



MONASH University

**Factors influencing the development of institutional
Open Educational Resource repositories in Vietnam**

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Abstract

Internationally, research into Open Educational Resources (OER) is one of the most prevalent topics of recent interest in the open movement. However, current OER scholarship has mainly investigated factors affecting users' acceptance and usability of OER rather than factors influencing the development of institutional Open Educational Resource repositories (IOERs) from the viewpoint of higher education providers. Further, there is a scarcity of empirical research relating to the development of IOERs in general within a developing country context.

This study focuses on understanding the development of IOERs as an educational change at higher education organisations (HEOs) in Vietnam. The key research objectives are to ascertain how HEOs are approaching their IOERs development and identify factors affecting the development process. This study also seeks to identify the campus stakeholders involved in IOER development, explore the benefits of OER and identify the skills and knowledge needed for engaging with OER. A conceptual framework of IOER-related factors is presented to assist OER advocates in Vietnam (and similar countries) in developing OER repositories.

This study employed an inductive reasoning approach and an interpretivist paradigm. The research findings are based on the analysis of 20 semi-structured interviews with relevant participants and documentary evidence obtained mainly from fieldwork in Vietnam in early 2019. Participants were university administrators, leaders of IOER projects, library administrators, library staff, faculty administrators, faculty members and OER champions from universities and education-related organisations in Vietnam. They were recruited using non-probability sampling techniques. The theory of educational change (Fullan, 2007) was adopted. The second component of the theory (factors affecting the change) was adapted to develop an initial framework used to assist data analysis. The collected data were analysed using the conventional content analysis approach (Hsieh & Shannon, 2005).

The empirical findings found that the development of IOER is a complex and massive educational change influenced heavily by multiple interconnected factors. Eight types of factors were identified to influence the development of IOERs in Vietnam: (1) The

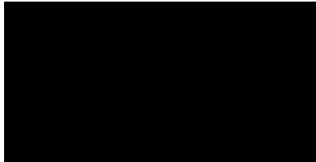
characteristics of the IOER development project; (2) Access to information about the IOER development project; (3) Economic factors; (4) Political factors; (5) Socio-cultural factors; (6) Pedagogical factors, (7) Legal factors, and (8) Technological and infrastructure factors.

The research provides a range of practical implications and theoretical contributions relating to the development of IOERs in Vietnam, along with related issues. It is anticipated that the study's findings will prove useful to higher education stakeholders in Vietnam and similar countries, from those seeking to implement educational change more broadly to those aiming specifically to develop an OER repository at their university.

Keywords: Open educational resources; OER; institutional Open educational resource repository; development process; factors; benefits of OER; OER stakeholders; OER literacy; educational change; Michael Fullan; higher education organisations; Vietnam

Declaration

This thesis is an original work of my research and contains no material which has been accepted for the award of any other degree or diploma at any university or equivalent institution and that, to the best of my knowledge and belief, this thesis contains no material previously published or written by another person, except where due reference is made in the text of the thesis.



Signature

Ngoc Tuong Vi Truong

20 September 2021

Publications during Enrolment

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Truong, V. (2019, November). *Necessary and sufficient conditions for the development and adoption of institutional Open Educational Resource initiatives: The case of universities in a developing country* [Lightning talk]. The Open Education Global Conference 2019 (OE GLOBAL 2019), Milan, Italy. https://oeglobal2019.sched.com/vi_truong.775ilhq

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Acronyms

ACRL	Association of College & Research Libraries
AVU&C	Association of Vietnam Universities and Colleges
C	OER Champion
CC	Creative Commons
COL	Commonwealth of Learning
F	Faculty Member
FA	Faculty Administrator
FETP	Fulbright Economics Teaching Program
GPL	GNU General Public License
HEO	Higher Education Organisation
ICT	Information Communication Technology
IOER	Institutional Open Educational Resources Repository
IP	Intellectual Property
IPR	Intellectual Property Right
ISKME	Institute for the Study of Knowledge Management in Education
IT	Information Technology
LA	Library Administrator
LS	Library Staff Member
MIT	Massachusetts Institute of Technology
MOET	Ministry of Education and Training
MOOC	Massive Open Online Course
MOST	Ministry of Science and Technology
MUHREC	Monash University's Human Research Ethics Committee
NALA	Vietnamese Northern Academic Library Association
NC	Non-Commercial
ND	No Derivative
OA	Open Access
OCW	Open Courseware
OECD	Organisation for Economic Co-operation and Development
OEP	Open Educational Practice
OER	Open Educational Resources

OL	IOER Leader
RDOT	National Centre for Research and Development of Open Technologies
SA	Share-Alike
SDG	Sustainable Development Goal
UA	University Administrator
UNESCO	United Nations Educational, Scientific and Cultural Organisation
VEF	Vietnam Education Foundation
VFOSSA	Vietnam Free and Open Source Software Association
VILASAL	Vietnamese Library Association of Southern Academic Libraries
VNU	Vietnam National University
VNU USSH	Vietnam National University - University of Social Sciences and Humanities
VOCW	Vietnam OpenCourseWare Program
VOER	Vietnam Open Educational Resources Program
U.S.	The United States

CHAPTER 1 - INTRODUCTION

1.1 Introduction

Open Educational Resources (OER) are any type of educational resource in a global, national or institutional repository that is released with an open license, granting free access and the right to adapt and reproduce resources. OER primarily aim to enhance and assure equality for learners and educators in accessing high quality, free educational information. This thesis sets out to investigate and provide insights into the development of institutional Open Educational Resources repositories (IOERs) in higher education organisations (HEOs) in Vietnam. IOERs are online archives in universities used for collecting, preserving, and disseminating the OER. The study achieves its objectives by first ascertaining how HEOs are approaching their IOERs development, identifying and examining the campus stakeholders involved in the IOER development, then identifying the factors that affect the development of IOERs, as well as understanding how these factors influence development. This thesis also aims to develop a conceptual framework of IOER-related factors that will enable universities and institutions to build IOERs effectively, in line with Vietnam's economic, social and educational conditions.

One of the problems investigated in this study is the lack of understanding and knowledge of the development of IOERs in Vietnam and related issues. This is a significant problem, as the thriving OER movement, which has been proved to significantly benefit education in many countries worldwide, can help address numerous existing problems constraining the development of higher education in Vietnam. This research contends that developing IOERs is not an easy task, and it is necessary to find a long-term comprehensive agenda as well as to engage the active participation of all parties. The insights gained from this research will enable many stakeholders, especially leaders of universities in Vietnam, to promote and embrace the OER movement, as well as develop OER repositories to support teaching and learning on the campus.

The next section of this chapter presents the statement of the problem, followed by an introduction about the research context including higher education organisations in Vietnam, their governance and some significant shortcomings. The research objectives and questions are then identified. This chapter also discusses the significance and urgency of the study. An outline of the structure of the thesis is presented in the final section of this chapter.

1.2 Statement of the Problem

This section lays a foundation for understanding the research background and problem. It discusses the broad context, significance and development of the global OER movement, and the shortcomings of the OER movement in Vietnam which led to the motivation to conduct the study.

OER play an important role in achieving Sustainable Development Goal 4 (SDG 4) - Quality Education in the United Nations' Sustainable Development Goals (SDGs) (McGreal, 2017). The SDGs were adopted by 193 Member States of the United Nations at the 2015 Sustainable Development Summit in New York. Officially coming into force on 1 January 2016, the seventeen goals call for action and concerted efforts from all nations worldwide to promote prosperity while protecting the planet. The United Nations define sustainable development as “development that meets the needs of the present without compromising the ability of future generations to meet their own needs” (United Nations, n.d.a). By 2030, governments are urged to proactively take control and establish national frameworks to achieve all the goals recommended to ensure a sustainable future.

Among these SDGs, the fourth one - Quality Education - focuses on the assurance of inclusive and equitable quality education and promoting lifelong learning opportunities for all. It is considered the starting point and also the pivot of all proposed SDGs. Internationally, there have been numerous studies and discussions on how open education and OER can significantly help achieve the targets of SDG 4 (such as Lane, 2017; McGreal, 2017; Miao et al., 2019; Ossiannilsson, 2019; Demirbağ & Sezgin, 2021). Indeed, equal access to quality education is fundamental to sustainability as it

can significantly save and transform people's lives. For instance, with adequate education, people can be aware of their rights, and consequently fight against all types of inequalities. They also can increase their opportunity to be employed, earn incomes and transition out of poverty, create job opportunities for others and contribute to economic growth, while tackling other issues like climate change or access to energy, clean drinking water and sanitation. Mr Ban Ki-moon, Former Secretary-General of the United Nations, highlighted the importance of access to quality education in achieving sustainable development:

Education is a fundamental right and the basis for progress in every country. Parents need information about health and nutrition if they are to give their children the start in life they deserve. Prosperous countries depend on skilled and educated workers. The challenges of conquering poverty, combatting climate change and achieving truly sustainable development in the coming decades compel us to work together. With partnership, leadership and wise investments in education, we can transform individual lives, national economies and our world. (UNESCO, 2014)

Understanding the importance of universal access to information through high-quality education in sustainable development, the United Nations Educational, Scientific and Cultural Organization (UNESCO) has been actively supporting the OER movement via various large-scale projects, world congresses, inter-governmental discussions, international conferences and other activities. The OER movement is a global phenomenon similar to other movements like Open Education, Open Source and Open Access (Stracke, 2020). This movement began early in 1999; however, it expanded worldwide only after the launch of the Massachusetts Institute of Technology's Open Courseware (MIT OCW) in October 2002 (MIT OpenCourseWare, n.d.b). Internationally, OER are considered by their advocates as one of the primary sources of information which supports universal education and narrows the educational gap between regions, countries, ethnicities, genders, and formal and informal education. OER provide an opportunity for developing nations, such as Vietnam, to access free high-quality educational resources and use the OER concept to create educational resources that suit the local culture. To this end, governments, associations, higher

education organisations, libraries, and individuals worldwide are participating actively in harnessing, developing, and promoting OER.

As a growing economy with a youthful population, Vietnam has a strong need for and considerable potential for using and producing OER. Despite there being a large number of universities and educators in the country, much remains to be done in terms of providing consistent quality across the sector. One of the most critical reasons suggested by educational researchers from Vietnam is the shortage of learning resources for teaching, researching and studying. According to a survey conducted in 2017 by the Vietnam National University - University of Social Sciences and Humanities (VNU USSH) in Hanoi, of thirty key universities across the country only 19 per cent of users indicated that library resources could meet their needs (Do, 2017). In the same survey, 44 per cent rated library resources as average or poor (Do, 2017). This situation is a consequence of the limited budget for licensing and subscribing to commercial resources in Vietnam's HEOs, especially public ones. Therefore, in Vietnam, cooperation in producing and sharing learning materials is looked to as one effective solution. Among the information resource sharing strategies applicable to universities in Vietnam noted in Do's report (2017), the Open Educational Resource is the most frequently recommended.

However, in harnessing international OER, users in Vietnam reported facing many obstacles. The challenges were evident in the apathy of users in Vietnam towards the Vietnam Open Educational Resources (VOER) Program, which includes MIT's renowned open courseware content (in English). Do (2013), representing the VOER project team, reported the challenges of Vietnamese users in using OER obtained from MIT, namely different background knowledge and the limited English proficiency of Vietnamese users, different teaching and learning styles in Vietnam, and the limited access to reference books. Therefore, adopting the OER concept to develop OER in Vietnamese for Vietnamese people is considered a more suitable solution.

Realising the potential of OER for education and training, stakeholders in Vietnam have been making positive moves to embrace their adoption. For more than 15 years since OER were introduced officially in Vietnam via the development of the VOER program in 2005, OER-related activities have grown, ranging from national scientific seminars

to institutional training courses. Universities and libraries are very active in participating in OER programs offered by the government and various organisations; however, they remain hesitant to develop their IOERs, which is reflected in the lack of operational IOERs. Developing an IOER is complex and requires a long-term comprehensive strategy, as well as advocacy and the active participation of all parties. This research contends that the development of IOERs in Vietnamese universities, despite providing great opportunities, is currently overwhelmed by challenges and is impacted by many contextual factors. Despite the considerable amount of recent literature about OER and their related issues, there is a scarcity of research relating to the development of IOERs, especially within a developing country context. This research seeks to address this problem by exploring the development of IOERs in Vietnam, especially the factors affecting the development from the viewpoint of higher education providers.

1.3 Higher Education Organisations in Vietnam

This section provides background information about the research context, which is higher education in Vietnam. It starts with a summary of the country and its development in recent years, followed by an introduction about the higher education system and its governance. The problems and shortcomings in the higher education sector in Vietnam are also discussed in this section.

Vietnam, or the Socialist Republic of Vietnam, which has Hanoi as its capital and Ho Chi Minh City as its largest city, is one of the few communist countries in the world. Geographically, this S-shaped nation is located in the Indochina peninsula and bordered by China (north), the South China Sea (east and south), the Gulf of Thailand (southwest), and Cambodia and Laos (west) (Encyclopædia Britannica, n.d.). Figure 1 presents a map of Vietnam.



Figure 1: Map of Vietnam

Note. From *Vietnam Regions Map* [Online image], 2009, Wikimedia Commons (https://commons.wikimedia.org/wiki/File:Vietnam_Regions_Map.svg). CC BY-SA 3.0

As already noted, Vietnam has a great need for and potential in using and developing OER. In 2021, Vietnam has over 98 million inhabitants, increasing from about 60 million in 1986 (World Population Review, 2021), making it the world's 15th most populous country (Worldometer, 2021). According to The World Bank (2021), Vietnam has a young population, with about 55 per cent of the population under 35 years old in 2019. The life expectancy of Vietnamese people is 76 years (World Bank,

2021), and the literacy rate in 2018 was 95 per cent of the population aged 15 years and older (UNESCO Institute of Statistics, n.d.). This Southeast Asian country is the home of 54 ethnic groups, of which about 87 per cent of the population are the Viet (Kinh) people (Vietnam Government Portal, n.d.a), living across 329,247 square kilometres (National Geographic, n.d.). The official language of Vietnam is Vietnamese, while English is recently favoured as the second language on the campus of many universities (The PIE, 2016; Trines, 2017).

Over the past 20 years Vietnam has developed rapidly, despite being devastated after a long war and natural disasters since the 1950s. With a series of political, economic, and socio-cultural reforms launched by the government in 1986, called “Đổi Mới”, Vietnam has transformed from one of the poorest economies into a newly industrialised and middle-income country with a GDP per capita in 2019 of over US\$2,700 (World Bank, 2021). Vietnam is a one-party state governed by the Communist Party, with the supremacy of the Communist Party clearly enshrined in its Constitution. The National Assembly, which is elected for a five-year term and typically has 500 delegates, is the highest representative body of the Vietnamese people and the highest organ of State power of Vietnam (Vietnam Government Portal, n.d.b). The State monopolises power and exerts firm control over all areas of society, including education.

Article 6 of the 2019 Education Law, which took effect from 1 July 2020, stipulates the education and training levels of the national education system in Vietnam at four levels: pre-school education, compulsory education, vocational education, and higher education (Vietnam Government Portal, 2019b). The higher education system of Vietnam is strongly centralised under the State and its ministries. In particular, the key public universities are under the direct management of the Ministry of Education and Training (MOET), while others are overseen by provincial governments or ministries. However, in general, MOET in Hanoi still has extensive regulatory responsibilities across all of the education system (Hayden and Lam, 2007). As a legacy of the Soviet Union’s impact on Vietnam after the Second World War, specialised colleges and HEOs were established and directed by related ministries (Hayden and Lam, 2007; Trines, 2017). These ministries are responsible for providing necessary funds, support and management for the operation of these schools. For example, military schools, academies, and universities are under the purview of the Ministry of Defence, and the

Ministry of Public Security supervises police schools and universities. As an exception, two national universities, namely Vietnam National University Hanoi (VNU Hanoi) and Vietnam National University Ho Chi Minh City (VNU Ho Chi Minh City), are directly governed by the Cabinet. Although the concept of institutional autonomy has been raised in Vietnam for many years, HEOs in Vietnam, especially the public ones, still rely heavily on State governance. Except for the two privileged national universities, all others have to follow the regulations, procedures and guidelines from MOET in order to operate (World Bank, 2008).

The higher education system of Vietnam and its governance have undergone dramatic change over recent decades, especially with the introduction of Decree No. 90/CP in 1993 to prescribe the framework of the Vietnam education system, and the system of diplomas and certificates in education and training. Universities have adopted many improvements in curricula and teaching methods and have expanded the number of disciplines (World Bank, 2008). In the academic year 2018-2019, Vietnam had 237 universities and institutes, including 172 public and 65 non-public (private and foreign-related) ones, 1.52 million students and 73,312 lecturers (Vietnam Ministry of Education and Training, 2020). In 2021, two national universities (VNU Ho Chi Minh City and VNU Hanoi) entered the top 1000 universities worldwide in the 2022 QS World University Rankings (QS Quacquarelli Symonds, 2021). However, those achievements are not commensurate with what the potential suggests. Despite recent positive changes towards modern governance and rapid expansion, the quality of higher education in Vietnam is still not high, even lagging behind other countries in the area. This is evident, amongst other things, in the increasingly high number of Vietnamese students seeking education abroad, with about 190,000 studying abroad in 2020 (Vietnam Education E-Journal, 2020).

Many factors have led to this unfavourable situation. They have been documented by Vietnamese and international education scholars over time, and include a lack of high-quality universities, an increase of low-quality private higher education providers, shortage of qualified academic staff and high-quality learning resources, low rate of educator involvement in research, or impractical and inflexible curricula (Pham & Gerald, 2002; Hayden and Lam, 2007; Tran, 2013; Dao, 2015; Le & Hayden, 2017; Trines, 2017). Although the government of Vietnam has been investing approximately

20 per cent of the State budget (also the largest expenditure item) in education and training for many years (Dinh, 2018; United Nations in Viet Nam, 2018), the workforce of this country has not been able to meet employment market requirements in terms of quantity and quality (Australian Government - Department for Foreign Affairs and Trade, 2015; Trines, 2017).

Various challenges and shortcomings of the Vietnam higher education system supposedly originate from the complexity of the regulatory framework and the far-reaching, even excessive regulatory controls over the operation of HEOs in Vietnam imposed by government and other agencies. For example, there are externally imposed enrolment quotas for each department in each university and college, external controls over the deployment of staff, and rigid frameworks determining curriculum and textbooks for all programs of study. These bureaucratic controls and practices make university management unnecessarily complex and ineffective, and they have been hindering innovation, modernisation and internationalisation of higher education in Vietnam for decades (World Bank, 2008; Trines, 2017; World Bank, 2020). Other socio-cultural and pedagogical issues also challenge higher education in Vietnam; for example, problems due to high levels of plagiarism and the copyright infringement situation, and the prevailing old-fashioned teaching approach. As Vietnam was ruled by various Chinese dynasties for more than a millennium (Encyclopædia Britannica, n.d.), it is understandable that Vietnamese culture and education have been heavily influenced by many philosophical and belief systems from ancient China, especially Confucianism. As a result of the Confucian heritage, teachers and educators in Vietnam are highly respected, leading to the prevalent teacher-centred teaching and learning approach. For many decades, students in this country have been obedient but quite passive and dependent in learning (Tran, 2013), and as a consequence, graduates lack employability skills to secure and maintain jobs (World Bank, 2008).

In short, the development of higher education in Vietnam is very promising; however, numerous existing problems constrain further development. The government of this country needs to profoundly comprehend the roots of these problems and find ways to address them to improve teaching, learning and research quality. Researchers and organisations around the world (such as Hayden & Lam, 2007; World Bank, 2008; Harman & Nguyen, 2010; Australian Government - Department for Foreign Affairs

and Trade, 2015; Trines, 2017; World Bank, 2020) have proposed many recommendations to address the challenges and shortcomings in the Vietnam higher education system, with delegating more institutional autonomy and accountability to HEOs the most frequently suggested. They have also recommended that the Vietnamese government update educational policies to encourage transparency and openness in higher education, promote interactive teaching and problem-based learning, and implement innovations in teaching and learning.

1.4 Research Objectives and Questions

This research aims to:

- (1) investigate and provide insights into the development of IOERs in Vietnam, including ascertaining how HEOs are approaching their IOERs development and identifying the factors that affect the development of IOERs;
- (2) identify the campus stakeholders involved in the IOER development process in Vietnam and understand how these stakeholders are involved in IOER development;
- (3) explore the participants' perceived benefits of OER;
- (4) identify the skills and knowledge needed for engaging with OER;
- (5) develop a framework of IOER-related factors.

In general, this research focuses on investigating and providing a picture of the development of IOERs in Vietnam from the viewpoints of higher education providers. In order to achieve the research objectives, the theory of educational change proposed by Michael Fullan in 2007 is used. This theory looks at two aspects of the education change: the change process and the factors affecting the change. In this research, these two aspects (or components) of Fullan's theory were adopted to assist the data analysis. Especially, the second component, factors affecting the change, was adapted to develop an initial theoretical framework. The theory and theoretical framework are explained more fully in Chapter 3 – Theory and Initial Theoretical Framework. In order to achieve

its goals, this study has three main research questions and four associated sub-questions (SQs).

Research Question 1: How can the implementation of IOERs best be managed within HEOs?

SQ1-1: What are the participants' perceived benefits of OER?

SQ1-2: What are the skills and knowledge needed for engaging with OER?

SQ1-3: Who are the campus stakeholders involved in IOER development in Vietnam?

SQ1-4: How are HEOs in Vietnam approaching the development of IOERs?

Research Question 2: What are the factors affecting the development of IOERs in Vietnam?

Research Question 3: How can Fullan's theory of educational change be adapted to better represent the educational change in this context?

