assess" (I/R2).  | Laptop (Pre: 25 (39%) /<br>Post: 29 (37.2%))                         |  |  |  |  |
| "I personally learn many technology tools like<br>KaaHot, Poplet" (I/R3).   |  |  |  |  |  |
| Mobile learning elements (RQ2) "I enjoyed this mobile learning platform because this platform is simple and   | Ease of accessing the course<br>information<br>(Survey Item 5) (RQ1) |  |  |  |  |
| interesting even using my smartphone at any<br>time and place" (During-R/S15).<br>"I realise that FutureI earn platform enable me   | Above Average (Pre: 3 (8.8%) /                                       |  |  |  |  |
| to utilise the use of mobile devices with right<br>way and I felt this learning experiences has   | Among the Best (Pre:3 (8.8%) /<br>Post: 17 (50%))                    |  |  |  |  |
| given insight on using mobile devices for<br>meaningful learning and assessment purposes<br>other than just for social media and gaming"<br>(LB/W1/S25).<br>"I am so interested to learn and know about | No idea (Pre: 28 (82.4%) /<br>Post: 0)                               |  |  |  |  |
| this FutureLearn platform" (I/R1).  |  |  |  |  |  |
| Mobile-based assessment elements (RQ2)<br>"I never used my smartphone for online<br>assessment and this is totally new  | Ease of doing the course on the schedule time (Survey Item 5) (RQ1)  |  |  |  |  |

# Appendix M: Joint Display of Qualitative and Quantitative Data

experience" (Pre-R/S9).

- "During work free time or during commute, I used smartphone because save my time" (LB/D4/S7).
- "I can do this assessment without any issues" (I/R3).
- New learning and assessment experience (RQ4) "I have heard about this online learning platform but I never get experience of it" (Pre-R/S9).
  - "Yes, this learning process is interesting, fun, flexible, simple course content, easy to access and collaborative learning" (DR/S35).
  - "It was a new approach for me. Although had done a few online tasks, but all those were regarding my profession. But this online learning and assessment was totally different and interesting when using the mobile devices" (LB/W1/S19).
  - "First time using my mobile phone to do the assessment and it pretty challenging yet fun as I gain new experience out of it" (PR/S6).
  - "I finished my degree six years ago, I did not know about FutureLearn platform neither any M-learning. Only when I took my master course, had privilege to experience my own on this learning. I personally felt that this is very useful and can apply it in classroom" (I/R1).

Benefits of Mobile task-based activity (RQ4)

- "I am glad to learn new knowledge which benefit me a lot" (Post-R/S29).
- "Its' an eye opener, reminds me the important of keeping update with the new wave in education which involves digital technologies especially using mobile devices for learning

Above Average (Pre: 3 (8.8%) / Post: 15 (44.1%)) Among the Best (Pre: 3 (8.8%) / Post: 19 (55.9%)) No idea (Pre: 28 (82.4%) / Post: 0)

Awareness of MOOC (Survey item 1) (RQ1)

Pre: Yes = 5 (14.7%) / No = 29 (85.3%) Post: Yes = 34 (100%) /No = 0



ra Malaysia

Reason for using mobile devices for M-learning course (Survey Item 4) (RQ1)

Free and affordable (Pre: 9 (26.5 %) / Post: 15 (17.6 %) No perquisite required and assessment" (LB/W4/S23).

"For me it is very beneficial because now I Flexible Timing know kind of web 2.0 that I can use and (Pre:10 (29.4 %) apply it in my classroom" (I/R1) Update knowled

Personal Feelings (RQ4)

- "The course educator always appreciate my works and even other participants often give appreciation when I give any new ideas in discussion board. This increased my interest to learn more" (Post-R/S34).
- "Sometimes I scared to ask questions because of the language barrier. But the course educator and the other course participants could able to understand what I am trying to ask and being very responsive. Besides, they never fail to appreciate and recognize my effort in that online learning platform" (LB/W5/S9).
- "There was a task where I need to do the assignment in the FutureLearn platform. I do the assignment and submit it. There was a friend from a different country has reviewed my work and comment on it. This has increased my interest to do this work and felt like I got an appreciation" (I/R2).