1.5 Significance and Urgency of the Study

This research provides a general understanding of the current situation of the OER movement in Vietnam. To date, there is little scholarship available in English and in Vietnamese concerning the OER movement in this country. The data and findings provided in this thesis address a need for details of the OER movement to be better documented. A better understanding of the situation will encourage more organisations, universities and other stakeholders in Vietnam and overseas to contribute to and support the OER movement in Vietnam.

It appears that very little research has been conducted into investigating the development of IOERs, even though the term OER is increasingly used in libraries, schools, and society worldwide. This research is motivated by the fact that institutional repositories of OER in Vietnam must be developed in response to the call of MOET regarding the adoption, creation and development of OER at universities in Official

dispatch No. 4301/BGDĐT-GDĐT (Ministry of Education and Training, 2019b) issued in late 2019. This study provides fundamental knowledge regarding IOER development in Vietnam. University administrators, policy makers and decision makers in Vietnam can refer to the findings of this study regarding the IOER development process and the stakeholders involved in the process and, more importantly, the factors affecting IOER development to prepare and plan for their IOER development projects. Further, universities and their authorised stakeholders can employ the findings concerning the potential of OER to education in Vietnam to raise awareness of students and staff about OER and promote OER on the campus. They also can prepare OER users and creators with the skills and knowledge needed to fully engage with OER while waiting for official policy on OER from MOET to be drafted and promulgated. It is worth noting that the research activity itself will raise awareness of OER and their potential among various stakeholders in Vietnam.

Sustainable development, as a common goal that all of humankind is endeavouring to achieve, is also an important strategic goal of Vietnam. As noted earlier, higher education in Vietnam faces serious challenges. Seen as a lever of change in higher education in Vietnam, open education practices will help address many of the existing educational problems. In the long term, putting OER into practice contributes to the sustainable development of the country by providing access to diverse and high-quality education resources, reducing education costs for stakeholders, offering opportunities to collaborate on knowledge sharing and creation, and promoting academic integrity, educational equity and lifelong learning.

1.6 Structure of Thesis

The overall structure of the study takes the form of eight chapters. Following this introductory chapter, Chapter 2 – Literature Review and Analysis introduces OER and notable OER initiatives in Vietnam and worldwide. The chapter also summarises the findings of an analysis of the literature concerning the potential benefits of OER, the challenges for embracing the OER movement and the roles of university libraries in the OER movement. The research gaps and associated research questions are also proposed in Chapter 2.

Chapter 3 – Theory and Initial Theoretical Framework provides an overview of the theory of educational change (Fullan, 2007), explains the rationale for adopting it in this research, and reviews many studies that have employed this theory. This chapter also presents an adaptation of Fullan’s theory to develop an initial theoretical framework to support data analysis.

Chapter 4 – Research Design and Implementation explains the research methods, methodologies, research instruments and software adopted to design and implement this research, as well as the reasons for employing them. In addition, other issues such as language and ethical considerations are taken into account in this chapter.

The research findings, including five themes identified in the research, are presented in Chapter 5 – Participants’ Perceptions of OER and IOER Development, and Chapter 6 – Factors Affecting the Development of IOERs. Chapter 5 articulates the first four themes, namely: participants’ awareness of OER, perceived benefits and attitudes towards its development; the knowledge and skills needed to engage with OER; identification of campus stakeholders involved in IOER development; and participants’ perceptions of the IOER development process. Chapter 6 – Factors Affecting the Development of IOERs examines the last theme, the factors affecting the development of IOERs in Vietnam.

The research findings are then compared with the literature and considered in Chapter 7 - Discussion. Also, in this chapter, a conceptual framework of IOER-related factors is proposed.

Finally, a summary of the research findings and arguments is presented in Chapter 8 - Conclusion. This chapter also proposes the implications and contributions of this research to the literature, practice and theory of OER. The limitations of the research and suggestions for future studies are discussed. Recommendations for the government and other authorised bodies and administrators of universities, departments, and offices in Vietnam are also presented in this final chapter.

CHAPTER 2 - LITERATURE REVIEW AND ANALYSIS

Education is the most powerful weapon which you can use to change the world.

Nelson Mandela (1918 - 2013)

2.1. Introduction

This research primarily aims to ascertain how HEOs are approaching their IOERs development and identify the factors that influence the development in the context of Vietnam. The Educational Change theory of Fullan (2007) provides the inspiration for the development of a theoretical framework that examines, explains and validates the research findings. The Educational Change theory and the development of the theoretical framework are discussed in the next chapter. This chapter provides an overview of OER, the concepts they are based on and significant OER initiatives in Vietnam and worldwide. The chapter also reports the findings of literature analysis regarding the potential benefits of OER, the challenges of embracing the OER movement and the roles of university libraries in the OER movement. Initially, some questions were established to guide the literature review and analysis:

- What are OER?
- What is the history of OER internationally and in Vietnam?
- What benefits can OER offer?
- How are HEOs in Vietnam and other countries approaching development of IOERs?
- Who is involved in the development of IOERs in Vietnam and other countries?
- What are the skills and knowledge needed to engage with OER?
- What factors affect the development of IOERs in Vietnam and other countries?

However, not all of these questions were answered by previous studies, demonstrating the presence of gaps in the research. The key research gaps and research questions are proposed at the end of this chapter.

2.2 OER and OER Initiatives

The term “Open education” was used by the William and Flora Hewlett Foundation (2021) to encompass the “myriad of learning resources, teaching practices and education policies that use the flexibility of OER to provide learners with high-quality educational experiences”. OER are at the heart of the global open education movement and have attracted much interest and support from stakeholders around the world. This section first explores the definitions of OER and associated concepts; examines their potential benefits; then provides information regarding primary OER initiatives and activities in Vietnam and worldwide.

2.2.1 OER definitions

Over the past two decades, there have been many definitions of OER focusing on issues such as goals, functionality, data formats, storage, and licensing, through to development, implementation and quality evaluation (Stracke et al., 2019). Based on these definitions universities, associations, and educational institutions have provided some generalisations about OER. For example, the Cape Town Open Education Declaration (2007) noted that OER

should be freely shared through open licenses which facilitate use, revision, translation, improvement, and sharing by anyone. Resources should be published in formats that facilitate both use and editing, and that accommodate a diversity of technical platforms. Whenever possible, they should also be available in formats that are accessible to people with disabilities and people who do not yet have access to the Internet.

According to OER Commons (n.d.),

OER are teaching, learning, and research resources that reside in the public domain or have been released under an intellectual property license that permits their free use and re-purposing by others. OER include full courses, course materials, modules, textbooks, streaming videos, tests, software, and any other tools, materials, or techniques used to support access to knowledge.

The Organisation for Economic Co-operation and Development (OECD, 2007) states that OER are

digitised materials offered freely and openly for educators, students, and self-learners to use and reuse for teaching, learning, and research. OER includes learning content, software tools to develop, use, and distribute content, and implementation resources such as open licenses.

Two of the most frequently cited definitions are from the Creative Commons and UNESCO. UNESCO (2021) considers that OER are

teaching, learning and research materials in any medium – digital or otherwise – that reside in the public domain or have been released under an open license that permits no-cost access, use, adaptation and redistribution by others with no or limited restrictions.

Similarly, OER are defined by Creative Commons (2020) as

teaching, learning, and research materials that are either (a) in the public domain or (b) licensed in a manner that provides everyone with free and perpetual permission to engage in the 5R activities.

A leading figure of the OER movement, David Wiley (n.d.), introduced the concept of 5R activities: that is, five free and direct permissions of licensees to engage with OER:

- *Retain* is the permission for licensees to keep possession of the resource;
- *Revise* relates to the right given to licensees to adapt and modify the copy of the resource;
- *Remix* is the right of licensees to mix or combine the resource with other material for their use;
- *Reuse* means licensees are allowed to use the resource in other contexts if they desire;
- *Redistribute* permits licensees to distribute copies of the original, revised, or remixed copy of the resource with others.

In general, there are two broadly accepted approaches to OER. The first considers OER as a total solution for content, tools, software, and technology, and the second focuses on the development of OER content. In this research, similar to UNESCO's definition, OER are considered as any type of educational resource in any medium, but mostly digital, which reside in the public domain with no rights reserved or are released under open licenses with some rights reserved. The openness of OER is characterised by the right of anyone from anywhere in the world to access, adapt, and reproduce them freely. In this investigation, an IOER is defined as a university online archive used for collecting, preserving, and disseminating OER. The OER held in an IOER are the intellectual output of that university and/or are collected, localised resources from elsewhere. Practices that support the institutional use, reuse and production of OER are called Open Educational Practices (OEPs).

Apart from their educational aims, OER are cultural products, in the sense that they give users “an insight into culture-specific methods and approaches to teaching and learning - a practical exposure to the way that courses are ‘done’ in another country or by another instructor” (Yuan et al., 2008, p.15). As OER are created based on specific contexts, languages and teaching methodologies that are grounded in and specific to the culture and educational norms of their developers, to use the OER in a different context, people need to localise them. D’Antoni (2007, p.6) concluded that “content [of OER] needs to be culturally and linguistically translated”. Localising OER material is not only a problem of language but also one of culture. As mentioned in Chapter 1 – Introduction, Vietnamese is the only official language in Vietnam, although some mountain tribes also speak a language of their own. As a consequence, Vietnam has some advantages in the localisation of OER compared to other multilingual countries.

OER include fully developed courses or course materials, learning objects, open textbooks, openly licensed videos, tests, software, and other tools, materials, or techniques used for teaching, learning and researching (Montgomery College, n.d.). OER can be divided up in many ways, such as by quality, by authorship, by presentation, by licensing, or by nature/format. By content type, OER can be divided into four main groups: text led, video led, animation led and multimedia. By purpose, OER can be classified into several key types as follows.

Open Courseware (OCW)

OCW is often oriented towards the contents of a specific and structured course. Sometimes people use the term OCW to mean OER. In this research, the researcher considers OCW to be part of OER. OCW provides course materials for specific courses (Butcher, 2015). According to Do (2016b), OCW is more structured and usually designed for a specific course. Some examples of popular OCW are: MIT Open Courseware (<https://ocw.mit.edu/index.htm>); Open Learning Initiative (<http://oli.cmu.edu/>); and OpenLearn (<http://www.open.edu/openlearn/free-courses>); OERu (<https://oeru.org/>).

Open Textbooks

The introduction of the open textbook can be very helpful for student with financial problems. Instructors also benefit from the flexibility of open textbooks, because they are able to create customised versions of the textbook for their own courses. This is the definition of open textbook provided by Montgomery College (n.d.):

An open textbook is a textbook licensed under an open copyright license and made available online to be freely used by students, teachers and members of the public. Many open textbooks are distributed in either print, e-book, or audio formats that may be downloaded or purchased at little or no cost.

Some popular open textbook repositories include BCCampus OpenEd (<https://open.bccampus.ca/>); OER Commons (<https://www.oercommons.org/>); MERLOTx (<https://www.merlotx.org/>); and OpenStax Textbooks (<https://openstax.org/>).

Open Research and Data

Open research and open data are the research material and data available online to anyone and can be freely downloaded and used. The two primary sources of open research and open data are from government and science. In some developed countries, governments are demanding that published research supported by government funding must be openly accessible and reusable (Coldewey, 2016). Similarly, for open data, Science Ministers from 34 countries in the OECD, which includes most developed

countries globally, have signed a declaration of commitment that all archive data that is publicly funded should be made available to the public. Archive data is the data that is moved to a separate storage for long-term retention (Bates, 2015).

There are also various large repositories capable of containing many different types of OER such as open textbooks, open research and open data: Merlot (<https://www.merlot.org/merlot/index.htm>); OASIS (<https://oasis.geneseo.edu/>); Curriki (<https://www.curriki.org/>); and OER Commons (<https://www.oercommons.org/>).

When they refer to open education, people are usually interested in OER and Massive Open Online Courses (MOOCs). Many make the mistake of using these terms interchangeably. Large scale open online courses available for anyone to enrol in (MOOCs) are currently offered by many universities and organisations. They include Coursera (<https://www.coursera.org/>); EdX (<https://www.edx.org/>); and FutureLearn (<https://www.futurelearn.com/>). However, there is much debate about the classification of MOOCs. Are they a type of OER? There are some key differences between OER and MOOCs. Firstly, the main feature of OER is their open licenses which allow the user to use and reuse resources, while most MOOCs release their content without an open license. The user cannot revise or remix a MOOC in any way: it is usually an entire fixed course. Therefore, in this research, MOOCs are not considered as OER.

2.2.2 OER components

Ideally, an open educational resource should be based on open licensing, be open access and published in open access formats using open-source software. In 2005, Margulies developed a conceptual map for OER for MIT OCW. The concept consists of three basic components: learning content, tools and implementation resources (OECD 2007, p.31).

Learning Content

Learning content can be courses, learning materials, learning objectives, collections, or journals. There are many ways of sharing the learning content in OER. One way is to deposit them in established OER repositories such as OER Commons

(<https://www.oercommons.org>), Open CourseWare Europe (<http://www.opencourseware.eu>), and MERLOT (<https://www.merlot.org>). Alternatively, users can utilise existing sharing, collaborating, and networking tools and social media like YouTube (<https://www.youtube.com/>), Udemy (<https://www.udemy.com/>), and Slideshare (<https://www.slideshare.net/>).

Tools and Software





The second component of OER is open-source tools and software to develop, use, reuse and distribute learning content, and to locate and organise content such as online learning platforms or learning management systems (Cheung et al., 2013). These tools and software are needed to support the creation, delivery, use and improvement of OER (John B. Cade Library, 2021).

Resources for Implementation

“Resources for implementation are the intellectual property licenses to promote open publishing of materials, design principles of best practice, and localisation of content” (OECD, 2007, p.2). In other words, as well as the intellectual property license that permits the free use or re-purposing by authors, it is necessary to have expert guidance to promote, develop and manage OER systematically. The open aspects of OER differentiate them from traditional educational resources. Stanford Law Professor Lawrence Lessig developed an extensive licensing system in 2001, called Creative Commons (CC). CC offers user-friendly open access licenses to digital material and thus avoids the restrictions of copyright being applied automatically. The popularity of CC licenses has grown exponentially since its initial launch in 2002. In 2015, CC-licensed works were viewed online 136 billion times, and more than 1 billion CC-licensed works were licensed in the Commons. In addition, there were millions of websites using CC licenses, such as 356 million photos from Flickr, 21.6 million files from Wikimedia Commons and 13 million videos from YouTube (Creative Commons, 2015). In 2017, there were around 1.4 billion Creative Commons licensed works (Creative Commons, 2017).

There are four basic conditions of CC license: Attribution (BY), Share-Alike (SA), Non-Commercial (NC), and No Derivative (ND). Table 1 presents the main CC license conditions from Creative Commons Australia.

Table 1: CC license conditions (Creative Commons Australia, n.d.)

 Attribution BY	<p>This applies to every Creative Commons work. Allows others to copy, distribute, display, and perform the copyrighted work and derivative works based on it - but only if they give credit in the way that the author asks.</p>
 Share-Alike SA	<p>Allows others to distribute derivative works only under the same license terms that govern the original work.</p>
 Non-Commercial NC	<p>Lets others copy, distribute, display and perform the copyrighted work and derivative works based on it but for non-commercial purposes only.</p>
 No Derivative ND	<p>Lets others copy, distribute, display and perform only verbatim copies of the work, without derivative works of it.</p>

Combining these conditions leads to six valid and regular used CC licenses (CC BY, CC BY-SA, CC BY-ND, CC BY-NC, CC BY-NC-SA, CC BY-NC-ND) plus CC0, a public domain equivalent license. Creators choose a set of conditions they want to apply to their work. The core condition that applies to all six of the CC licenses is the requirement that the author of the work is attributed – the Attribution condition (CC BY). It should be noted that a licence cannot feature both the Share Alike (SA) and No Derivative (ND) options. The Share Alike (SA) requirement applies only to derivative works. Figure 2 illustrates the CC licenses and rights of licensees and is adopted from Foter (2015).

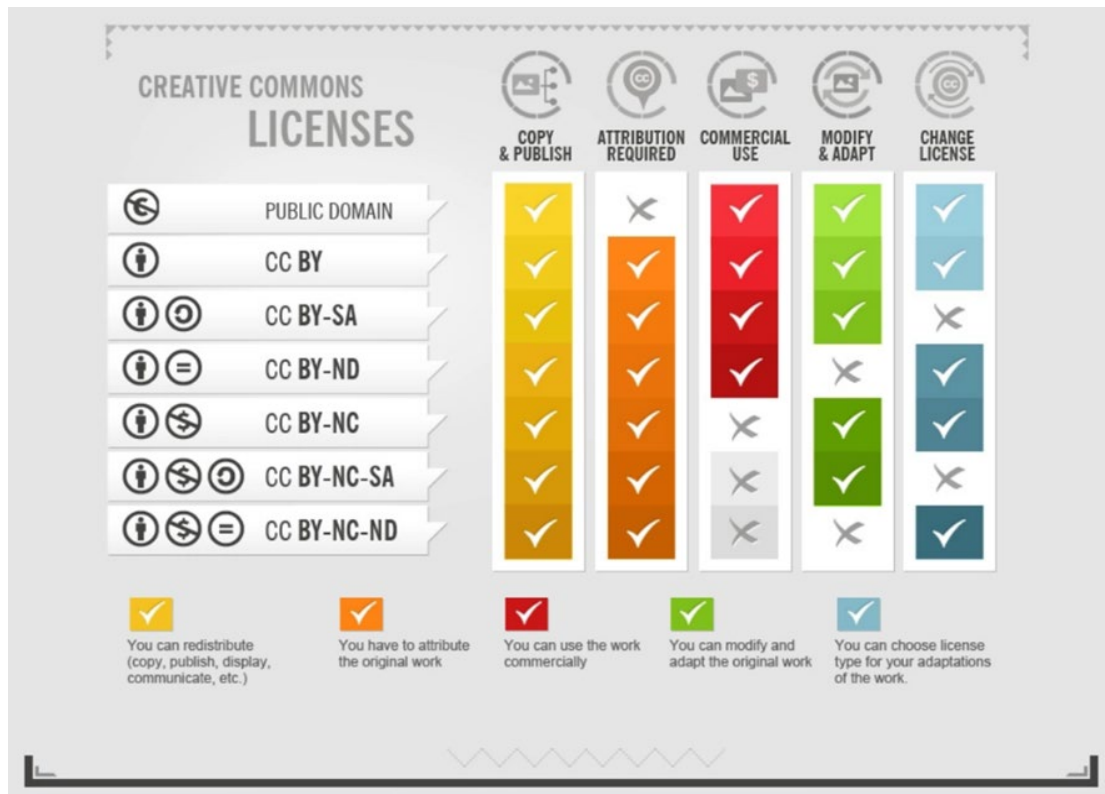


Figure 2: CC licenses and rights of licensees

Note. From *How to attribute Creative Commons photos* [Online image], by Foter, 2015, Foter (<https://foter.com/blog/how-to-attribute-creative-commons-photos/>). CC BY-SA 3.0

The desirability of an open educational resource is obviously dependent on the relevance of the OER to the needs of users. Openness and accessibility are also important factors for the selection of an open educational resource. The accessibility of an open educational resource depends on editability, competency to use, source files, and editing tools. In terms of openness, not every resource issued with a CC license is an open educational resource. As explained before, an open educational resource should allow everyone permission to freely engage in the 5R activities (retain, revise, remix, reuse, and redistribute). As a result, licenses with ND (No Derivative) conditions are not OER-compatible licenses as licensees cannot fully engage in the 5R activities. Hence, OER advocates usually do not consider ND-licensed resources OER. However, depending on the policy of the IOER project, ND-licensed resources can still be included in an IOER with clear indication of their license restrictions. Hilton et al. (2010, p.38) argued that

the “open” in open educational resources is not a simple binary concept; rather, the construct of openness is rich and multidimensional. To use an analogy, openness is not like a light switch that is either “on” or “off”. Rather it is like a dimmer switch, with varying degrees of openness.

Openness means different things to different people and in this research, the level of openness corresponds with the level of the rights reserved. Figure 3 illustrates the openness of an open educational resource aligned with the Creative Commons licenses.

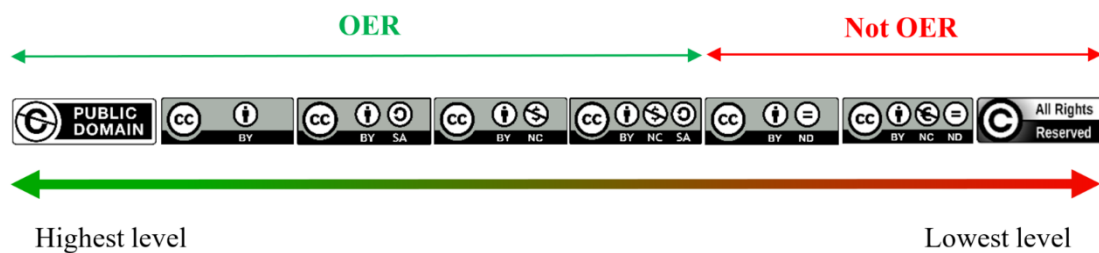


Figure 3: Openness level of OER

2.2.3 Potential benefits of OER

It is worth examining the advantages of OER to find out why many people are putting considerable effort into supporting and promoting the OER movement. This section provides an analysis of previous research that investigates the potential of OER. Since 2000, a large and growing body of literature has examined the envisaged and realised benefits of OER from different perspectives in various countries and contexts and at various educational levels (for example, Hodgkinson-Williams, 2010; Djohar et al., 2018; Henderson & Ostashevski, 2018; McGreal, 2019; Grimaldi et al., 2019). Previous studies point out that OERs can advantage stakeholders with direct and indirect benefits. Weller et al. (2015) suggested that the short-term, direct advantages of OER exert immediate benefits while the indirect ones are expected to provide longer-term impacts for stakeholders.