Empowering learning (RQ4)

- "The course educator always appreciate my works and even other participants often give appreciation when I give any new ideas in discussion board. This increased my interest to learn more" (Post-R/S34).
- "Learning by good examples in videos is sometimes better than explained by a lecturer" (LB/D20/S12).
- "The quality of the FutureLearn platform is impressive and its allow me to learn at any

(Pre: 2 (5.9 %) / Post: 5 (14.7 %) Flexible Timing (Pre:10 (29.4 %)/ Post: 14 (17.7 %) Update knowledge (Pre: 13 (38.2 %) / Post: 20 (50 %)

Availability of student support (Survey Item 5) (RQ1)

Above Average (Pre: 4 (11.8 %) / Post: 11 (32.4%)) Among the Best (Pre: 2 (5.9 %) / Post: 12 (35.2 %)) No idea (Pre: 28 (82.4%)/Post: 11 (32.4 %))

Quality of the online learning and tutor

(Survey Item 5) (RQ1)

Excellent (Pre: 0 / Post: 6 (17.6%)) Good (Pre: 6 (17.6 %) / Post: 21 (61.8 %)) Fair (Pre: 0 / Post: 7 (20.6%)) No idea (Pre: 28 (82.4%) / Post: 0) time based on my flexibility. Besides that, the function and interface of the FutureLearn platform enable to use my mobile device for effective learning. The knowledge learned from that platform is good and thus I able to do the assigned assessment" (I/R6).

Social interaction (RQ4)

- "sharing my views with other course participants all over the world and this increase my confidence and interest to use my mobile devices for learning purposes more frequently" (DR/S6).
- "Sometimes I scared to ask questions because of the language barrier. But the course educator and the other course participants could able to understand what I am trying to ask and being very responsive. Besides, they never fail to appreciate and recognize my effort in that online learning platform" (LB/W5/S9).

"I got excited as get connected with other participants from all over the world and this hinders my fear to face them" (I/R6).

Empowering device (RQ4)

- "Accessing the platform using my iPad is easy as the functionality and the platform design is very supportive" (Post-R/S30).
- "Mobile devices allow mobility, portability and flexibility" (LB/W5/S7).
- "FutureLearn is a good learning platform and will introduce about this to other friends and answering the quiz enhanced my understanding of the course content" (LB/W5/S11).

"Now everyone knows how to use the mobile devices but why we only use the devices to Mobile device to engage in the interaction while adding content (Survey Item 11) (RQ1)

Posting questions (Pre:14 (12.8%) / Post: 16 (13.7%)) Answering questions (Pre:14 (12.8% / Post: 22 (18.8 %)) Commenting in discussion/ posts (Pre:18(16.5%) / Post: 13 (11.1%)) Social media (Pre:18 (16.5%) /Post: 18 (15.4 %)) Sending e-mail messages to other participants (Pre:18 (16.5%)/ Post: 18 (15.4 %))

Collaborating on a project

(Pre: 10 (9.3%) / Post: 14 (11.9%)) Informal chatting

(Pre:17 (15.6%)/ Post: 18 (15.4 %))

Quality of the course material (Survey Item 5) (RQ1)

Excellent (Pre: 0 / Post: 7 (20.6 %)) Good (Pre: 5 (14.7 %)/ Post: 23 (67.6 %)) Fair (Pre: 1 (2.9%) / Post: 4 (11.8 %)) No idea (Pre: 28 (82.4%) / Post: 0) play the game and not for learning. So we need this kind of learning and assessment to make use of mobile devices for an appropriate way of learning" (I/R1).

Barriers (RQ6)

Barriers in Mobile Task-based Activity

- "I was a working mother has to struggle in terms of finding the perfect time to do these activities" (Post-R/S25).
- "I was quite worried about my time management as I had children" (LB/D1/S18).
- "Time is an issue for me because at certain time where the school work is loaded so I feel like I need to put extra effort, sometimes I have to work until midnight, just to catch up with the pace" (I/R7).

Inhibited facet for M-learning Experience

- "I never explore any online learning platform before and I have no prior experiences on mobile technology skills to engage in this learning platform. Thus, I find this learning is difficult for me as my technology skills is not promising" (Post-R/S6).
- "The course content is interesting and the platform gives me new experiences but since I'm lack of digital literacy make me slow to progress and less interest" (LB/W2/S20).
- "I was initially having problem with Mlearning as I am not proficient in mobile technology skills and I never explore any online platform before. To overcome this I seek help from my colleague and instructors. I refer and follow my instructor or colleague instruction as he is the person I can look after in case of immediate answer or solution". (I/R8)

Course elements potentially interfere (barrier) (Survey Item 3) (RQ1)

Technical challenges

(Pre: 12 (31.6%) / Post: 11 (23.4%) Educator and instructor support (Pre: 10 (26.3%)/ Post: 12 (25.5%) Unexpected course content (Pre: 6 (Pre: 6 (15.8%) / Post: 10 (21.3%) My ability to organize my learning (Pre: 6 (15.8%) / Post: 11 (23.4%)

379

Inhibited facet for SDL Readiness

"I'm a slow learner so I need my instructor to guide me all the time so that my learning process goes smoother" (DR/S19).

"I am looking for instructor guidance as not confidents to learn this platform" (LB/W1/S9).