The most frequently recognised short-term benefit of OER in the literature is saving cost and time for students, educators and institutions (Fischer et al., 2015; Jhangiani et al., 2016; Djohar et al., 2018; McGreal, 2019). Many authors also note that the OER concept helps increase access to a more diverse range of educational resources (Mtebe

& Raisamo, 2014; Belikov & Bodily, 2016; Henderson & Ostashevski, 2018), and thus advances the quality of educational resources in general (D'Antoni, 2007; Judith & Bull, 2016). Many researchers recommend that putting OER into practice can significantly support self-learners and lifelong learners (for example, OECD, 2007; Kursun et al., 2014). Previous studies also indicate that OER adoption can encourage knowledge development by preserving a record of resources as the basis that allows others to develop them further (D'Antoni, 2007; Hodgkinson-Williams, 2010). As a result of OER practice, collaboration and social relationships between stakeholders may be improved (Veletsianos & Kimmons, 2012; Hegarty, 2015) and a knowledge sharing culture in an organisation or country can also be promoted (D'Antoni, 2009; Olufunke & Adegun, 2014). Thanks to their open aspects, OER are expected by proponents to bridge the gap between formal, informal and non-formal education (OECD, 2007; D'Antoni, 2007; Affouneh & Khlaif, 2020), expedite innovations in the teaching approach (Lesko, 2013; Affouneh & Khlaif, 2020), and facilitate the recruitment process within HEOs (Weller et al., 2015; Affouneh & Khlaif, 2020).

Exponents of OER expect these practices to provide beneficial long-term impacts for users, HEOs and society, such as increasing satisfaction and performance of users (Weller et al., 2015; Berti, 2018), and improving the skills, ability and creativity of OER users (Yuen & Wong, 2013; Daryono & Belawati, 2013). Further, a number of researchers (like D'Antoni, 2007; Hodgkinson-Williams, 2010) have proposed that putting OER into practice widely can also boost the reputation of authors and institutions, and OER creators will possibly leave a legacy after leaving academia (D'Antoni, 2007). For societies, OER use can facilitate positive educational changes (D'Antoni, 2007) and promote equality and social justice (Weller et al., 2015; Grimaldi et al., 2019).

Similarly for Vietnam, previous researchers (such as Do, 2019b; Ta, 2019a, 2019b; Trinh, 2019; Tran, 2019a) have recommended some potential benefits of OER to institutions, educators, and students in Vietnam. These benefits include providing an opportunity for learners and educators to access high-quality learning resources, thereby creating equality in access to knowledge; enhancing the quality of education and training of universities; encouraging pedagogical innovation; reducing the cost of

developing learning materials in universities and increasing the efficiency of how funding is used; and promoting self-learning and lifelong learning.

In short, exponents of OER around the world and in Vietnam suggest that harnessing OER will lead to numerous benefits for various stakeholders and society as a whole.

2.2.4 Worldwide major OER initiatives

The term “Open Educational Resources” was officially coined in 2002 at the UNESCO Forum on the Impact of Open Courseware for Higher Education in Developing Countries (Witherspoon, 2002). The first two World OER Congresses organised by UNESCO in 2012 and 2017 provided additional impetus to the OER movement. As a result of the second World OER Congress, the Ljubljana OER action plan (UNESCO, 2017) was developed, including numerous actions to embrace the OER movement so as to achieve the fourth SDG on Quality Education. In 2019, the UNESCO Recommendation on OER was released and adopted by all 193 member states (UNESCO, 2019). While the establishment of the OER movement is closely connected to UNESCO and so represents a top-down approach, the OER movement has subsequently been driven by grassroot initiatives, communities and individuals. National and supra-national authorities have started to consider OER a valuable strategy only recently (European Commission, 2013; Stracke, 2019). This section provides information on several major OER initiatives, primarily implemented in the United States (U.S.).

As explained earlier, OCW is a type of OER. The OCW movement began in 1999 when the University of Tübingen in Germany published videos of its lectures online (Jemni & Khribi, 2016). It expanded widely with the launch of MIT OCW in April 2002. In that year, MIT OCW began with a “proof-of-concept” website offering 50 courses and allowed Internet users from everywhere in the world to access them freely. By 2005, MIT OCW had published over 1,000 MIT courses. In May 2021, the website (<https://ocw.mit.edu/about/>) had over 2,500 subjects (courses) including lectures, course schedules, lists of references, homework, tests, and experiments that users can use for teaching, learning and researching (MIT OpenCourseWare, n.d.a). From the success of MIT in promoting OER development, a number of universities have started

their OCW projects. Among those, Rice University's Connexions, Carnegie Mellon University's Open Learning Initiative, and the Center for Open and Sustainable Learning at Utah State University are some major institutional initiatives (OECD, 2007).

In 2005, MIT OCW helped launch the OpenCourseWare Consortium (OCW Consortium), now called Open Education Global (<https://www.oeglobal.org/>). Incorporated as an independent non-profit organisation in 2008, the OCW Consortium is a community of over 300 higher education institutions and related organisations worldwide committed to advancing OCW sharing and its impact on the global educational opportunity. Collectively, OCW Consortium members have published materials from thousands of courses in more than 20 languages (MIT News, 2021).

Supported by the non-profit Open Education Resource Foundation and the Commonwealth of Learning (COL), WikiEducator (<http://wikieducator.org>) was launched in February 2006 in order to provide a venue for the incremental development of OER (WikiEducator, 2016).

The OER Commons project was launched in 2007 by a global non-profit education research institute based in Silicon Valley's Half Moon Bay, California - the Institute for the Study of Knowledge Management in Education (ISKME). ISKME encourages and convenes meetings of educators and instructors to support an ecosystem of learning fuelled by collaboration and sharing. OER Commons is a free teaching and learning network dedicated to innovation in open education content and practices to aggregate, share, and promote OER to different stakeholders. In 2008, ISKME established the OER Commons Teacher Training Initiative to further promote the sharing of these resources among educators (ISKME, n.d.).

Initially focussed on the tertiary level, the OER movement internationally next turned its attention to high school education. In October 2015, the U.S. Ministry of Education launched the #GoOpen campaign to encourage schools to make their educational resources "open". The Ministry proposed regulations requiring educational materials created with federal subsidies to be licensed openly so that any school can access them. It was estimated in 2015 that by the end of 2020, all textbooks for high schools in the U.S. would be openly licensed so that anyone in the world can download them to use

(U.S. Department of Education, 2015). Currently the movement has gained support from various stakeholders, like schools, organisations, companies, foundations and individuals, as well as achieved numerous accomplishments in many school districts and states across the country (Office of Educational Technology, n.d.; Ishmael et al., 2018).

There are numerous OER initiatives at different education levels, in various languages around the world. Currently, the COVID-19 pandemic is driving increased interest in open education and OER (Gumb, 2020); it is expected that the number of OER initiatives worldwide will keep growing significantly.

2.2.5 Key OER initiatives and activities in Vietnam

There has been increasing interest in OER internationally, and Vietnam was one of the early adopters. In Vietnam, OER activities are numerous, ranging from national OER programs and scientific seminars, to training courses. The most prominent OER activities and initiatives in Vietnam include:

(1) *Fulbright Economics Teaching Program (FETP) OCW*: Founded in 1994, the Fulbright School is a collaborative effort between the University of Economics in Ho Chi Minh City and the Harvard Kennedy School. By the end of 2002, inspired by the MIT OCW, Fulbright School had launched the FETP OCW program by publishing its teaching and research materials online. By the end of 2016, FETP had published over 22,000 learning materials for 21 courses in Vietnamese as well as English on their OCW website (Truong, 2019).

(2) *VOER Program*: During the United States visit of the Vietnamese Prime Minister, Mr Phan Van Khai, in 2005, the delegation was introduced to MIT's OCW and was provided with a copy of the entire open courseware material from MIT to take back to Vietnam. Subsequently the Vietnam OpenCourseWare Program (VOCW) was established, coordinated by MOET, the Vietnam Education Foundation (VEF) and the VASC Software and Media Company. On 12 December 2007, the official website of the program (www.vocw.edu.vn) was launched. Three data centres of the VOCW program located in Hanoi, Da Nang and Ho Chi Minh City, with servers sponsored by

VEF placed in 20 member universities and institutions, were officially put into operation. In 2006, managers decided to adopt the Rice Connexions platform for their OER development activities in Vietnam. The Connexions software with a simple and effective publishing model helped implement a wide range of OCW/OER activities at Vietnamese universities in the 2006-2010 period. In 2008, VOCW changed its name to VOER (Vietnam Open Educational Resources Program). In 2010, VEF transferred their role to MOET, but MOET had no personnel to take over and maintain the regular operations of the program, which led to the unfortunate interruption of the Vietnam OCW program's achievements. The Vietnam Foundation, in collaboration with MOET, then took the lead in coordinating and promoting the development of OER in Vietnam (Do, 2019a).

(3) In 2012, MOET led the development of *OER guidebooks for Vietnamese universities*. However, this document has not yet been officially published (Do et al., 2019).

(4) *The OER @ University Roadshow Program* began in 2016, run by the National Centre for Research and Development of Open Technologies (RDOT) - Ministry of Science and Technology; VNU-USSH Hanoi; Vietnamese Northern Academic Library Association (NALA); and the Vietnamese Library Association of Southern Academic Libraries (VILASAL). The Roadshow Program organised training for librarians and lecturers of universities across the country to use and create OER (Do et al., 2019).

(5) *Scientific Seminars on OER*. The Faculty of Library- Information of VNU-USSH in Hanoi, in collaboration with other partners such as the Association of Vietnam Universities and Colleges (AVU&C), the Vietnam Free and Open Source Software Association (VFOSSA), the Vietnam Library Association, the Vietnam Association for Information Processing, the Vietnam Club of Faculties-Institutes-Schools-Universities of ICT, RDOT and NALA, and UNESCO, have organised many international and national conferences on OER (Do et al., 2019). The most recent seminar was held at Thang Long University, Hanoi in October 2019. Attendees of these seminars have included many stakeholders such as leaders of various organisations, associations and universities, representatives of technology companies, and numerous scientists, researchers, experts and lecturers. They have usually focused on highlighting the

potential of OER as well as reporting OER awareness and the OER practices of students or staff in their institutions. Many of these seminars have also recommended technological and infrastructure solutions for implementing open standards. Several IOER leaders have presented challenges expected or experienced and have suggested solutions. The roles of library and library staff have also been highlighted by seminar participants as significant in the OER movement (Do, 2016a; Truong, 2019; Nguyen, 2019b; Le, 2019b).

(6) *The Open Education Development Advisory Board*, affiliated to the AVU&C, was established in 2018 to promote OER initiatives and conduct workshops and training related to harnessing and developing OER for stakeholders, especially educators, IT staff and librarians nationwide (Le, 2019a; Le, 2020).

(7) *Workshop on 'The role of universities in developing OER to meet the lifelong learning requirements of adults'* was held by the MOET, Vietnam Association for Promoting Education and Ton Duc Thang University in August 2019 (Ministry of Education and Training, 2019a).

(8) *The Open Education Club* was introduced officially in May 2020 at the Hanoi Open University to contribute to the effective implementation of open education and distance learning in Vietnam. This club is also under the auspices of AVU&C (Association of Vietnam Universities and Colleges, 2020).

(9) *Official dispatch No. 4301/BGDĐT-GD&ĐT* regarding the creation and development of OER was issued by MOET in September 2020 (Ministry of Education and Training, 2019b).

This subsection presents some notable OER activities and initiatives in Vietnam to date. It appears that the community and the government are currently paying more attention to the OER movement in this country compared with the time when this research project was initiated in late 2017. Universities and their libraries are very active in participating in OER programs offered by the government; however, they are still hesitant to develop their own IOERs. This study contends that IOER development in Vietnam is complicated and constrained by many contextual difficulties.

2.3 Challenges for the OER Movement

Despite the anticipated benefits, embracing the OER movement is not straightforward for many countries due to various challenges. A review and analysis of a number of relevant papers identified a variety of challenges that different nations and organisations faced when putting OER into practice. Six main categories of challenges were identified from the analysis of these papers: technological and infrastructure limitations; economic constraints; socio-cultural characteristics; political issues; pedagogical concerns; and legal challenges.

Technological and infrastructure limitations

Numerous studies have found that computing and communication infrastructure restraints such as lack of access to ICT, bandwidth and connectivity are among the most prominent problems in the less-developed or developing economies (Mtebe & Raisamo, 2014; Mosharraf & Taghiyareh, 2016; McGreal, 2017; Thumbumrung & Aroonpiboon, 2018). For example, in their research about emergent issues around OER adoption in Kenya, Uganda and South Africa in 2012, Ngimwa and Wilson (2012) stated that technological problems such as limited and costly Internet bandwidth and power supply interruption were barriers to successful participation in OER development in these African nations. In agreement with Ngimwa and Wilson, a study on the challenges to adopt and use OER in higher education in a neighbouring country, Tanzania, has revealed that unreliable Internet services and low bandwidth are hindering the adoption and use of OER in teaching (Mtebe & Raisamo, 2014). Another West African country, Nigeria, also experienced similar technological issues in adopting and developing OER. Ipaye and Ipaye (2013) indicated that the cost to possess computers in Nigeria is still relatively high, not to mention broadband issues, the non-availability of Internet connectivity and electricity shortages which are holding Nigeria back from economic growth and using OER. Thailand, a developing country located in Southeast Asia, is also facing a lack of ICT access, bandwidth and connectivity, which has impeded OER production and distribution (Thumbumrung & Aroonpiboon, 2018).

Economic constraints

It has been demonstrated by many scholars (such as Hylén, 2006; Atkins et al., 2007; Dutta, 2016) that successful production and harnessing of OER is affected by economic factors. In terms of developing national or institutional OER repositories, there is a need for an initial investment for ICT facilities and infrastructure, services, and initial production costs for human resources salary and rewards, policies development, training programs, workshops and marketing campaigns. Sustaining an OER project may need a large and ongoing investment as quality OER repositories also need maintenance, curation and preservation, updating, and subsequent hosting costs (Mosharraf & Taghiyareh, 2016; Thumbumrung & Aroonpiboon, 2018). As Embi (2013) stated regarding financial issues, OER developers or managers need continual financial support, and the difficulty here is that they need money to create a free product. Hence, new business models and funding sources secured are necessary; otherwise, the economic constraints will be potential deterrents to the OER project.

Socio-cultural characteristics

Some socio-cultural characteristics have also been recognised as an influential factor on the open movement around the world. Previous research reported that linguistic diversity, cultural sensitivities and diversity in a country, as well as the characteristics of higher education stakeholders such as their awareness, willingness and capacity, may be either advantageous or disadvantageous to the adoption of OER in higher education (Witherspoon, 2002; Hylén, 2006; Deshmukh & Agarkar, 2010; Browne et al., 2010; Chen, 2010; Olcott Jr, 2012; Ashadevi & MuthamilSelvi, 2017).

A country that has varied traditions and linguistic diversity may not find it easy to adopt and develop OER. For example, with more than twenty official languages spoken in India, not to mention thousands of unofficial languages, dialects and vernacular language, producers in this country have found difficulties localising and producing OER to suit every community. The linguistic diversity, illiteracy and contextual gap thus become barriers for OER users (Deshmukh & Agarkar, 2010).

The characteristics of higher education communities also appear to be a factor profoundly affecting OER adoption and development at HEOs worldwide. Among the

social challenges, awareness and understanding of OER were identified by various authors as the first challenges to address, regardless of the development status of the countries investigated (Witherspoon, 2002; Hylén, 2006; Torres, 2013; Browne et al., 2010). Indeed, if people are unaware of the availability of OER, they will possibly limit their opportunities to benefit from the advantages of OER. Previous studies have reported that higher education stakeholders in many countries may not yet be very well aware of OER and their potential (Ngimwa & Wilson, 2012; Olcott Jr, 2012; Mtebe & Raisamo, 2014; Wang & Towey, 2017). For example, in their case study of Nigeria, Ipaye and Ipaye (2013) concluded that lack of awareness of OER and OER concepts by Nigerian academics is a significant challenge for embracing the OER movement. However, the indifference and unwillingness of other stakeholders in this country to engage in the OER movement despite acknowledging its benefits to education is another critical issue.

Another determinant of the success of OER adoption and development in an HEO is the capacity of stakeholders. Insufficient expertise and limitations of technological skills, together with low English proficiency from teachers, students and learners, are recognised as hindering the OER movement (Ipaye & Ipaye, 2013; Chen & Panda, 2013; Mosharraf & Taghiyareh, 2016; McGreal, 2017). Moreover, limited basic computer skills and technological literacy are identified as the main barriers to people's readiness to participate in OER use and development in many developing nations (Deshmukh & Agarkar, 2010; Ngimwa & Wilson, 2012; Ipaye & Ipaye, 2013). McGreal (2017) points out that the increasing volume of OER that are becoming available is either an opportunity or an obstacle to users. Indeed, people who have good research and OER skills may feel excited to have many results from their search, while those with no or lower digital and information literacy may feel overloaded in finding relevant and quality OER (Chen & Panda, 2013). There is an emergent term called "OER literacy" in the cited research (such as International Association of Universities, n.d.; Robertson, 2010b; Meunier, 2019), which is defined as the competencies and skills that allow an individual to produce, identify, repurpose, localise, license and distribute OER. The absence of OER literacy from communities is also considered problematic in responding to the OER movement (Ipaye & Ipaye, 2013). However, few empirical

studies have so far been conducted to investigate or identify the knowledge and skills needed for engaging with OER (Šadauskas et al., 2018).

As the majority of OER content is presently issued in English, non-native English speaking countries will have less opportunity to engage with the OER movement. English proficiency is thus becoming a variable affecting the OER movement in a country or organisation (Mosharraf & Taghiyareh, 2016; McGreal, 2017; Wang & Towey, 2017). Another challenge that many countries are facing is limited knowledge and awareness of copyright, intellectual property (IP) rights, open licensing and fair use of educational resources by OER stakeholders. In many countries, teachers and students are unable to differentiate between open-access resources, digitised materials, public-owned material or OER. They also have a limited perception of how they can use them. This leads to crucial problems not only for OER development, but also for scholarly practice in general (Hylén, 2006; Chen, 2010; Chen & Panda, 2013; Ashadevi & MuthamilSelvi, 2017).

Pedagogical concerns

In addition to the issues specified above, pedagogical concerns such as institutional culture and practices in a nation appear to be another major hindrance to the OER movement. Recent studies have shown that national and institutional teaching and learning culture and practices directly influence stakeholders' incentives to OER adoption and development (Chen, 2010; Hu et al., 2015; Wang & Towey, 2017; King et al., 2018).

Students in a teacher-centred education system do not have opportunities to develop the highest levels of curiosity, creativity, interactivity and proactivity in learning; and they are more likely to become passive in learning as well as in finding their learning materials (Tran, 2013; Ganapathi, 2018). Following the cultural norms and traditions associated with teaching and learning, the mindsets of instructors can lead to unwillingness in sharing their knowledge and giving away intellectual property, using resources produced by someone else, dealing with outside contacts or losing income from their intellectual property (Ngimwa & Wilson, 2012; Thumbumrung & Aroonpiboon, 2018).

Political issues

Political factors seem to have an influence on pedagogical practices, as demonstrated in the literature. Instructors have little incentive and time to produce shareable materials; many of them prioritise research rather than creating or innovating teaching materials (Pena, 2009; Hodgkinson-Williams, 2010). This originates from low awareness of OER and their advantages on the part of senior administration of a country or organisation as reflected in the absence of appropriate national and institutional policies and support for the OER movement such as funding, training, reward systems, and effective marketing strategies (D'Antoni, 2009; Torres, 2013; Hu et al., 2015; Ganapathi, 2018; Thumbumrung & Aroonpiboon, 2018).

Legal challenges

Plentiful evidence indicates that legal issues such as the incompatibility between national IP rights regulations and OER's open licenses, the governance of open licenses or dealing with third party copyright issues are troublesome areas for OER adoption and creation in a country or organisation (Hylén, 2006; OECD, 2007; Yuan et al., 2008; Pena, 2009; Ncube, 2011; Dutta, 2016). As national laws and regulations contribute to the behaviour and response of an individual to a particular activity, a lack of open license recognition in copyright and IP laws will lead to hesitation and unwillingness to participate in the OER movement. Hodgkinson-Williams and Arinto (2017) explain that the lack of legal permission for educators to share material they have created as OER impedes OER adoption, creation and distribution. Countries differ in their attitudes towards the OER movement and the provisions they make for it in their copyright and IP laws. While other governments are still hesitating in engaging with OER, the Mongolian government updated their Copyright Law of 2006 so it is now very OER-friendly and encourages instructors to share their teaching materials as OER (Hodgkinson-Williams & Arinto, 2017; Research on Open Educational Resources for Development, 2017).

Similarly, in Vietnam, many scholars (for example, Nguyen, 2019; Ngo, 2019; Nguyen & Tran, 2019; Tran, 2019b; Le, 2019c; Dinh, 2019) have also pointed out a variety of barriers hindering the OER movement in this country. Among the challenges identified, the absence of institutional and national policies for harnessing OER and problems

related to copyright and IP rights in Vietnam are most frequently suggested. Do (2016b) conducted a simple survey to identify the factors affecting the development of OER at universities in Vietnam. In his report, a range of factors were proposed, such as the community's understanding about OER, OER policy from the government, the roles of university leaders, economic issues, technology and technological standards. However, no information regarding the research method, data collection and analysis was provided in his report.

In summary, the literature identifies six main categories of challenges that countries face when adopting and producing OER, namely: technological and infrastructure limitations, economic constraints, socio-cultural characteristics, pedagogical concerns, political issues and legal issues.

2.4 Roles of University Libraries in the OER Movement

There is considerable research evidence suggesting that university libraries are useful for helping navigate the OER world and addressing the challenges of OER initiatives. In this research, a university library is defined as including infrastructure and human resources and having a responsibility to and a relationship with university staff and library users. As discussed earlier, OER need to be managed and it would appear that this is best done through the establishment of IOERs. With the fundamental role of providing a flexible space with a broad and inclusive range of resources to support learning and teaching throughout an institution, libraries would appear to be in the best position to develop, support and manage IOERs. There is a large volume of published studies (Robertson, 2010a; Bueno-de-la-Fuente et al., 2012; Bossu et al., 2012; Upadhyay & Upadhyay, 2015; Arimoto et al., 2016; Colson et al., 2017) describing the prominent roles, resources, and infrastructure that would appear to make libraries an ideal place to develop and manage IOERs. Other library conditions and librarians' skills are also suggested to be extremely helpful in supporting the OER movement.

Walz (2015, p.27) stated that “existing library values, relationships, capacities, and infrastructure are complementary to OER support”. They added that the library facilitates the work of the teacher and ensures each student has equitable access to

quality educational resources. Having a similar view, Mitchell and Chu (2014) pointed out that libraries and librarians' long-term philosophical support for "access" to information, their existing relationships with both faculty and students, and their outreach and instructional support experience make them a natural partner in OER initiatives.

Library assets and services that could potentially benefit OER initiatives include: search and discovery capabilities, copyright expertise, data storage, metadata and indexing, institutional repositories and preservation (Kleymeer et al., 2010). Indeed, library staff have skills, expertise and experience in managing and distributing information resources. Back in 2010, Robertson, in a role supporting and providing guidance to the United Kingdom OER programme, conducted a survey investigating library involvement in promoting, supporting, and sustaining IOERs. In his report, Robertson (2010b) stated that it is necessary to take into account the different challenges offered by educational resources and the active role librarians can play in the initial description, management, and distribution of OER. Similarly, the Association of College & Research Libraries - ACRL (2009) submitted in the institutional context that OER should become additional resources referenced by subject librarians to benefit students and lecturers. Further, librarians can be OER creators. Belliston (2009, p.287) has proposed that

librarians can help by contributing their own OER to the commons; screening for, indexing, and archiving quality OER; using OER in their own teaching; and participating in discussions leading toward responsible intellectual property policies and useful standards.

In Vietnam, university libraries have significant involvement in the OER movement as well as IOERs development (Truong & To, 2019; Nguyen, 2019a; Vu et al., 2019). Do (2016b) stated that IOERs should be developed by university libraries. With the primary function of providing materials for teaching, learning, and research, the library is best positioned to be the place where the OER will be collected, arranged, archived, promoted, distributed, and shared. Do's survey of libraries in Vietnam identified that 82 per cent of library leaders agreed that their library would be willing to participate in

the development of OER and OER repositories when called upon. Despite the interest and potential, to date, few IOERs have been developed in Vietnam.

In short, there is a large volume of published studies focusing on clarifying the roles and involvement of the library and librarians in developing IOERs. It is clear that libraries and their staff can contribute significantly to supporting the institutions, educators, staff, and students to use, reuse and produce OER.

2.5 Gaps in the Current Literature

OER and their related issues have been frequently discussed and documented widely in recent decades. In Vietnam, despite a significant amount of activity with respect to OER; however, as can be seen from the literature to date, the movement and the development of IOERs in this country are facing considerable challenges potentially caused by various factors. OER advocates believe that university libraries are the organisational units best placed to develop IOERs within HEOs. Reviewing and analysing the literature has helped to identify several research gaps.

(1) A considerable number of empirical studies have been published in the last two decades on challenges of the OER movement in different contexts where the main phenomenon investigated is usually the adoption and usage of OER from the user perspective (educator or student). In these studies, the term “adoption” implies the acceptance, decision to take up, support, or use, and it is a psychological process that leads to the decision of adoption or non-adoption. Several other conceptual studies have also identified a range of barriers to the OER movement in a country generally. In Vietnam and internationally, there is a scarcity of empirical research relating to the development of IOERs from the viewpoint of higher education providers. Hence, far too little is known about the process of developing IOERs in HEOs, stakeholders involved in the process, and the factors affecting this development process. In this study, “development” refers to a comprehensive development process comprising many activities such as planning, initiating, implementing, managing, sustaining, and promoting the IOERs from the higher education providers’ viewpoints. The phenomena investigated in this research are not only the behaviour or action of a group of

participants but also the collaborative work of stakeholders that involves many phases, steps and activities resulting in the formulation of the IOER. During the development process, stakeholders have clear roles and functions.

(2) Many researchers in Vietnam and other countries have identified the potential of OER to teaching, learning and research; however, they have ignored the context-specific issues that possibly hinder stakeholders from perceiving these advantages.

(3) As noted earlier, many investigations have reported that the limited capacity and skill of lecturers, students and learners are constraining them in harnessing and producing OER. However, until recently, very little empirical study has been conducted to investigate what knowledge and skills are needed for engaging with OER.

(4) Despite a large volume of published studies in Vietnam and other nations agreeing that university libraries play essential roles in the OER movement, not many focus on analysing in detail how libraries can contribute to the IOER development process.

(5) There is no general framework to help illustrate and facilitate the development of IOERs. Such a framework could be used by individuals and organisations in implementing IOER development projects.

This research seeks to address these issues by ascertaining how HEOs are approaching their IOERs development and investigating factors affecting the development from the viewpoint of higher education providers in Vietnam. Taking account of the significance, importance and urgency of this research presented in Chapter 1 - Introduction, together with the research gaps pointed out in this chapter; this research was designed to solve the identified problems by answering three main research questions and four associated sub-questions.

Research Question 1: How can the implementation of IOERs best be managed within HEOs?

SQ1-1: What are the participants' perceived benefits of OER?

SQ1-2: What are the skills and knowledge needed for engaging with OER?

SQ1-3: Who are the campus stakeholders involved in IOER development in Vietnam?

SQ1-4: How are HEOs in Vietnam approaching the development of IOERs?

Research Question 2: What are the factors affecting the development of IOERs in Vietnam?

Research Question 3: How can Fullan's theory of educational change be adapted to better represent the educational change in this context?

2.6 Chapter Summary

In this chapter, OER and the concept of OER, and a summary of the OER movement internationally and in Vietnam are provided. This chapter also presents the findings of the literature review and analysis regarding the benefits of OER, the challenges of the OER movement, and the roles of university libraries in the movement, particularly in relation to the development and management of IOERs. As a result of the review and analysis, five major research gaps and three key research questions were identified. The next chapter, Chapter 3 – Theory and Initial Theoretical Framework, examines Fullan's Educational Change theory (2007) and explains the adaption of this theory for building an initial theoretical framework to examine, understand, explain and validate the research findings.

CHAPTER 3 – THEORY AND INITIAL THEORETICAL FRAMEWORK

... [T]heory is what helps us see the forest instead of just a single tree.

William Lawrence Neuman (2013, p.86)

3.1 Introduction

In the field of Information Systems, Weber (2012, p.3) has argued, “theories provide a representation of someone’s perceptions of how a subset of real-world phenomena should be described”. Indeed, theories are constructed to explain, predict, and understand the investigated phenomena and help to sharpen researchers’ thinking about what they are exploring. As mentioned in Chapter 2 - Literature Review and Analysis, empirical research into OER typically pays attention to examining the acceptance and usability of OER from the user perspective. Theories and models adopted in these studies regularly inform the investigation of how users come to accept and use a technology that may be new to them. Some of the frequently used theories and models in previous studies include the Technology Acceptance Model (Davis, 1989) and the Unified Theory of Acceptance and Use of Technology (Venkatesh et al., 2003). However, the phenomenon investigated in this study, the change to the educational system brought by the development of IOERs, is distinctive and more extensive and complicated, thus requiring a different theory to be employed.

This research aims to investigate the development of IOERs as an instance of educational change in Vietnam, and focuses especially on ascertaining how HEOs are approaching their IOERs development and stakeholders involved, along with identifying the factors affecting this process. Over time, many theories about educational change have been developed by numerous scholars and theorists worldwide, such as Lewin (1951), Senge (1990), Fullan (2007), and Hargreaves and Shirley (2009). Different theories focus on examining various philosophies and aspects of the change. However, not every theory discusses the change process, stakeholders

involved, and the factors affecting the change. In the case of the change under investigation in this study, Fullan's approach is most suitable as it enables the researcher to examine the change process and the factors affecting each of the phases during that change process. To this end, the two components of the Educational Change theory proposed by Canadian scholar Michael Fullan (2007) were adopted. The first component of the theory relates to the educational change process and the second component concerns the factors affecting the change. To support the data analysis regarding the factors affecting the change, an initial theoretical framework was developed, based on the second component. Both the theory and the theoretical framework were very helpful for understanding, sorting and validating the research findings.

In this chapter an overview of the theory, its components and an explanation of the rationale for employing it are first examined. A number of studies that have adopted Fullan's theory are then briefly reviewed. The adaptation of the theory to build the theoretical framework for this research is then presented.

3.2 Fullan's Educational Change Theory

Fullan is widely acknowledged for his writings on educational leadership, reform and change from various perspectives, from national governments to community members and students. Noguera (2006, p.1) commented: "The clearest evidence of the value of Fullan's work lies in the fact that his ideas have transcended national boundaries and been embraced in Canada, the US, England and a number of other nations". With a fifth edition published in 2016, the *New Meaning of Educational Change* is one of the most well-known works in the field, defining the nature of educational change, explaining its process, noting factors affecting each stage of the process, and examining stakeholders' roles in the change process. The model for school change or educational change theory outlined in this book has been used widely in different research situations and contexts since it was first published in 1991. The theory explained in the book was developed and mainly adopted by studies that investigate educational change at the school level.

Fullan proposed that educational change is a complex process that involves many issues, such as culture, politics, economics and legislation, with the aim of school or institution improvement (Fullan, 1991). He also argued that educational change is a systematic transformation in education that must begin with a moral purpose where student learning is put at the start. In agreement with Fullan, Stoll (2006) and Burner (2018) stated that the ultimate goal for improving the school is the improvement of the education of students, which includes the advancement of student learning, learning conditions and learning process.

Fullan (2007, p.84) stated that “educational change is technically simple and socially complex”, and the change does not involve just a single entity (such as, in this study, an IOER). From the same perspective, Ahtiainen (2017) noted that educational change is a social phenomenon, and it is also a complicated and dynamic process that does not proceed in a predictable linear manner. Changes to the structure and culture of the system, as well as changes in the mentality of stakeholders, are needed. Fullan (2007, p.85) specified three essential dimensions of educational change, namely new or revised materials and resources used for instruction (materials), new instructional approaches or learning practices (behaviours) and new pedagogical values, beliefs and assumptions of those involved (beliefs). The real change happens when all of these three dimensions are achieved. The development of IOERs is considered as an educational change within the Vietnamese HEO environment. Educational change in this research setting appears to involve Fullan’s three dimensions, from the most visible component such as new materials, to the most challenging component such as new values and beliefs. The structure of Fullan’s theory comprises two main components: (1) the change process; and (2) the factors affecting each phase of the change process. Both of the components are adopted in this investigation.

3.2.1 The change process

Fullan (2007) proposed a simplified overview of the change process over time including Initiation, Implementation and Institutionalisation, as depicted in Figure 4. He maintained that the educational change process in practice could be more complicated. The final goal of a change is the last phase, institutionalisation; however, it only occurs

if the change has been successfully initiated and implemented. Given the objectives and scope of this study, only phase I (Initiation) and phase II (Implementation) of the change process will be examined to identify the factors affecting the development of IOERs. Phase III (Institutionalisation) will not be studied because to date very few IOERs have been implemented in Vietnam.

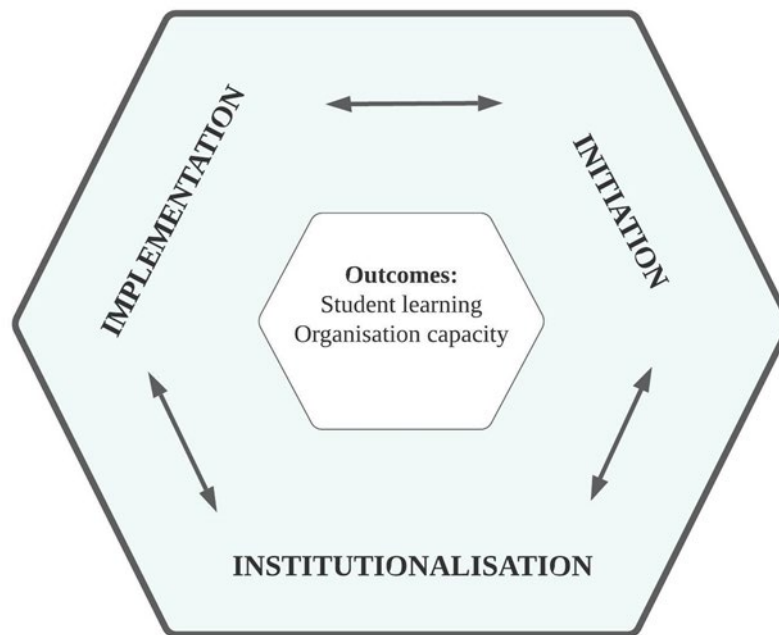


Figure 4: Three phases of the change process (adapted from Fullan, 2007)

Phase I: Initiation, also known as mobilisation or adoption, relates to the decision of adopting or proceeding with a change and of establishing commitment towards the change process (Fullan, 2007). In this research, some primary steps involved in this phase can be reviewing the current state of the university concerning the development of IOER, appointing the development project's stakeholders, followed by the decision to start the IOER development project.

Phase II: The implementation phase entails bringing new ideas, programs, and sets of activities or structures into practice (Fullan, 2007, p.84). This is the second phase of the change process, which involves many activities and raises many issues, so consequently it receives the most attention from stakeholders. In this phase, the roles and functions of stakeholders have to be clearly visible and policy is an influential driver for the

change process. For the change being examined in this study, this stage begins when stakeholders start implementing the IOER development project.

Phase III: Once the major issues in the implementation phase are resolved, the change is no longer considered something new to the organisation and it becomes part of the system. This phase is called institutionalisation, continuation, incorporation, or routinisation (Fullan, 2007, p.65). For example, in the case of the change under investigation in this study, the institutionalisation phase starts when the IOER development project is implemented successfully and OER become a regular source of information to users.

As presented in Figure 4, the two-way arrows imply that the change process is not linear. Fullan (2007, p.67) stated that “events at one phase can feed back to alter decisions made at previous stages, which then proceed to work their way through in a continuous interactive way”. For example, a decision made at the initiation phase regarding the size and complexity of the IOER development project may be substantially modified when the project is implemented.

3.2.2 Factors affecting the change process

The change process, however, is much more challenging than is depicted in Figure 4 and there are numerous interacting factors that may facilitate or inhibit each phase of the process. This subsection outlines the factors affecting Phase I (Initiation) and Phase II (Implementation) of the process proposed by Fullan (2007).

Factors affecting Phase I (Initiation)

According to Fullan (2007), the Initiation Phase involves the process leading up to and including the decision to implement the change either by a single authority or with a broad-based mandate. He proposes eight critical factors affecting the Initiation Phase, namely (1) Existence and quality of innovations; (2) Access to innovation; (3) Advocacy from central administration; (4) Teacher advocacy; (5) External change agents; (6) Community pressure/support/apathy; (7) New policy-funds; and (8) Problem-solving and bureaucratic orientations. However, he states that the variables outlined are probably not exhaustive as they were identified from the literature (Fullan,

2007, p.69). Figure 5 presents the factors associated with Phase I (Initiation) of the change process.



Figure 5: Factors associated with Initiation Phase (adapted from Fullan, 2007)

Factors affecting Phase II (Implementation)

The implementation phase involves how new ideas or programs are initiated and put into practice. Fullan (2007, p.84) notes that the processes in this phase are likely to be complex since many people are involved. Indeed, the characteristics and complexity of the social environment where the change is implemented can lead to either expected or unexpected results. Fullan (2007, p.85) proposes an implementation question for project leaders and implementers to consider: “What types of things would have to change if an innovation or reform were to become fully implemented?”

For the implementation phase, Fullan (2007, p.87) grouped nine major factors into three categories relating to the characteristics of change, local factors, and external factors. Regarding the first group, the characteristics of the change project, four factors noted by Fullan (2007) are need, clarity, complexity and quality of the change. Fullan (2007) proposed that local factors, the second group, comprised school district, board and community characteristics, principals and teaching staff. The third set of factors affecting the implementation phase, external factors, is government and other agencies

(Fullan, 2007). Figure 6 presents the factors associated with Phase II of the change process. As stated before, in this research, phase III (Institutionalisation) will not be studied.

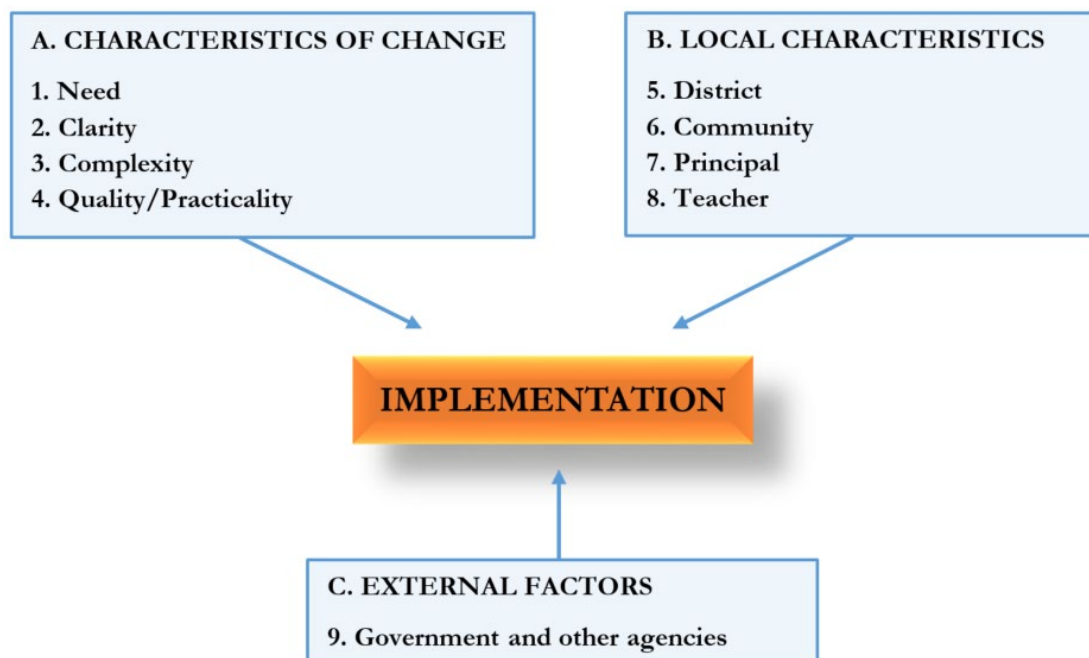


Figure 6: Factors affecting Implementation Phase (adapted from Fullan, 2007)

3.3 Adapted Theoretical Framework

The phenomenon investigated in this study is the development of IOERs as a form of educational change in the Vietnamese HEO environment, with the purpose of improving teaching and learning outcomes. OER have been inspired by the open education movement, which aims to reform the way people produce, share, and build on knowledge by using online technology. The reform, in this case, is motivated by a desire to move from a closed to a more open philosophy in education which enables people around the world to access knowledge, connect and collaborate, and therefore to create new knowledge. While Fullan’s theory and his book have been applied and heavily cited for years, to date very little adoption of this theory has occurred in studies in the higher education context. Although Fullan’s original approach to educational change focuses on schools, this study explores if the theory and concepts are also relevant and applicable to the development of IOERs at the higher education level.

3.3.1 Adoption and adaptation of Fullan's theory

Examples of the adoption of Fullan's theory in the literature are varied. While some studies (for example, Ozembloski, 1993; De Boer & Collis, 2001) use the theory as a theoretical lens to understand all phases of the change process, other research has been designed to study only one or two phases of the change process (Mays et al., 1997; Polyzoi & Černá, 2001; Orhun, 2004; Shilling, 2013; Dolan, 2016; Bahçekapili, 2018; Crary, 2019). The educational change theory has also been adopted in many studies to examine the factors affecting the educational change process (for example, Lieber et al., 2000; Do, 2015; Phillips et al., 2017).

During the past 30 years, researchers have adopted Fullan's theory in their studies to understand educational change in different countries such as Canada (Ozembloski, 1993), Ireland (Dolan, 2016), the Czech Republic (Mays et al., 1997; Polyzoi & Černá, 2001), the United States (Lieber et al., 2000; Shilling, 2013), Turkey (Orhun, 2004; Bahçekapili, 2018) and Vietnam (Do, 2015). Many have recommended modifications to the educational change model. For example, in their research about the process of change in education, Ozembloski (1993) added more sub-phases in each phase of the change process and introduced a modified model. Polyzoi & Černá (2001) proposed a revised model of the implementation phase to better understand the events in the Czech Republic context. Also in the Czech Republic, researching the factors influencing the change process, Mays et al. (1997) recommended revisions to Fullan's model by adding two more factors (Window of Opportunity and Predisposition to Change) that account more fully for the initiation of change in cases of rapid socio-political upheaval. Research by Do in 2015, which investigated the contextual factors affecting the development of digital library education at universities in Vietnam, is among the few studies found in the literature that adopted Fullan's theory to investigate educational change at the higher education level. In his research, Do (2015) employed Fullan's Educational Change theory (2007), Nowlen's Performance Model (1988) for continuing education for practitioners, and Rogers's Diffusion of Innovations theory (1995) to generate an initial conceptual model of factors to guide the data gathering and analysis. This initial model was also revised at the end of the study.