"I need constant support from the instructor as I'm not good in technology and this learning is totally new for me" (I/R9).

Self-directed learning readiness (RQ5)

Self-control

"I never thought that I can complete the assessment on time and I realise that I have strong believe on myself that I can perform best in the mobile task-based activities" (Post-R/S22)

"The learning experience in FutureLearn has given me the confident to do the mobile-based assessment" (LB/W5/S9).

"I would like to produce quality work in task based activity as my own way to evaluate my learning outcomes" (LB/W5/S17).

"It's quite difficult for me to fully understand the lesson. Anyway that problem will not stop me from learning. I considered it as a challenge. In no time at all, I will overcome that problem. I like learning" (LB/W1/S21).

"I need to complete this task with flying colour. Despite many challenges, I overcome it. I have strong believed that I need to complete the task-based activity no matter what" (I/R6).

Self-management (RQ5)

"I'm thinking of organizing the right time to get involved in this is FutureLearn platform and mobile-based assessment amidst my busy schedules after my work time" (DR/S15). Self-directed learning readiness (Survey) (RQ3)

Self-control (pre-test: 3.22/ post-test: 4.46)



Self-management (Survey) (RQ3) (pre-test: 3.02/ post-test: 3.81) "I can share information and learn new knowledge. However, I have a limited time. To overcome this problem I have to be wise to manage the time. This is because through FutureLearn I can learn a lot of knowledge" (LB/W4/S21).

"Usually I never bring back my schoolwork to home. I settle my schoolwork at school itself and once I'm back home, I will settle my children first and then will find a free time for me. I do have my timetable and I usually will start engaging in this platform at night as my children go for sleep. This is the time where I spend for the online learning" (I/R4).

Desire for learning (RQ5)

"The instructor effort in guiding us throughout this learning.....the way instructor explained about the benefit and the course certificate has increased my interest and curiosity to know about this platform" (Post-R/S26).

"Instructor motivates me to engage more in this platform" (LB/D12/S3).

"My prior experience and interest to explore and learn more allow me to learn this online learning platform independently. For me, this platform has given a positive impact on learning" (I/R6).

Desire for learning (Survey) (RQ3) (pre-test: 3.12/ post-test: 3.77)

| Rubric                    | TASK1 (20%) | TASK 2 (30%) | TASK 3 (50%) |  |  |
|---------------------------|-------------|--------------|--------------|--|--|
| Ideas & Content           | 10          | Х            | Х            |  |  |
| Use of enhancement        | 10          | X            | Х            |  |  |
| Writing Quality           | Х           | 10           | Х            |  |  |
| Community                 | Х           | 10           | Х            |  |  |
| Goal setting              | Х           | 10           | Х            |  |  |
| Self-monitoring           | Х           | Х            | 10           |  |  |
| Technology Skills         | Х           | Х            | 10           |  |  |
| Effective use of resource | Х           | Х            | 10           |  |  |
| Help seeking              | Х           | Х            | 10           |  |  |
| Self-evaluation           | Х           | Х            | 10           |  |  |

**Appendix N: Sample of Scoring** 

| STUDENT<br>NAME | Activity<br>1<br>(e-<br>portfolio)<br>(TOTAL=<br>20%) | Activity<br>2<br>(reflective<br>writing)<br>(TOTAL=<br>30%) | Activity<br>3<br>(create<br>video)<br>(TOTAL=<br>50%) | TOTAL<br>100% | Idea<br>&<br>conte<br>nt | use of<br>enhan<br>cemen<br>t | writi<br>ng<br>qualit<br>y | com<br>muni<br>ty | Goal<br>setting | Self-<br>monitor<br>ing | Tech<br>nolog<br>y<br>skill | effectiv<br>e use of<br>resourc<br>e | help<br>seeking | self-<br>evaluation |
|-----------------|---|---|---|---------------|--------------------------|-------------------------------|----------------------------|-------------------|-----------------|-------------------------|-----------------------------|--------------------------------------|-----------------|---------------------|
| STUDENT<br>A    | 17  | 25  | 37  | 79            | 8                        | 9                             | 9                          | 8                 | 8               | 7                       | 7                           | 7                                    | 9               | 7                   |
| STUDENT<br>B    | 16  | 24  | 38  | 78            | 7<br>ive                 | 9<br>rsiti                    | 7<br>Uta                   | 9<br>ara          | 8<br>Mala       | <sup>8</sup><br>avsia   | 8                           | 6                                    | 9               | 7                   |
| STUDENT         | 16  | 21  | 39  | 76            | 9                        | 7                             | 7                          | 8                 | 6               | 9                       | 9                           | 6                                    | 6               | 9                   |

# Task 1: E-portfolio



## Task 2: Reflective Writing



# Task 3: Video Presentation