Fullan's theory has been employed by numerous researchers and variations of the model have been proposed in past years; however, no modified model was suitable to be adopted in this study. As the change investigated in this research is different, occurring in a completely different research context and setting, the original version of the theory is adapted to develop an initial theoretical framework to better fit this research setting. The development of the theoretical framework is presented in the next subsection.

3.3.2 Development of initial theoretical framework

Although Fullan's model has been employed widely, few researchers use both components of Fullan's theory (the change process and factors affecting the change process) in the same study. This research is among the few studies that employs both components. As stated before, only Phase I (Initiation) and Phase II (Implementation) of the change process will be adopted. Fullan (2007) recommended seventeen factors affecting Phase I and II. These factors are also called variables, determinants or influences in this research. This study first adapted several original factors to suit this research setting, and then all of the factors were further analysed and grouped into categories of factors for a clearer presentation in the theoretical framework.

Factors influencing Phase I (Initiation): According to Fullan (2007), eight critical factors affect this phase. In this study, many factors were re-interpreted and renamed to suit the research context. The factors are explained as follows.

Existence and quality of educational innovations: The first factor that may influence the Initiation Phase is the existence and quality of educational innovations available "out there". The change leader and implementer will need to consider which innovation is suitable and feasible for implementing. Fullan (2007, p.72) commented that the design and quality of innovations has been enhanced significantly in the last few years. In this research, open education and OER are among recent trends in education which have increased student learning by removing barriers of affordability and accessibility.

Access to innovation: Fullan (2007, p.72) states that the initiation phase is affected by access to information about the change by various stakeholders such as schools, parents

and communities. He indicates that access to information about innovations is also dependent on an infrastructure of communication such as ease of transportation or density of population. Consequently, urban and large school districts will have more access to information about the educational change than rural and small ones. However, he acknowledges that the development of innovations is growing significantly and access to innovations will also become more and more convenient. The capacity to operate effectively by individuals and institutions in this intricate system will thus be important.

Advocacy from central administration: Fullan (2007, p.73) considers the roles of the chief district administrator, central district staff and the principal, as well as their advocacy and support, as crucial for initiating change at the school level. However, as explained in Chapter 1 – Introduction, in this research setting the operation of higher education organisations is supervised by the government and its agencies, not school districts. University rectors have the most power or authority and they usually determine the success of initiatives or innovations within their university. Hence, in this study this factor is renamed as *Advocacy from university rector*.

Teacher advocacy: Fullan (2007, p.75) asserts that teacher support and advocacy is another important factor that will lead to the success of the reform. He also notes that national, state and local teacher unions are strong advocates of change. In this research setting lecturers, who play an equivalent role to educators, are the critical stakeholders of educational change at the higher education level. Their advocacy is thus one of the influential factors affecting the development of IOERs. This factor is thus renamed as *Lecturer advocacy*.

External change agents: Fullan (2007, p.76) discusses that change agents external to the district are “charged with the responsibility for stimulating and supporting change”. He also highlights that change agents or facilitators play a significant role in initiating innovations. In this research, the *OER champions* are considered as change agents. OER champions are agents who are knowledgeable about and committed to the OER movement in Vietnam, and as the literature indicates, their role in the OER movement in this country is vital.

Community pressure/support/apathy: Because communities differ in their characteristics, different combinations of factors will lead to different initiation patterns (Fullan, 2007, p.76). In this research, the characteristics of internal and external communities of the HEOs and their attitude towards the development of IOERs are identified as potential factors.

New policy – funds: Depending on the scale of the change projects, new policy and funds will exert different impacts on the initiation phase. Fullan (2007, p.78) notes that many significant educational changes have been implemented successfully in the past, thanks to in-time policies and legislation related to those changes released by governments. According to the literature, new policy and funding support for the development of IOERs are considered inevitable for success.

Problem-solving and bureaucratic orientation: The last factor that may affect the initiation phase is the orientation of school districts and schools. This factor relates to organisational culture and self-governance. According to Fullan (2007, p.79), some schools or school districts might be orientated towards taking risks (problem-solving) while others are more conservative and less likely to be innovative (bureaucratic).

Factors influencing Phase II (Implementation): Fullan (2007) specified nine factors influencing this phase and grouped them into three categories, namely characteristics of change, local factors, and external factors. “Characteristics of change” is the first group of factors that affected the implementation of the change and includes the need, clarity, complexity, and quality and practicality of the change program.

Need: Fullan (2007, p.88) emphasises that the priority needs must be scrutinised before implementing innovations. He also provides a range of examples based in the U.S. that validates the significance of need relating to change decisions and directions. At the school level, he points out three significant complications associated with the role of “perceived need” in the implementation phase. First, as schools may face many changes simultaneously, does the given need outweigh others? Second, perceived need related to the improvements may not be very obvious until changes are starting to be implemented. Third, during the implementation process, together with other factors, the need can become further clarified or unintelligible (Fullan, 2007, p.88). In this research,

the identification and recognition of the needs for OER and IOERs from stakeholders are considered as a potential factor affecting the development of IOERs.

Clarity: Fullan (2007, p.89) outlines the importance of the innovation's clarity in the change process. He states that lack of clarity regarding the "diffuse goals and unspecified means of implementation" is problematic. He also raises an issue associated with the change when it "is interpreted in an oversimplified way": this is called false clarity. He advises that people who sincerely desire to implement unclear and unspecified changes may face serious stress and frustration.

Complexity: Fullan (2005, p.90) proposes that the complexity of the innovation project, the skills, activities, and efforts needed to put that innovation into practice, and the extent of change in stakeholders' beliefs, teaching approaches and use of resources will affect the implementation process. He concludes that it is straightforward to carry out simple changes; however, not much difference will be made. On the other hand, complex changes need more effort and time, but they can lead to more significant outcomes. This complexity of the change closely relates to other factors such as the characteristics of the stakeholders or their perceived need for the change.

Quality and practicality of the program: The last factor in the nature of change category recommended by Fullan is the quality and practicality of the program perceived by stakeholders regardless of the types of change, such as new curriculum or a restructured school (2007, p.91). In this research, the IOER development project's quality and practicality will be examined as a factor affecting the IOER development process in Vietnam.

"Local characteristics" and "external factors" are the second and third categories, respectively. The stakeholders are also among the factors affecting the change. In his book, Fullan (2007, p.93) identified a range of key internal and external stakeholders of the education change process, such as the school district, school board and community, the principal, teacher, government and other agencies. However, due to the characteristics of this research context, many stakeholders examined will be different from the stakeholders proposed by Fullan.

The government and other agencies: As indicated before, the concept of school district is not applicable in this research setting as universities in Vietnam are supervised by the government and its agencies. In particular, MOET is in general the principal national agency responsible for education affairs in Vietnam. At the higher education level, MOET supervises and supports the operation of the majority of HEOs. However, some specialised HEOs, such as medical and maritime universities, are supervised by other government agencies like the Ministry of Health and Ministry of Transport, respectively. This research will thus examine the role of the government and its agencies as external factors in the development of IOERs.

The school district: As explained earlier, the role of school district is not relevant and will not be examined in this research.

Community characteristics: Fullan (2007, p.94) notes the community as one of the factors affecting the change process. However, he also states that it is difficult to generalise about the community's role in this implementation phase. As explained in the previous section, the attitude, support and participation of internal and external communities will affect the development of IOERs; hence, their role will be investigated in this research.

The principal: Fullan (2007, p.95) insisted that the principals significantly influence the likelihood of change; however, many do not play instructional or leadership roles in implementing the change. In Vietnam, achieving university autonomy is one of the critical tasks that public universities have been focusing on in 2020 and 2021. In doing so, they have to establish and consolidate university councils in accordance with the Ministry of Education's new Law on Amending and Supplementing Articles of the Law on Higher Education, also known as Code 34. However, as reported by the MOET, as of November 2020, about half of public HEOs have not completed the establishment or consolidation of university councils under the new law (Nguoi Lao Dong, 2020). For those university councils that have been established, their power is still limited. In practical terms, the leader of a university in Vietnam is the rector. Concurring with Fullan (2007, p.95) about the vital role of the educational organisation leader, in this study, the researcher will examine the role of *University rectors* in developing IOERs.

The role of teachers: Similar to the explanation in the initiation phase, in this research the characteristics of and advocacy by university lecturers are vital in the implementation phase. However, Fullan (2007, p.97) also insisted that educators' characteristics and advocacy for the improvement can be affected by other variables such as the organisational culture or climate and relationships of the educators with their colleagues and students. This explains why some educational organisations have many more change-oriented educators than others.

A consolidated list of factors to be included in the theoretical framework is outlined in Table 2. In this list, external change agents are named as OER champions. The school district is not a relevant factor to be examined, as noted above, and is not added to the list. The factors were further analysed and classified into new categories for a clearer presentation in the initial theoretical framework. Five categories were identified: political factors, economic factors, socio-cultural factors, the characteristics of change and access to information about the change. The categories of factors included in the initial theoretical framework is also outlined in Table 2. Some categories of factors include internal factors and external factors and influence both phases (Initiation and Implementation) of the change process. While internal factors refer to anything within the HEO and under the control of the HEO, external factors are determinants outside and not under control of the HEO. These factors are potentially interconnected and some will have a stronger influence on the change than others.

Table 2: A new list of factors adopted and adapted from Fullan's theory

Factors affecting the change (Fullan, 2007)	Affected phase (Fullan, 2007)	A new list of adapted factors	Categories of factors for inclusion in the theoretical framework
Existence and quality of educational innovations	I	Existence and quality of educational innovations	Characteristics of change
Access to innovation	I	Access to information about the change	Access to information about the change
Advocacy from central administration	I	Advocacy from university rector	Socio-cultural factors
Teacher advocacy	I	University lecturer advocacy	Socio-cultural factors
External change agents	I	OER champions	Socio-cultural factors
Community pressure/support/apathy	I	Internal and external communities pressure/support/apathy	Socio-cultural factors
New policy – funds	I	New policy	Political factors
		Funds	Economic factors
Problem-solving and bureaucratic orientation	I	Problem-solving and bureaucratic orientation	Socio-cultural factors
Characteristics of change (Need, Clarity, Complexity, Quality/Practicality)	II	Characteristics of change (Need, Clarity, Complexity, Quality/Practicality)	Characteristics of change
Local characteristics (District, Community, Principal, Teacher)	II	Characteristics of local stakeholders (University rector, Internal community, University lecturer)	Socio-cultural factors
External factors (Government and other agencies)	II	Government and other agencies	Socio-cultural factors

Characteristics of change relate to attributes of the IOER development project such as need, clarity, complexity, quality and practicality. *Access to information about the change* factors focus on access of stakeholders to information about IOER development. *Political factors* are factors that determine the extent to which the central administration at different levels (government or university rectors) may influence the development of IOERs via their policies and actions. *Economic factors* are factors that relate to the funding or monetary investment that contribute to the success of IOER development. *Socio-cultural factors* include facts, traditions, activities, norms or situations that influence stakeholders' or communities' thoughts, feelings and behaviours towards the development of IOERs.

Fullan's theory emphasises social factors in the change process: "educational change is technically simple and socially complex" (Fullan, 2007, p.84). It is obvious that the change will be greatly influenced by the social-cultural factors. Figure 7 depicts the factors affecting the educational change adapted from Fullan's theory (2007). The order of the factors is not important.

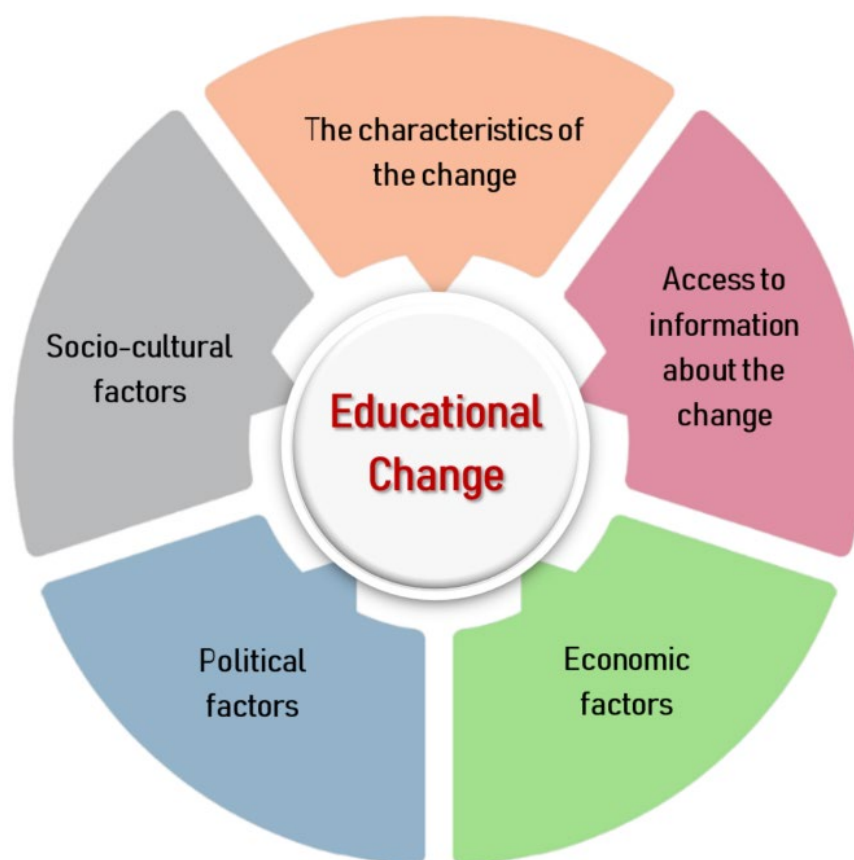


Figure 7: Factors influencing educational change (adapted from Fullan's theory, 2007) 55

3.4 Chapter Summary

In this chapter, the theory of educational change (Fullan, 2007) and the development of the initial theoretical framework are discussed. The relevance of Fullan's theory to this research in nature, concept and goals, explained in previous sections, motivated the researcher to adopt and adapt it for this study. The first component of the theory regarding the educational change process is used to explain and examine the findings relating to the IOER development process. The theoretical framework developed from the second component of Fullan's theory is employed to understand and validate the research findings relating to the factors affecting the IOER development. The findings of Chapter 2 - Literature Review and Analysis and Chapter 3 – Theory and Initial Theoretical Framework provide a knowledge base guiding the research design and implementation, which are presented in the next chapter.

CHAPTER 4 - RESEARCH DESIGN AND IMPLEMENTATION

Research is to see what everybody else has seen and to think what nobody else has thought.

Szent-Györgyi (1957, p.57)

4.1 Introduction

This research project investigates the development of IOERs considered as an educational change in the context of Vietnam. To achieve the research objectives, both components of the theory of educational change (Fullan, 2007), the educational change process and factors affecting the change, are employed in this research to support the analysis of data. In particular, the second component of Fullan's theory relating to the factors affecting the change has been analysed and adapted to develop an initial theoretical framework that best suits this research setting. The theory and initial theoretical framework development were presented in Chapter 3 – Theory and Initial Theoretical Framework. This chapter outlines the research design and implementation.

The philosophical perspectives and methodological approach of this study and the rationale for adopting them are presented first. The research design is then introduced. Next, the tools and techniques used for gathering data are noted. For this research, twenty in-depth interviews are the primary source of data. The research population, sample and demographic information of the interviewees are described. This chapter also describes the data analysis procedure and discusses the instruments used and strategy for data analysis.

4.2 Philosophical Perspectives and Methodological Approaches

Research is an inquiry process that has clearly defined parameters and has its aim in the discovery or creation of knowledge, or theory building; testing, confirmation, revision, refutation of knowledge and theory; and/or investigation of a problem for local decision making. (Hernon, 1991, p.3)

Research often starts with a topic that has emerged from the literature review, or suggestions from others, or through practical experiences. The central concept being examined in the research is called the focus of the study. Once the researcher is comfortable with a potential focus, which is researchable, the next decision involves a determination of the overall paradigm for the study (Creswell, 1994).

There is a large number of published studies from scholars describing the meaning of a research paradigm. For example, in the first edition of *The Structure of Scientific Revolutions*, Kuhn (1962) explained that the term “paradigm” means a philosophical way of thinking. In the second edition of the book, Kuhn proposed a much-cited definition of the research paradigm as “a set of interrelated assumptions about the social world which provides a philosophical and conceptual framework for the systematic study of that world” (1970, p.10). In 1994, Guba and Lincoln defined a paradigm as an underlying belief system or a worldview that leads the researcher to research action or investigation. Similarly, Denzin and Lincoln (2005, p.22), noted that “the net that contains the researcher’s epistemological, ontological, and methodological premises may be termed a paradigm or an interpretive framework”.

The research paradigm plays a vital role in the way researchers conceive the research objectives and approach the research process. The paradigm defines a researcher’s philosophical orientation; it provides ideas and directions which, for researchers in their particular disciplines, influences what research should be investigated, how the research should be conducted, and how the results of the study should be applied. In social science research, numerous paradigms have been introduced by scholars, such as positivist, post-positivist, interpretivist, critical, subjectivist or pragmatist paradigms.

As stated by Kaplan and Duchon in 1988 (p. 572): “interpretive researchers attempt to understand the ways others construe, conceptualize, and understand events, concepts, and categories, in part because these are assumed to influence individuals’ behaviour”. In this study an inductive reasoning approach is followed, in which an interpretivist paradigm is adopted to investigate the IOER development in the Vietnamese context. Unlike a positivist paradigm, which focuses on testing variables or hypotheses, an interpretivist model instead produces categories, meanings and hypotheses from the fieldwork and observations. Since it allows the researcher to come to a deeper

understanding of the phenomena through the beliefs, feelings, perceptions, and interpretations of participants, an interpretivist approach has been employed as the paradigm of this study.

The phenomenon investigated in this study is the development of IOERs as a form of educational change, as explained in Chapter 2 – Literature Review and Analysis. In *The New Meaning of Educational Change* (2007), Fullan proposed three phases of the process of change over time: initiation, implementation and institutionalisation, as well as indicating the factors impacting each phase of the process. After some adaptations explained in Chapter 3, Fullan's theory of educational change fits well with the research setting, and it is employed in this research to understand how HEOs in Vietnam are approaching their IOERs development and identify the factors affecting the development.

As educational change or reform is a social phenomenon which includes social and psychological processes, a qualitative approach is especially appropriate to be employed to explore the adoption of Fullan's educational change theory to this research. Goldkuhl (2012, p.1) states that a qualitative approach is often associated with the interpretivist paradigm, which can be applied to "social constructs that are complex and always evolving, making them less amendable to precise measurement or numerical interpretation" (Glesne and Peshkin, 1992, p.6). Similarly, Denzin and Lincoln state in the fourth edition of *The SAGE Handbook of Qualitative Research* that

Qualitative research is a situated activity that locates the observer in the world. Qualitative research consists of a set of interpretive, material practices that make the world visible. These practices transform the world. They turn the world into a series of representations, including field notes, interviews, conversations, photographs, recordings, and memos to the self. At this level, qualitative research involves an interpretive, naturalistic approach to the world. This means that qualitative researchers study things in their natural settings, attempting to make sense of, or interpret, phenomena in terms of the meanings people bring to them. (2011, p. 3)

Hence, a qualitative approach is considered as a suitable methodology to adopt for this study in order to provide an in-depth understanding of the phenomena being

investigated from the participants' perspectives and points of view. Of the methods of qualitative research commonly applied in social research, such as observation, interviewing, group discussion, documentary evidence and historical study, the investigative tools considered to be most appropriate and applicable to this study are interviewing, and reviewing documentary evidence. These sources were expected to provide data useful for identifying and understanding the main issues concerning the development of IOERs, as well as providing data needed to develop an appropriate model for the factors affecting the development of IOERs in Vietnam universities. Figure 8 visualises the research paradigm of this study adapted from the research onion proposed by Saunders et al. (2019). Information regarding the research design and implementation is provided in the following sections.

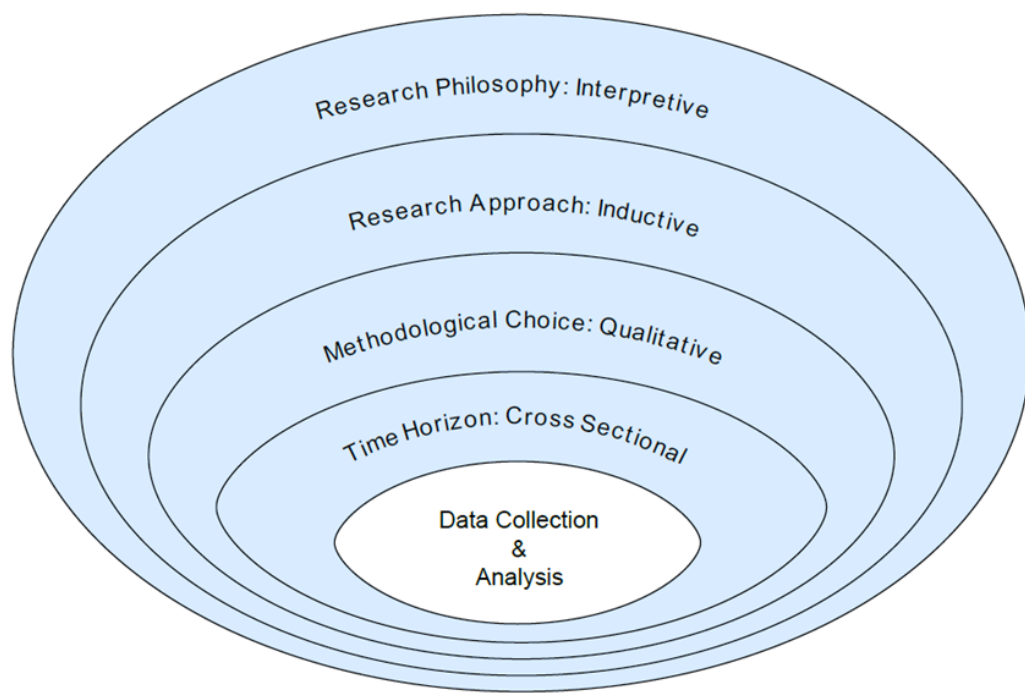


Figure 8: Research paradigm (adapted from Saunders et al., 2019)

4.3 Research Design

The overall structure of this study takes the form of two main phases: Desk Research, and Data Gathering and Analysis, as indicated in Figure 9. In this study, the research process is adapted from Gorman and Clayton's recursive research process (2005, p.37).

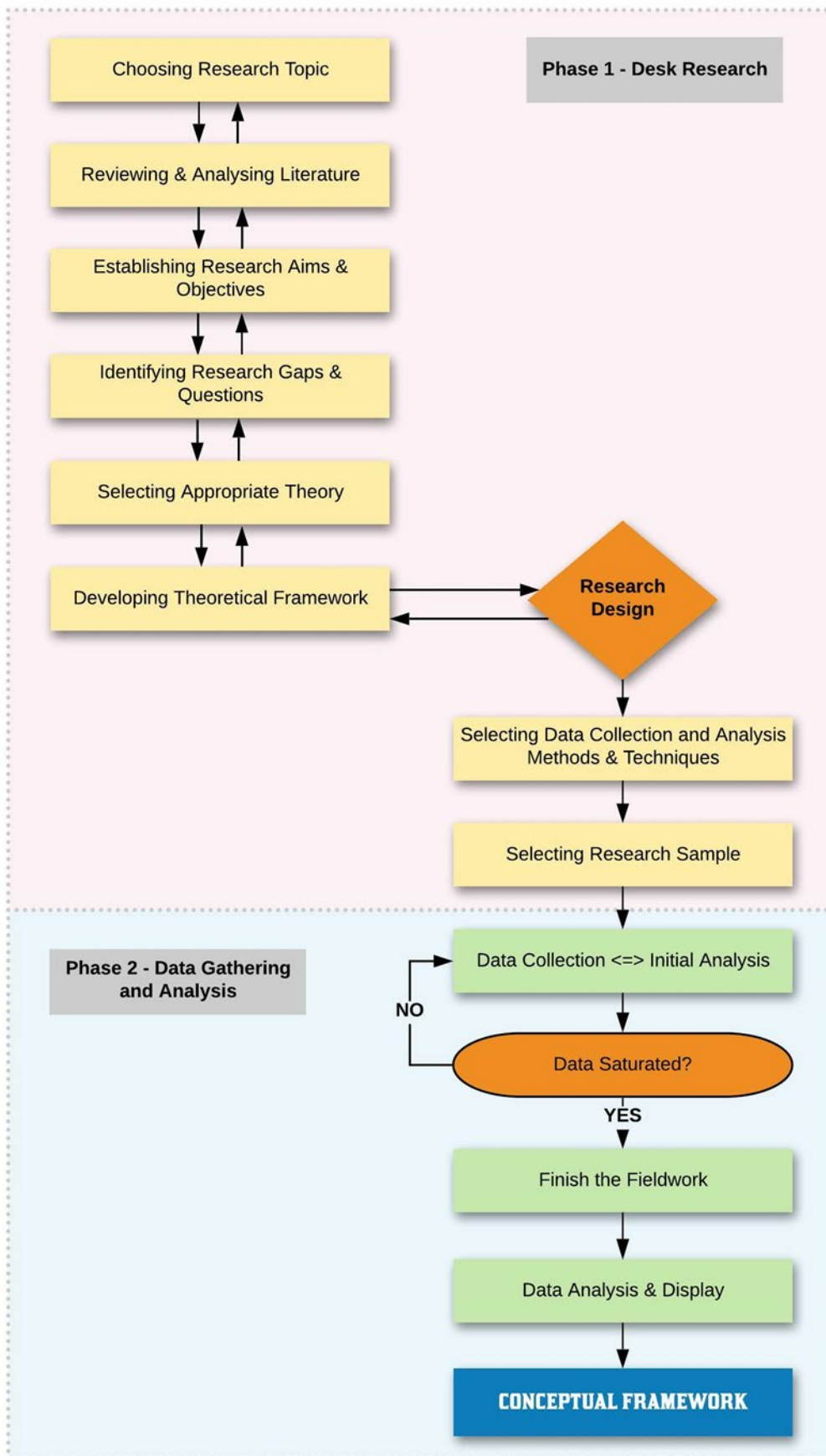


Figure 9: Research process (adapted from Gorman and Clayton, 2005)

Research Phase 1 - Desk Research

This phase primarily consists of reviewing and analysing the relevant literature about OER and their development to scope the initial focus of the research. In particular, reviewing and analysing relevant literature allowed investigation of the background problems in order to know what has and has not been explored, followed by establishing the research aims and objectives. After that, the research gaps were identified, the significance of the research was evaluated and the research questions were formulated. Then the theory was identified and an initial theoretical framework was developed based on the theory. As discussed in Chapter 3 – Theory and Initial Theoretical Framework, Fullan’s theory of educational change (2007) was identified as the most suitable theory for studying the development of IOERs in Vietnam. This stage also includes selecting appropriate methods and methodologies to design the research and developing techniques for the data collection and analysis phase, which are explained in more detail below. At the end of this phase, some preparations for the data-gathering and analysis phase were made, such as obtaining ethics approval, developing interview strategy, protocols and conducting pilot interviews.

Research Phase 2 - Data Gathering and Analysis

Two types of data for analysis were collected, namely interview data and documentary evidence. In this phase, the researcher collected data for this study by conducting fieldwork. After contacting several key participants and getting their consent to be interviewed, the researcher travelled to Vietnam and conducted interviews with them. The data analysis commenced right after the first interview was conducted. The documentary evidence was collected prior to, during and after the period of fieldwork. After four months in Vietnam, the researcher returned to Australia, continued the data analysis process and then wrote up the findings. Detailed information on the methods used for data gathering and analysis is given in the following sections of this chapter.

4.4 Data Gathering

This section introduces and explains the techniques used for collecting data and the rationale for employing them. Further, the research sample, interview questions

development and the demographic information of interviewed participants are also presented in this section.

4.4.1 Data gathering techniques

Gorman and Clayton (2005, p.4) stated that the key characteristics of qualitative research include context, description, process, participant perspective, and induction. In particular, they explained that qualitative research obtains data from the context in which events (or activities) occur in order to describe the events and understand their process. They also argued that qualitative investigators, who are also the critical data collection instruments, seek to understand the perspectives of those involved in a particular process (called participants) via their words and actions. Ideally, a bottom-up approach (induction) is used in qualitative research (Gorman & Clayton, 2005). Almost all of the key characteristics of qualitative research can be fulfilled only by conducting fieldwork. Fieldwork is the “interface between researcher and data in qualitative research”, which involves “collecting data ‘in the field’, being out among the subjects of one’s research, and becoming immersed in their milieu and seeing events and activities as they see them” (Gorman & Clayton, 2005, p.64). As noted before, the data for this research is derived from documentary evidence and interviews.

Documentary evidence

In 2001, Macdonald noted that evidence is found in documents that provide records of the social world (p.196). In this study, documentary evidence was gathered as one of the data sources with two questions in mind to guide the selection, namely “Which documents are needed for the research?” and “Where to find high-quality documents?”

A significant issue at this stage was the quality of the documents. Therefore, Scott’s (1990, p.19) four criteria for assessing the quality of documents (authenticity, credibility, representativeness, and meaning) were adopted. Macdonald (2001, p.197) was of the opinion that various types of documents could be collected and used in social research: public records (both state and independently produced); media; private papers; biography; and visual documents (advertisements, posters, statues). In this

research, to ensure that all materials and resources used in the study are relevant, documents were selected from these categories:

- Institutional documents such as institutional policies and procedures, datasets, theses, journal articles, conference proceedings, and research reports.
- Documents from national associations (such as NALA, AVU&C, VILASAL): annual reports, policies and procedures, conference proceedings, journal articles, and research reports.
- Government publications, legislation, and official statistics: reports, datasets, government policies, laws, procedures and strategies.
- Publications from non-governmental organisation sources, such as UNESCO, the Open Education Consortium, International Council for Open and Distance Education and the William and Flora Hewlett Foundation.

Not many documents were located due to the relative novelty of OER when collecting data in early 2019. Only some related government policies, documents and laws were included. Hence, most of the data analysed in this research were obtained from the interviews. Lately, the OER movement in Vietnam has received more attention and support from many stakeholders; more documents have become available. As a consequence, the recently collected documents (such as the Official dispatch No. 4301/BGDĐT-GDĐT in 2019, Law on Education No. 43/2019/QH14 in 2019, Law on Libraries No. 46/2019/QH14 in 2019, and Vietnam OER conference proceedings published from 2015 to 2019) were very helpful to support the discussion and arguments in Chapter 7 – Discussion.

Semi-structured interviews

“An interview is a purposeful discussion between two or more people” (Kahn & Cannell, 1957, p.9). In social research, sociologists have always been curious about the attitudes, thoughts, perceptions and beliefs of social groups, and the principal method of attitude research is the interview (Fielding & Thomas, 2001, p.123). In this study, interviewing is the primary method adopted to get the story behind the participants’ experiences, behaviours, feelings, perceptions and opinions. Apart from examining complex questions, this research method allowed more detailed questions to be asked

and immediate responses to those questions received, which is usually impossible with quantitative methods.

Interviewing is the most widely used research method in social research, and it takes many forms. The way to differentiate interviewing types is the degree of structure imposed on their format. There are three primary types of interviews common in social research: (1) structured; (2) semi-structured; and (3) unstructured. Structured interviews or standardised interviews rely on a list of standardised and fixed questions to gather information from all respondents (Williamson, 2017b). Interviewers in unstructured interviews, on the other hand, do not use a scheduled set of questions but rather ask open-ended questions based on a specific research topic to collect information (Williamson, 2017b). By adopting a less structured interview type, the researcher can create an informal atmosphere and encourage the participants to be open and comfortable in responding to the questions, resulting in more precise and authentic responses (Williamson, 2017b).

The semi-structured interview was considered as the most appropriate method to achieve the research objectives and was employed in this study. A semi-structured interview is a flexible type of interview method, which allows the interviewer both to ask significant questions in a consistent manner from interview to interview, while altering the sequence when needed as a means to probe for more information (Fielding and Thomas, 2001, p.124). The characteristics of the semi-structured interview are flexibility, depth of information, quick response and validity. The main advantage of the semi-structured interview in this research is that it enabled the researcher to have a list of themes and pre-prepared questions to be covered in the interview. However, it is very convenient: the interviewer can adjust questions and change direction to deviate where necessary in order to maximise the information obtained while the interview is taking place. In addition, the participants can answer the interview questions in as much detail as they want, and the interviewer can obtain more detailed responses where appropriate. In 1998, Strauss and Corbin highlighted the advantage of using a semi-structured interview approach rather than a structured one:

If one enters the field with a structured questionnaire, then persons will answer only that which is asked and often without elaboration. Respondents might have

other information to offer, but if the researcher does not ask, then they are reluctant to volunteer, fearing that they might disturb the research process. (p.205)

An open-ended question is the ideal questioning technique typically found in qualitative research to obtain rich and informative data. By using open-ended questions in the semi-structured interviews, the researcher expects to obtain in-depth responses from interviewees. These questions are designed to encourage interviewees to provide full and meaningful answers. In this project, the researcher created an interview questions mapping table (Table 3), which includes a list of key interview questions and the associated research objectives. This table assisted with keeping track of and focussing on the central questions of the research during the interviewing. These interview questions was developed based on the issues identified in the literature and research focus and objectives. During the interviews, participants were also asked to provide or introduce relevant documents to the research topic to support the research project. In this way, some proceedings of OER conferences held in Vietnam were obtained from the interviewees and used to strengthen the arguments in this research.

Table 3: Interview questions mapping

Research objectives	Key interview questions
(1) Participants' awareness of OER	<ul style="list-style-type: none"> – Have you heard the term ‘Open Educational Resources’ (OER)? Where? (for example, School, Library, Internet, Facebook, TV news) – If yes, please briefly define what OER are in your own words. – Do you know of any available licenses for OER? Please tell me about it. – What do you know about the OER movement in Vietnam? – Have you participated in any of those activities? Which ones? What do you think about those activities? – Do you know the Vietnam Open Educational Resources (VOER) national program? What do you think about it?

	<ul style="list-style-type: none"> – Has the library or its staff at your institution done any outreach in terms of offering services related to OER? If yes, what are those?
(2) Participants' perceived benefits of OER	<ul style="list-style-type: none"> – Do you think OER will benefit teaching and learning activities? Why do you think so? – What are the benefits of OER to different stakeholders (like student, lecturer, learner, university and society)? – What do you think about the long term impacts of OER on our education system?
(3) Participants' attitudes towards the development of IOER	<ul style="list-style-type: none"> – Do you think OER should be essential and important resources for teaching and learning activities? Why do you think so? – Do you wish you knew more about OER so that you can incorporate them more into the course(s) that you instruct? If no, why not? – Do you think universities in Vietnam should develop institutional repositories to facilitate the adoption and production of OER on the campus? Please tell me why you think so. – Will you support the development of the OER repository in your university in the future?
(4) The skills and knowledge needed for engaging with OER	<ul style="list-style-type: none"> – What challenges have you encountered or you think that you may encounter in your efforts to utilise or create OER? – In your opinion, what are the anticipated difficulties or challenges that users face while searching, adopting, localising, using and disseminating OER? Why do you think so? – Which skills and knowledge do you think that you or users may need in order to utilise or create OER efficiently?
(5) Campus stakeholders involved in the IOER development process	<ul style="list-style-type: none"> – Do you have any OER repository developed in your university? Please tell me more about it. – In your opinion, please indicate the unit in the university where developing/utilising an OER repository is best located. Why is this unit the most suitable one?

	<ul style="list-style-type: none"> – In your opinion, what are the internal and external stakeholders involved in the OER repository development? – Have you ever considered the library as a resource for developing/utilising an OER repository? Why or why not?
<p>(6) The IOER development process at HEOs in Vietnam</p>	<ul style="list-style-type: none"> – Do you know how the OER repository is developed and maintained in your university? Could you please describe these processes in more detail? – Please tell me how the OER repository can be developed and maintained in your university in the future. – Please tell me the roles of stakeholders in this development process. – What are the roles of a university’s leader in developing institutional OER repositories? – In your opinion, what are the roles of the academic library in developing institutional OER repositories? – Do you think that librarians’ skills will be helpful in order to assist and support users of OER? Why or why not? – Do you think that library staff can create their own OER or localise an existing OER in order to share with their colleagues and users?
<p>(7) The factors that affect the development of IOERs in Vietnam</p>	<ul style="list-style-type: none"> – What facilities are needed for developing and maintaining the institutional OER repositories? – What IT infrastructure are needed for developing and maintaining the institutional OER repositories? – What policy is needed for developing and maintaining the institutional OER repositories? – What human resources are needed for developing and maintaining the institutional OER repositories? – What are the challenges of developing institutional OER repositories at your institution and in Vietnam? – What are the opportunities for developing institutional OER repositories at your institution and in Vietnam?

	<ul style="list-style-type: none"> – What factors influence the development and management of institutional OER repositories in Vietnam? How?
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Both components of the educational change theory (Fullan, 2007), the educational change process and factors affecting the change, were adopted in this research. The second component relating to the factors that influenced the change was adapted to develop an initial theoretical framework, as explained in Chapter 3 - Theory and Initial Theoretical Framework. However, the theory and framework were only used in the latter stage of the data analysis to understand, examine and validate the research findings. They were not used to design the interview questions nor analyse the collected data, but instead, the codes, concepts and new insights emerged from the data. More information regarding data analysis is provided in the next section of this chapter.

4.4.2 The research sample

In research terms, a sample is a group of people, objects, or items that are taken from a larger population to facilitate data collection. There are two significant types of sampling, probability and non-probability. The concept of probability sampling includes simple random sampling, systematic sampling, stratified random sampling and cluster sampling, whilst non-probability sampling consists of convenience sampling, snowball sampling, quota sampling and purposive sampling. As stated by Williamson (2017a, p.369), “grounded theorists and other interpretivists, requiring small samples for their research, whether for personal or focus group interviews, do not aspire to using probability sampling and do not see their sampling approaches as second best”. For this study, non-probability sampling techniques: purposive sampling and snowball sampling, were employed. The main reason for adopting these sampling techniques is the nature of this research that targets a group of people who are challenging to identify, locate and recruit. When this research was initiated in 2017, the OER movement in Vietnam was still marginal, and the community still had very limited awareness and understanding regarding OER. The sampling process was completed according to the description of the purposive sampling method where a “researcher relies on his or her own judgment when choosing members of a population to participate in the study” (Dudovskiy, n.d.). Patton (2002, p.169) noted that “the logic of purposive sampling lies

in selecting information-rich cases for study in depth. Information-rich cases are those from which one can learn a great deal about issues of central importance to the purpose of the research”.

Initially, potential participants were identified by reviewing the literature, publications and reports in the proceedings of scientific conferences on OER, and searching on the Internet. The three best-known conferences held in Hanoi until the time this research was designed were:

- “Building foundations for open educational resources for higher education in Vietnam: Policies, communities and technological solutions” held on 29/12/2015 in Hanoi (VFOSSA, 2015).
- “Policy advocacy to promote open education resources in higher education in Vietnam” held on 28/09/2016 in Hanoi (VNU USSH, 2016).
- “Implementing open educational resources: Copyright and Open License” held on 19/10/2017 in Hanoi (VNU USSH, 2017).

At this stage of the research ten potential participants, who had made the very first contributions to the OER movement in Vietnam, were identified. Most of them were attendees or authors of publications in those conferences. They were working at HEOs in different positions such as university administrators and faculty members, library managers and staff. Several potential participants were affiliated to some professional associations. Among the potential participants, key participants were identified, including OER champions and IOER leaders, who were expected to provide rich and in-depth information. OER champions are agents who are knowledgeable about and dedicated to OER research and its development in Vietnam. IOER leaders are those who lead IOER development projects in their institutions. However, only six identified participants were available to be interviewed; the remaining (fourteen) participants were recruited using a snowballing technique. More information about the research participants is provided in the following section. The number of interviews was determined by reaching saturation point. Williamson (2007a) notes that the size of the sample in inductive research is not able to be determined in advance and the sample is considered to be large enough when no new data is being found in interviews. This is called saturation.

4.4.3 Data collection

Data collection was undertaken in Vietnam in the first quarter of 2019 and lasted for four months. In advance of the interviews, the researcher carried out a pilot study with two lecturers from two public universities, one in Can Tho and the other in Ho Chi Minh City. The main purpose of the pilot study was to develop and test the adequacy of the research instruments, assess the feasibility of the full-scale research, and assess the proposed data analysis techniques to uncover potential problems. During the pilot interviews the researcher identified some issues, including overlaps between the interview protocols, and insufficient knowledge from the participants about OER, which led to inappropriate answers. The researcher then revised the interview questions to address issues that emerged during the pilot study. More clarification of the terms and concepts being used were added in an interview handout to provide the participant with a better understanding of the research and concepts before the interview started.

As indicated previously, semi-structured interviews with open-ended questions were used to collect data for this empirical study. In the research design stage, ten potential participants were identified as a result of literature review and Internet search. However, due to accessibility and availability constraints, only six participants among those identified (three champions and three IOER leaders) consented to be interviewed. By asking these participants to suggest/introduce others known by them, the research sample grew from the first six participants to twenty participants.

The twenty participants were employed by two foreign universities, seven public universities, three private universities and two education-related organisations based in Hanoi, Hai Phong, Ho Chi Minh City (HCMC) and Can Tho, four of the largest Vietnamese cities by population. Participants included two university administrators (UA), three IOER leaders (OL), five library administrators (LA), two library staff (LS), two faculty administrators (FA), three faculty members (educators) (F) and three OER champions (C). Information about the participants is provided in Table 4.

Table 4: Summary of participant information

Participant		Sampling technique	Gender	Location	Working at
1	OL1	Purposive	Male	HCMC	Foreign-backed university
2	OL2	Purposive	Male	HCMC	Foreign-owned university
3	OL3	Purposive	Male	Hai Phong	Private university
4	C1	Purposive	Male	Hanoi	Public University
5	C2	Purposive	Male	Hanoi	Institutional organisation
6	C3	Purposive	Male	Hanoi	Government organisation
7	UA1	Snowball	Male	Hanoi	Private university
8	UA2	Snowball	Male	Can Tho	Public University
9	LS1	Snowball	Female	HCMC	Foreign-owned university
10	LS2	Snowball	Female	HCMC	Private university
11	F1	Snowball	Male	Hanoi	Private university
12	F2	Snowball	Male	Can Tho	Public University
13	F3	Snowball	Female	HCMC	Public University
14	FA1	Snowball	Female	HCMC	Public University
15	FA2	Snowball	Female	HCMC	Public University
16	LA1	Snowball	Male	HCMC	Public University
17	LA2	Snowball	Female	HCMC	Public University
18	LA3	Snowball	Female	HCMC	Public University
19	LA4	Snowball	Male	HCMC	Public University
20	LA5	Snowball	Female	HCMC	Public University

The interviews began with an introduction to the research scope and focus, and an explanation of the terms and concepts that would be mentioned in the interview. Following the interview questions mapping table (as introduced earlier), during the interview, participants were asked to talk about their understanding of OER, provide their perceptions regarding the benefits of OER, describe the process (or potential process) of developing IOERs in their universities, describe the stakeholders involved in the process, and discuss the skills and knowledge needed for efficiently engaging with OER. They were also invited to identify different factors that affect IOER development, as well as reflect on how these factors can affect the development of the

IOER. As expected, different type of participants focused on explaining different issues. For example, while the IOER leaders provided practical experiences on the IOER development process and stakeholders involved, the library staff and educators focused more on explaining the skills and knowledge needed to engage with OER. Overall, the interviewees provided a rich picture of the investigated phenomenon from higher education provider perspectives. All the interviews were conducted with participants in Vietnamese. Each interview took place face-to-face for an average of 74 minutes.

4.5 Data Analysis

English is considered the international language of research and has been the language of choice for many international scholarly journals (Swales, 1985). When data are collected in a different language to English, challenges are posed for analysis and presenting findings, as noted in the literature (Smith et al., 2008). In this research, the data were collected in Vietnamese, but the findings were presented in English. All interviews were recorded and transcribed verbatim, then analysed in Vietnamese using the conventional content analysis approach (Hsieh & Shannon, 2005). Next, the codes, categories and themes that emerged were translated by the researcher into English. This helped to reduce the cost and time required to translate all material into English, and ensure the validity of the data. The researcher also translated a number of quotes used for illustrating the findings. This section provides further information regarding the instruments used, approach, and procedures of the data analysis.

4.5.1 Data analysis software

The interviews, field notes and documents generated a large amount of unstructured qualitative data, and it was thus necessary to choose the strategies and instruments for analysis. In this research, a variety of software and tools were used for the analysis: data storage such as hard drive and cloud drive (Google Drive, Dropbox), Microsoft Office (Word) and NVivo 12. In particular, it was extremely helpful to have the assistance of NVivo 12 licensed by Monash University in analysing data due to the large volume of data collected. Nvivo is a software package regularly used in qualitative

and mixed-methods research. It helps researchers organise, analyse, manage, search and gain insights from their data to uncover themes and patterns.

4.5.2 Data analysis approach

Kondracki and their colleagues (2002, p.224) state that content analysis is a process for systematically analysing textual data resulting from interviews, focus groups, open-ended survey questions, documents and other print media. More particularly, Hsieh & Shannon (2005, p.1278) define qualitative content analysis as “a research method for the subjective interpretation of the content of text data through the systematic classification process of coding and identifying themes or patterns”. There are three distinct approaches to content analysis: conventional, directed, and summative. While with conventional content analysis the study usually starts with observation and the codes emerge from the data itself throughout the data analysis, a study that adopts the directed content analysis approach starts with theory or hypothesis and the codes are derived from theory prior to and during the analysis. With summative content analysis, research begins with keywords derived from the researcher’s interest or literature review; these keywords are defined before and during the data analysis (Hsieh & Shannon, 2005).

As indicated previously, this study employs the conventional approach to analyse data. The researcher assumed that the development of IOER is an educational change in higher education in Vietnam. However, in this case, the educational change theory (Fullan, 2007) is used in a setting quite different from the one for which it had originally been designed. Therefore, although the researcher had adopted both components of the theory (the educational change process, and factors affecting the change) and used the initial theoretical framework adapted from the second component of the theory to assist the data analysis, it was decided to use the theory and this framework only at the later stage of data analysis to understand, examine, explain and validate the research findings. In particular, the codes and concepts emerged directly from the data. They were then compared with the theory and initial theoretical framework to classify and group them into categories and themes.

Hsieh and Shannon described in their much-cited paper *Three approaches to qualitative content analysis* (2005) that conventional content analysis is appropriate when little is known about the investigated phenomenon. Researchers who adopt this analysis approach avoid using preconceived categories but allow them to emerge from the data (Kondracki et al., 2002). This characteristic of this type of analysis is its strength. Hsieh and Shannon (2005, p.1279) noted that researchers can get “direct information from study participants without imposing preconceived categories or theoretical perspectives” when employing the conventional content analysis approach. However, they will find challenges in identifying key categories if they fail to understand the broader context; as a result, valuable information and codes may be missed. Usually, research that employs the conventional content analysis approach examines the relevant theories or literature in the discussion section. However, in the data analysis stage of this study, to address the weakness of this type of analysis, the researcher compared the initial coding scheme derived from the data analysis to the theory and initial theoretical framework to identify the relationship of the codes and do further analysis. The data analysis procedure is explained in more detail in the following subsection.

4.5.3 Data analysis procedure

Hsieh and Shannon (2005) reviewed relevant studies and proposed the typical process of the conventional approach to content analysis in qualitative research. Their suggested process was employed in this research but some amendments were made in the latter stage of the analysis. Five main steps to data analysis were applied: (1) data preparation, (2) data understanding, (3) data coding, (4) further analysis, and (5) data display. The data analysis process is depicted in Figure 10.

The data were analysed as soon as they were collected. Listening to the interview recordings provided a good understanding of the experience and perceptions of the first interviewees. As a result, the interviews that followed were improved and more probing questions asked (e.g., “How do copyright laws affect teachers and students?”; “Why is achieving institutional autonomy important for OER repository development?”). Once all data were collected, the interviews were transcribed verbatim to text. The transcripts

were read repeatedly to comprehend them. Microsoft Word 2016 was used in these first two steps.

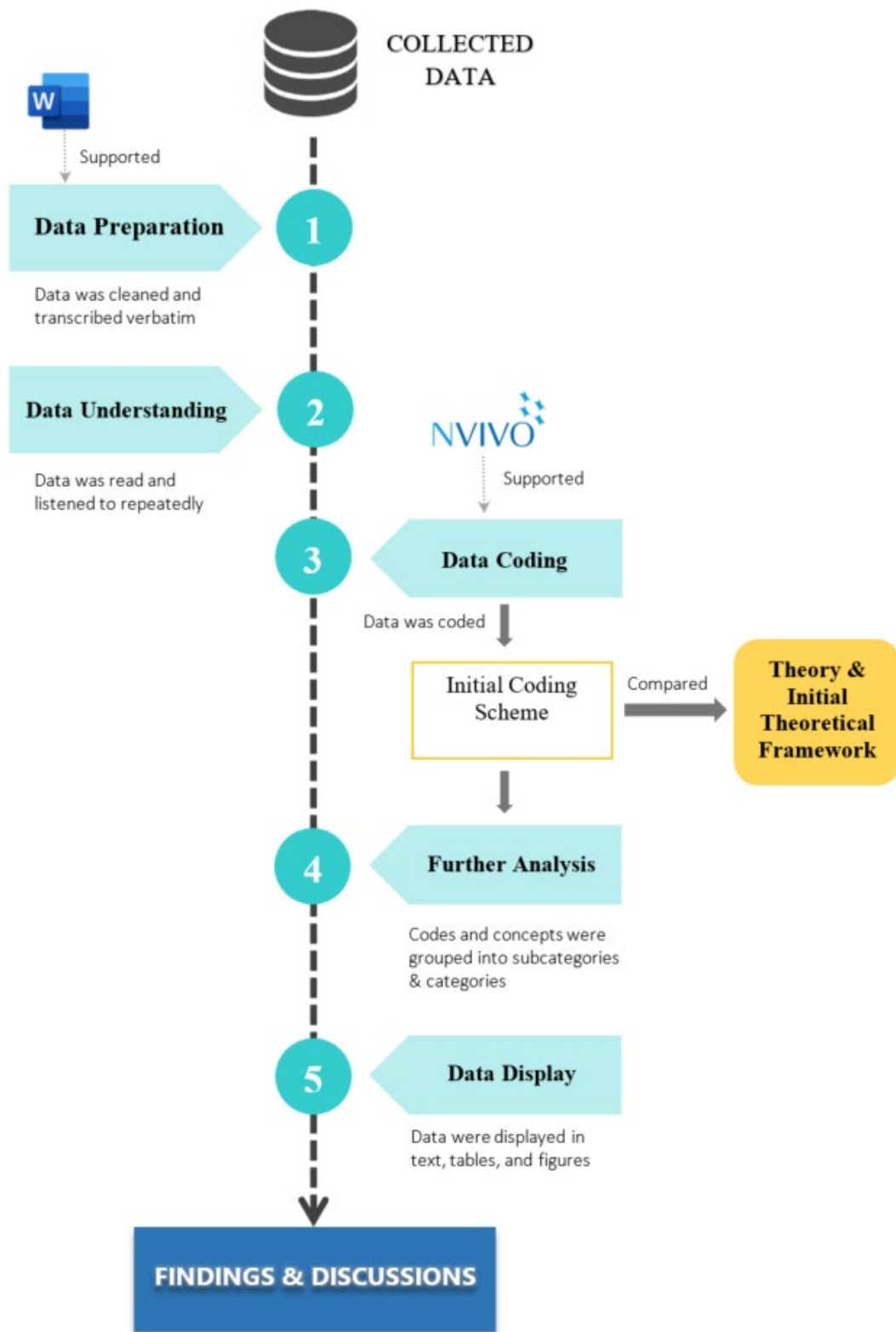


Figure 10: Data analysis process

After the transcripts were ready for analysis, they were read word by word for the purpose of capturing critical thoughts or concepts. The codes were highlighted directly from the text. Impressions and thoughts regarding the codes and concepts were noted. As this process continued, more thoughts were noted, and more codes were derived, resulting in the formation of the preliminary coding scheme. This coding scheme was then translated into English. The coding scheme was compared with the theory and the initial theoretical framework so as to have a broader understanding of the context. Based on the theory and initial theoretical framework, the codes were sorted into meaningful clusters, categories and themes (depending on their relationships, and suggestions that resulted from the comparison). The definitions for each theme and category were developed at this stage. NVivo was very useful to analyse a large amount of data in this study. The results of the analysis were interpreted in text, tables and figures. Eventually, a modified framework (conceptual framework) was proposed based on the research findings and discussion. Table 5 presents an example of the coding of the data relating to the campus stakeholders involved in IOER development.

Table 5: Sample of coded interview data

Theme	Category	Codes/Concepts	Transcription (translated into English)
<p>Campus stakeholders involved in the IOER development</p>	<p>Project implementers – University libraries</p>	<p>Libraries have resources (human resources, ICT systems and educational resources) to develop IOER</p>	<p>“Need expertise in library and information management! [...]. Librarians use the Dewey Decimal Classification or Library of Congress Classification to classify documents. It is best to let librarians do it [developing the IOERs] because if we let the IT staff, who do not have library expertise, do it, it will be incorrect, dissimilar to the international standards” (C3)</p> <p>“The library has human resources and skills to organise [OER] and develop IOER. The library also has experience supporting publishing OER. [...]. We [library staff] built the OER Subject Guides. We search, select and organise available OER to specific types, categories and topics. We try to help users finding the needed resources quickly. We want to make them [users] feel that the repository is user-friendly and easy to use” (OL2)</p>
		<p>Libraries have relationships with their internal and external stakeholders</p>	<p>“The library is the most suitable place in the university to develop and manage OER initiatives. Because the library best understands its clients - the users and creators of resources” (OL2)</p>
		<p>Libraries have an obligation to build and manage educational resources and repositories in universities</p>	<p>“If they are resources, then they should be managed by the library. Since the function of a library in a university is to manage educational resources” (LA1)</p> <p>“[Developing IOER] Of course is the job of the university library! No other unit [within the HEO] can do it better. It is one of the main responsibilities of the library” (LA2)</p>

4.5.4 Ethics approval

Ethics is indispensable in research. Johanson (2013) cited Max Weber, an influential social theorist of the twentieth century: “research ethics are a system or theory of moral principles, about the rules and standards which guide human conduct in research, expressed in deliberate motives and actions, affirmed by an individual or a particular group” (Weber, 1949 in Johanson 2013, p.445). Before participants could be recruited and interviews begun, the fieldwork’s research procedures needed to be submitted to the Monash University’s Human Research Ethics Committee (MUHREC). The ethics application for this project (ID: 17699) was approved by the MUHREC on 3 December 2018.

The explanatory statement (see Appendix 1 and 2), consent form (Appendix 3 and 4), interview handout (Appendix 5 and 6) and the interview questions (presented in Table 3) were translated into Vietnamese to help participants gain understanding about the research and associated concerns. In the data collection process, participants were contacted via email; once receiving their response agreeing to participate, the interview questions were sent. If participants changed their decision not to participate, they were free to do so. All participants were aware that their participation was voluntary and they could withdraw at any stage of the project without being penalised or disadvantaged in any way.

Participants’ consent to participating in the research was ensured before the interviews started. At the beginning of each interview, the ethics issues and requirements were explained to participants. They were also provided with the explanatory statement and consent form where these issues and requirements were stated clearly. They were advised that their responses would be recorded and all twenty participants in this study agreed to that requirement.

Details of all of the research participants, as well as their affiliated universities or organisations are anonymised in all reporting, and the raw research data are kept confidential in the researcher’s working computer with password protection. These data are only available to the researcher and supervisor team and will only be used for this

thesis and associated academic publications. Five years after the data were collected, these data will be destroyed.

4.6 Chapter Summary

This thesis is investigating the development of OER repositories in higher education in Vietnam by adopting an interpretivist paradigm and inductive reasoning approach. Fullan's theory of educational change and an initial theoretical framework derived from the second component of Fullan's theory were employed to assist the data analysis. Non-probability sampling techniques (purposive sampling and snowball sampling) were used to identify and recruit the interview participants. The qualitative data were obtained from documentary evidence and face to face interviews, which were analysed by using the conventional content analysis approach. The analysis was supported by the NVivo 12 software program. The research methods and methodologies employed in this research enabled the researcher to interact closely with respondents, obtain informative data and then be deeply involved in the data and allow the codes and concepts to emerge. This chapter also introduces the instruments used for data collection and analysis, and language and ethical considerations of the research. The research findings are reported in chapters Five and Six, followed by the discussion in Chapter 7.

CHAPTER 5 - PARTICIPANTS' PERCEPTIONS OF OER AND IOER DEVELOPMENT

Opening up education requires a change in attitudes and mindset.

Ossiannilsson, Altinay and Altinay (2016, p.159)

5.1 Introduction

Practical experience of OER remains limited in Vietnam, so when interviewed, the majority of the contributions of participants in this study were based on perceptions and expectations. Only about one-third of the respondents have used or created OER or developed IOERs. From the inductive data analysis five major themes emerged, namely: (I) Participants' awareness of OER, perceived benefits and attitudes towards its development; (II) Knowledge and skills needed to engage with OER; (III) Identification of campus stakeholders involved in IOER development; (IV) Participants' perceptions of the IOER development process; and (V) Participants' perceptions of the factors affecting the development of IOERs. These themes are outlined in Figure 11. Each theme potentially covers multiple subthemes, categories and subcategories.

The preliminary coding scheme emerged during the data analysis process, and the results were compared with the theory and initial theoretical framework and then were further analysed to generate the research findings. The great majority of interviewees in this study believed that the higher education sector in Vietnam could greatly benefit from the OER movement in various aspects. They also expressed positive stances toward the use of OER and the development of IOERs. However, they pointed out that IOER development in Vietnam is complicated with many stakeholders involved, and is affected by numerous interconnected factors. To successfully implement IOER projects, much effort and support from the stakeholders is required. The respondents also identified a set of skills and knowledge needed for different levels of engagement with OER.

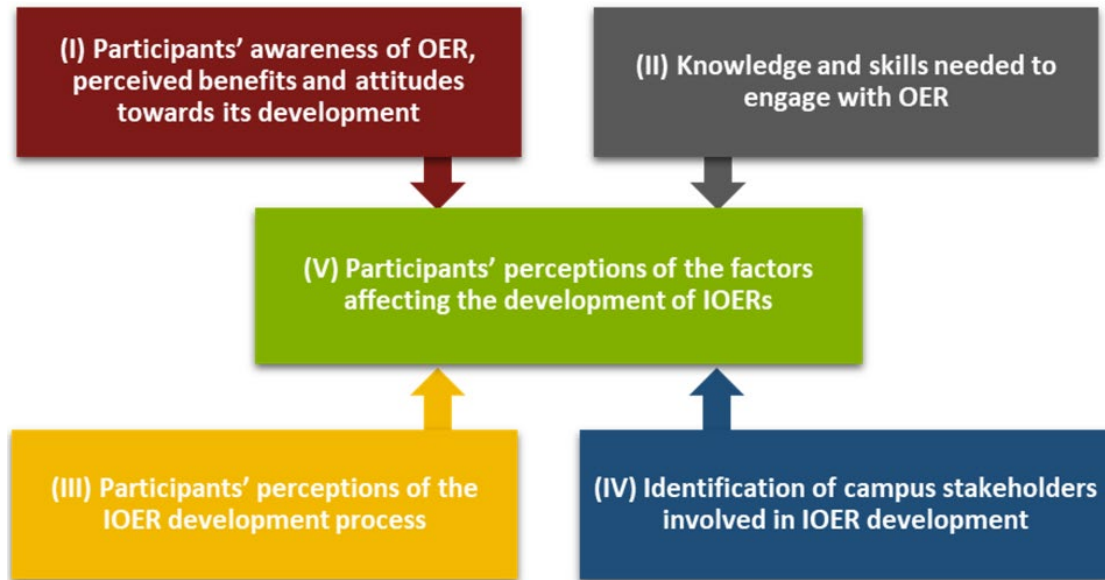


Figure 11: Emerging themes

The first four themes are articulated in this chapter while the last theme, which addresses the primary research objective of this study related to the factors affecting the development of IOERs, is examined in the next chapter.

5.2 Participants' Awareness of OER

This section reports the findings relating to participants' awareness of OER and their concepts, and their engagement in the OER movement in Vietnam. Among twenty participants, three champions and three IOER leaders identified from the literature as experienced and knowledgeable about OER and the OER movement in Vietnam, were expected to provide rich and informative responses. After the interviews, these first participants introduced other participants who might understand OER or have experience with OER. As a result, the other fourteen informants were recruited by using a snowball sampling technique.

The results of this study reveal six degrees of participants' awareness of and engagement in the OER movement in Vietnam ranging from enthusiastically involved, to least aware of. The characteristics of the groups are as follows, starting with the most experienced: (1) organised OER scientific seminars, training, or activities; (2) led IOER

projects; (3) participated in OER activities in Vietnam; (4) knew about OER and their concepts; (5) had heard about OER but did not possess comprehensive knowledge of them; (6) had never heard about OER before the interview. The degrees of awareness of and engagement in the OER movement are outlined in Table 6.

Table 6: Awareness and engagement of participants regarding OER

Degrees of awareness of and engagement in OER movement	Participants
(1) - held OER national seminars, training, activities, were a member of The Open Education Development Advisory Board or participated in international OER activities	C1, C2, C3
(2) - led IOER projects	OL1, OL2, OL3
(3) - participated in OER activities in Vietnam	UA1, LA1, FA1
(4) - knew about OER and their concepts	LS1, LS2, LA3, LA5, FA2
(5) - had heard about OER but did not have comprehensive knowledge about them	F1, F2, UA2, LA2, LA4
(6) - had never heard about OER before the interview	F3

Group (1): The interviewees had different degrees of knowledge of and experience with OER. As the champion and IOER leader participants were identified from the literature, their understanding of and experience with OER were high, as expected. The highest OER awareness and engagement degree was possessed by the three champions (C1, C2, and C3), who organised various OER activities, training, programs, and scientific conferences in Vietnam. Working at the senior administrative level, the champions also comprehended the political, economic, educational, and socio-cultural conditions of the research context. The data collected from them thus provided critical and thorough insights. In 2017, all three champions collaborated with UNESCO to conduct research on and promote OER in Vietnam, as discussed in Chapter 2 – Literature Review and

Analysis. Two of the champions were members of The Open Education Development Advisory Board affiliated with AVU&C. The champions were also very enthusiastic about engaging in international OER activities.

Group (2): Three IOER leaders (OL1, OL2, and OL3), who were library staff and directors, demonstrated their clear understanding and empirical experience with OER in the interviews. They also proactively participated in OER activities as well as collaborated with different stakeholders to promote the OER movement in Vietnam. One of the IOER leaders (OL2) was also a member of The Open Education Development Advisory Board. In this research, most of the information about the practical opportunities and challenges of OER adoption and IOER development as well as the development process and stakeholders involved in the development was provided by them.

Group (3): Apart from the champions and IOER leaders, three other interviewees (UA1, LA1, FA1) indicated that they knew about OER and had been involved in OER activities and training in Vietnam. All of the participants in this group were working at university administration level. A faculty administrator from a public university in Ho Chi Minh City stated:

I'd heard about OER before but hadn't learned much about it until Mr A [a champion participant in this research] organised OER training and workshops at my university, I participated in and then developed my interest in OER. (FA1)

A library deputy director from a public university in Ho Chi Minh City noted that the first time he heard of this term was from a workshop held by Mr A organised at the VNU USSH in Ho Chi Minh City, probably in 2015 or 2016. He participated in the workshop and decided to learn more about OER after that (LA1).

Group (4): Five participants, who had heard about OER and knew OER concepts before these interviews, were allocated to this group. They have not participated in OER activities in Vietnam or led any IOER projects. The informants in this group included two library staff, two library directors and one head of a Library - Information Department in a university (LS1, LS2, LA3, LA5 and FA2). A library staff member in a foreign-backed university in Ho Chi Minh City defined OER as digital educational

documents that are open to anyone from anywhere to access, reuse and revise. One participant (LS1) noted that OER were also openly licensed. In general, these participants had some understanding of OER and their concepts.

Group (5) and (6): Five other participants (F1, F2, UA2, LA2, LA4), who had heard of the term OER before the interviews took place but did not have comprehensive knowledge about OER, were allocated in this group. When asked to define OER, two of the participants in this group were unable to differentiate between OER and open access resources, and another participant stated that MOOCs are OER (F1). A university administrator from a public university in Can Tho City was surprised to hear about Creative Commons, asking “What is Open Licence?” (UA2). One lecturer from a public university in Ho Chi Minh City (F3) stated that she knew about open access but has not heard of the term “OER”.

The study revealed that participants learned about OER mainly from the launch of VOER and the OER activities organised by the champions in Vietnam. Geographically, most of the OER activities originated from Hanoi, the capital city of Vietnam, which is considered to be the cultural and political centre of the whole country. It is understandable that the participants residing closer to Hanoi had a greater awareness about OER than the others.

5.3 Perceived Benefits of OER

Participants’ perceptions of OER benefits are presented in this section. In the interviews, respondents were asked to share their perspectives concerning what benefits OER can offer to higher education in Vietnam. All interviewees suggested that OER will positively impact teaching, learning and managing activities at HEOs in Vietnam. Informants in this study pointed out that the benefits of OER can vary for different stakeholders. In line with the literature, two major subthemes emerged from the data regarding participants’ perceived benefits of OER: short-term benefits, and long-term impacts of OER.

5.3.1 Potential short-term benefits of OER

The distinctive characteristics of OER differentiate them from traditional educational resources. Furthermore, according to their advocates, OER provide associated benefits for stakeholders, especially those in the higher education context. As mentioned earlier, an open educational resource should be based on open licensing, be open access and published in open access formats using open-source software. The potential short-term benefits of OER proposed by the participants interviewed for this research are classified into three categories related to its key open characteristics: (1) open access and open software; (2) open format; (3) open license.

(a) Potential benefits of open access and open software. Four potential short-term benefits of OER, associated with its open access and open software characteristic, were recommended by the informants, namely: cost, access, quality assurance, and support for self-learners and life-long learners. Each of these benefits is presented below, illustrated by quotes or examples from the interviews.

Do OER provide cost advantages to stakeholders?

Thirteen participants in this study believed that adopting and putting OER into practice can provide cost savings for stakeholders. An IOER leader at a foreign-backed university in Ho Chi Minh City claimed that using OER will lead to financial benefits for students: “OER will certainly help to reduce student education costs. For example, students do not need to buy expensive textbooks for their courses as they can always use the OER for free” (OL2). A library administrator believed that publishing educational resources as OER is a choice for authors to reduce unwanted publishing expenses (LA1).

For HEOs, informants understood that the use of OER at an institutional level can lead to savings in costs in different ways. Like other types of electronic resources, users can access the repositories and use OER from anywhere at any time, leading to cost savings for HEOs in terms of providing and maintaining facilities and equipment (OL2, UA2). Using OER can also lead to savings for libraries and universities in terms of subscribing to and buying copies of textbooks, periodicals, or other types of resources as their prices have been rising (C1, LA3). Developing, producing, and disseminating OER with open-

source software and tools also helps stakeholders to save money from purchasing costly software (C3). Further, participants believed that the cost-effectiveness of OER to society as a whole could be seen through cost reduction related to book printing and publishing. A library administrator from a public university in Ho Chi Minh City indicated that

MOET spends billions [of Vietnamese Dong] on printing books and textbooks yearly. If there is a new update, all the old versions will become useless. If they build a repository of OER that is open and free to everyone at all educational levels to access and use the resources, a huge amount of money can be saved. (LA1)

Do OER ensure an advantage in access to educational resources?

Participants believed that OER benefits teaching, learning and researching by providing access to educational resources thanks to its open access attribute. Eleven of the twenty interviewees argued that the open-access characteristic is one of the biggest strengths of OER as it leads to other benefits such as cost-effectiveness. A champion participant expressed the view that: “As a researcher, I think OER offers great benefits, especially access to educational resources” (C1). A similar view was noted by a university rector from a public university: “The greatest benefit of OER is to provide access to educational resources for studying, researching and working; firstly for students, teachers at universities and colleges; then for everyone, including learners, organisations and businesses” (UA2).

Is the quality of OER ensured and even improved due to its open access characteristic?

With regard to the quality of OER, the interviewees of this study had different, sometimes opposing perspectives. Several participants doubt the quality of OER as everyone is usually allowed to modify OER content and republish a new version. On the other hand, many others maintained that the open aspects of OER offer excellent opportunities for educational resources to be reviewed and modified by the community. As a result, they believed the quality of OER would be more assured. A champion participant explained:

As everyone can access OER, the authors will have opportunities to receive good feedback and improve them. [...]. Therefore, when you create and publish your work as OER and share it with everyone, your work will achieve a certain quality. (C2)

Further, a lecturer from Can Tho (F2) stated that OER developed by university lecturers could be of satisfactory quality as they are already moderated by the authorised parties in the university before publication and release. In general, the majority of participants in this study expressed a positive belief about the quality of OER. This is a critical facilitating factor for the OER movement in Vietnam in general.

Do OER support self-learners and life-long learners?

Among the impacts of OER, support for self-learners and lifelong learners is one of the most frequently occurring responses from the interviewees, cost advantages being another. Six participants of this research were of the opinion that developing IOERs will allow large numbers of outside users to access educational resources. One of the champions provided an example of how OER can support self-learners and lifelong learners:

After enrolling on a particular course, a learner found that it is inappropriate to them. Is it possible for them to make a change and minimise the waste of time and money? Or do they have to quit and restart a new course? [...]. Currently, there are phenomena called unlearn and relearn; learners can change to learn something else to suit their career interests and purposes. [...]. In this case, open educational resource becomes an essential source for them [self-learners and lifelong learners]. (C2)

(b) Potential benefits of open formats. Four short-term benefits of OER in relation to its open format characteristic emerged from the data analysis: saving time and energy of stakeholders; inspiring users' creativity; diversifying teaching and learning resources; and offering the opportunity to collaborate on creating new open knowledge that benefits the community. The benefits associated with the open format characteristic of OER are clarified further below.

Do OER help to save time and energy of users?

It is believed by several respondents in this research that the open format characteristic and module-based nature of OER can help users save time and energy. Users could select only relevant contents or parts of the OER for their purposes and they also can customise the resources to suit specific topics, contexts and audiences. A champion forcefully presented his perspective on how the adoption of OER can save time, money and energy for users:

About 150 universities in Vietnam are providing IT-related courses currently, and I bet they have developed completely different courses and curriculums. I do not understand this. It is a waste of time, energy and money. Why don't universities create an OER program which includes around 70 per cent of the common core knowledge for everyone to use and the other 30 per cent can be customised to suit each university's desire? (C3)

Do OER encourage users' creativity?

The openness in format, as well as licensing of OER enables users to reuse, retain, revise, remix and redistribute (called the 5R activities, as clarified in Chapter 2 – Literature Review and Analysis) the resources freely (Wiley, n.d.). By engaging in the 5R activities, users can apply their creativity in developing new knowledge from existing knowledge. A champion participant interviewed raised this notable advantage of OER to higher education in Vietnam:

OER can help to solve many problems, but the best benefit is that OER encourages people's creativity. [...]. Let's think, more than 20 million Vietnamese are involved in the education sector, about one-fourth of Vietnam's population. If we adopt OER officially, suppose that only 10 per cent of those people can be creative, it means we have 2 million creators in Vietnam. That is the dream of hundreds of countries around the world. (C3)

Does the introduction of OER help to diversify teaching, researching and learning resources?

Apart from the educational resources that reside in the public domain and the commercial resources that libraries have to be licensed to get access to, the introduction of OER adds a new flexible educational material source. Four participants in this study argued that the open formatting and module-based nature of OER can bring diversity to the teaching curriculum. One IOER leader commented: “Having OER, the types of resources are diversified with videos, photos, case studies, and many other things. Now the students have more options; OER helps to diversify educational resources used in school and universities” (OL2). Another IOER leader recounted that the lecturers in his university like to use OER because their variety helps make their lectures more interesting (OL3).

Do OER offer the opportunity to collaborate on knowledge sharing and creating?

An IOER leader from a private university was of the opinion that the openness in format and license of OER fosters knowledge sharing and creating, which are necessities in the academic environment. Here is his view on the topic:

By deploying OER, universities will have a huge advantage thanks to its open nature. For example, if you share A [the resource] as open educational resource so that it can be further developed into A +, A ++ [by other authors] your contribution to society will be available forever. However, if you create B and keep it only for yourselves, that B is pointless. (OL3)

In today’s economy, knowledge is a valuable asset within any organisation, especially HEOs. It seemed to be assumed by the respondents that the open aspects of OER may have a significant impact on promoting knowledge sharing between lecturers and universities in order to improve the quality of training and research. A champion participant proposed that “it is very good to use OER in an academic environment as OER can be freely accessed and open-licensed. It helps to promote knowledge sharing in HEOs” (C1). However, a library staff member interviewed was concerned that the majority of higher education stakeholders in Vietnam are not familiar with the idea of a knowledge-sharing culture (LS2). In fact, the lack of familiarity with the culture of sharing IP and waiving copyright and other related rights is causing hesitation for OER users and creators in Vietnam, as claimed by many participants in this study. Hence, it

is worth noting that open education practices can possibly lead to a change in the belief and philosophy of stakeholders in Vietnam with regard to knowledge-sharing.

(c) Potential benefits of open licenses. Several respondents in this study believed the open license characteristic of OER offers two other short-term benefits to Vietnam, namely, ensuring the currency of resources, and promoting clarity of copyright. Details of the proposed benefits are discussed next.

Does open licensing help to keep resources up to date?

While the quality of OER may be controversial, three participants in this research believed that their currency can be ensured as users can always revise and publish an update. An IOER leader interviewed (OL2) believed that the open aspects of OER provide resources with the ability to stay up to date with recent developments in their field as “due to the open-license, open-format and open-access features, the content of OER is always up to date. For example, from one original lecture, different derivatives with case studies and examples will be created to suit different contexts and time”.

Is the copyright of OER always clear due to the open license?

Two interviewees proposed another benefit of OER in Vietnam’s context: copyright and license clarity due to their licensing mechanism. The prevalence of copyright infringement and piracy in Vietnam probably indicates that awareness, knowledge, and compliance with copyright and IP law and legislation on the part of most Vietnamese people are limited and thus of concern. If the resources are published as OER, they will be open-licensed and so will contain provisions that instruct users how the resources can be used. A champion claimed that: “open educational resource is open-licensed. The rights that users can exercise with an open educational resource such as reuse, remix, redistribute - as you know there are 5R activities of OER – are very clear” (C1).

5.3.2 Long-term impacts of OER

This section discusses the long-term impacts of OER on the various stakeholders. Over half of the indirect benefits of OER were proposed by the champion participants. A champion contended that one of the long-term impacts of the wide adoption of OER in

education and training activities in Vietnam's HEOs can be seen in the improvement in educator and student satisfaction and even performance over time. Here is his view: "More open educational resources are available, lecturers' teaching approach is improved, and students are also encouraged to do more self-learning and self-researching. [...]. There are various important values that open educational resource brings to education [in Vietnam]" (C1). Moreover, many participants argued that by utilising original OER, users can improve their English proficiency inexpensively as the predominant OER repositories in the world are mostly in English. A vice-rector of a private university in Hanoi gave his opinion on how OER can help to increase users' English proficiency in this way:

Like all other universities in Vietnam, we always want to improve the English proficiency of both teaching staff and students. [...] Our great desire is to teach some subjects in English in the future, and the original open educational resource in English is an excellent support tool for doing this. (UA1)

A champion stated his perspective when trying to convince lecturers and authors to deploy, develop and use OER:

Now people pay more attention to the values and citations that a researcher gets rather than the number of publications. Therefore, if you publish your work as an open educational resource, it will have a significant opportunity to be reached, read and acknowledged. [...]. For example, instead of publishing a [copyright protected] book worth 100,000 Vietnamese Dong, the book is likely to be accessible by a thousand people. Now, you publish it as an open educational resource; maybe ten thousand people can access and share it. Since then, your popularity will also be increased. (C1)

Indeed, the open and legal aspects of OER allow the resources to be more widely accessible, reviewable and reusable. As a result, they can help promote the OER creators' reputation and influence in their fields, according to many participants in this research.

Several respondents of this study indicated that, as OER are mostly digital, OER users have to visit university websites to use the resources; thus, the visits and page views of

those websites is increased. They believed that open education practices can help to improve the university's popularity and influence long term. A library director who is in charge of leading an IOER project in a private university in Haiphong City explained how embracing OER could help to promote the public image of the institution:

Webometrics is a system that ranks world universities and libraries [...] based on the user traffic, the number of downloads, visits and Web content. Our library [which has the OER repository] is currently ranked 389 in the world by Webometrics, and in the top 1000 university libraries in the world, we are the only library that comes from Vietnam [in the list]. [...]. This [ranking] result has a significant impact on our reputation, and this is thus one of our strengths. (OL3)

Relating to the above statement, two champions interviewed in this study believed that the open aspects of OER support university administrators in managing the resources developed by their faculty members more effectively. One of them explained:

The best way to manage knowledge is by responding to and supporting the open movement. [...]. When the knowledge is opened and archived, if people [academic staff] want to leave the organisation, they can do that as the knowledge [developed by them] is still here. The others can always use or base on that to build new knowledge. (C3)

Several participants in this study also believed that the wide adoption of OER in teaching and learning in Vietnam would lead to innovations and changes in teaching practice; and as a result, potentially updating the current educational culture, trends and models in Vietnam. A champion claimed that:

In a university environment, open educational resource can be an essential resource. It will help to create flexibility for teachers and learners, encouraging innovation in teaching and learning. Instead of following a single method, now teachers and students can be more flexible in teaching and learning. (C2)

In general, participants in this study believed that OEPs could lead to various direct and indirect benefits to different stakeholders in Vietnam. Some associated issues emerged

from the interviews and are discussed in Chapter 7 - Discussion. The following section explores the attitudes of participants towards developing IOERs in Vietnam.

5.4 Participants' Attitudes towards the Development of IOER

Despite perceiving potential benefits of OER for higher education in Vietnam, participants also raised numerous challenges when trying to embrace the OER movement in this country. These challenges are presented in Chapter 6 – Factors Affecting the Development of IOERs. Several participants were discouraged by the challenges, while others had a positive attitude towards harnessing OER and developing IOERs.

Over half of the participants believed that open educational resources should be an essential type of resource in supporting teaching and learning activities in higher education in Vietnam. A lecturer from Hanoi maintained that: “Yes, I think it [open educational resource] needs to be vigorously developed, especially at universities in Vietnam. University A [where the interviewee works] is aiming for that. However, it will need a lot of effort from all stakeholders” (F1). A champion explained that OER should be essential resources in HEOs; however, a quality mechanism for managing and monitoring OER needed to be developed (C2). Many interviewees also expressed a positive attitude in adopting OER and developing IOERs in the future. When asked about the possibility of using and creating OER, a lecturer from Can Tho stated: “Yes, I will definitely use them. This [OER] is a trend in the world. For Vietnam, they [OER] will also be a very useful source of learning for students” (F2). A library staff member gave a matching view: “I think they [OER] is just sooner or later [to be developed in Vietnam]. It is clear that in the world, people have many open educational resource initiatives that are very much welcomed by the community” (LS1).

In short, the majority of respondents of this study expressed a positive attitude towards using OER and developing IOERs. In fact, of the twelve universities visited by the researcher to collect data, three have implemented IOER development projects, and four planned to initiate development projects. The others claimed that they would do it

when the government has a fair policy to support OER adoption and IOER development in Vietnam.

5.5 Knowledge and Skills Needed to Engage with OER

In response to the interview question “Which skills and knowledge do you think that you or users may need in order to utilise or create OER efficiently?” participants in this study proposed different types of OER engagement, together with various associated skills and knowledge needed. The data collected from the interviews regarding this subject were analysed and grouped into three categories (or levels) of engagement: basic, intermediate, and advanced, which are illustrated in Figure 12.

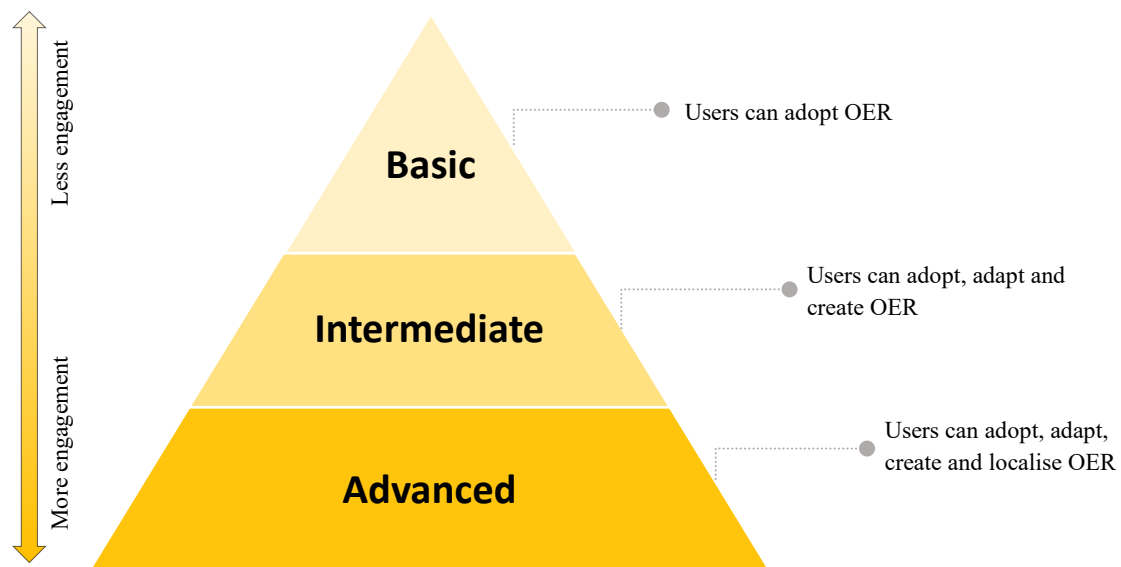


Figure 12: Levels of engagement with OER

In line with previous studies, in this investigation the knowledge and skills required to efficiently engage with OER are also called OER literacy. OER literacy is in many ways similar to digital literacy, which refers to the ability of an individual to deal with various digital technologies and platforms (such as Internet platforms, social media, and mobile devices) sufficiently in their daily activities (Lankshear & Knobel, 2008). Beyond that, people with OER literacy have good knowledge about OER, high-quality OER

repositories, and IP rights and copyright, especially open licenses. The skills and knowledge required at each level of engagement are presented below.

Basic engagement with OER

This is the most modest level of engagement with OER out of three levels proposed by participants in this study. Users at this level are expected to be able to make basic use of existing OER such as searching for, evaluating, obtaining, retaining, and reusing OER found from the Internet for their personal goals. Apart from the professional knowledge, skills and literacies that should be possessed by a higher-education user, participants advised that an awareness of OER, fundamental digital and information literacy, some primary knowledge about IP right, copyright and even a basic English proficiency are necessary to use OER.

Participants of this investigation insisted that the low awareness of users, especially students, regarding open educational resource, its concepts and usefulness is recognised as a notable factor hindering the OER movement in Vietnam. This point of view is explained in more detail in the next chapter. Almost all of the participants in this research considered that conceptual knowledge about OER and a recognition of their potential in teaching and learning are the basics required for users to be motivated towards using OER; otherwise, they are unable to recognise their need to use OER. A deputy director of a public university library in Ho Chi Minh City (LA1) expressed that an awareness of OER is essential; users also need to know where to search for relevant and high quality OER. He explained: “We have to know which sources or repositories of OER are available [...] we cannot just type ‘OER’ on Google to find the material we want” (LA1).

Once users are aware of the existence of OER, they need skills and other substantial knowledge at least at a fundamental level, to find suitable OER from the Internet for their use. As OERs are mostly in digital form, many interviewees were of the opinion that the skills and competencies needed for using information technologies to search for, evaluate, collect and make use of OERs and their contents are vital. Indeed, in the information age, having digital and information literacy skills is not only beneficial for users in harnessing OER but is also necessary for Internet users in general. An educator indicated that: “Some skills required to work with information technology are important

[for users who want to make a simple use of OER]. Most of my students are now well versed with computers” (FA1). Another educator (FA2) explained that users, especially students, may encounter difficulty in finding and evaluating sources of information on the Internet. Without sufficient knowledge, ability and experience, finding and using information and resources from the Internet in general can be challenging and it can lead to the use of inaccurate or misleading information. A champion argued that:

Internet users in general and OER users in particular, should have information literacy skills. Once facing uncertain information or resource, they should know how to evaluate it or find another source to compare with in order to find the accurate one. It is an information ability. (C2)

The respondents of this study recommended that a fundamental understanding of IP rights, copyright and associated laws, policies and guidelines are beneficial for users who want to make basic use of OER. The open characteristics of an open educational resource (based on open licensing, being open access, and published in open access formats by open-source software) differentiate it from a copyright-protected resource. To be able to recognise the differences and legitimately engage with OER, users are expected to have some primary knowledge about IP rights and copyright, along with conceptual knowledge about OER. A champion pointed out that basic users will need some understanding of the open licence in order to use OER (C3). A library manager, also the leader of an IOER development project from a private university in Hai Phong, highlighted that an understanding of copyright, IP rights, basic English ability, and some technology skills are necessary for simple use of OER (OL3).

Currently, OER are widely adopted in many countries and the number of OER as well as OER initiatives has increased significantly since the date it was introduced officially in 2002. However, most of the existing OER are in English, and few are available in Vietnamese. Hence, at least a basic level of English language ability is required for engaging with OER, as recommended by almost all of the participants. The majority of users in Vietnam, however, do not have an appropriate level of English language ability. A library staff member, also a leader of the IOER development project in a foreign-owned university based in Ho Chi Minh City, commented that despite having thousands of high-quality open courses provided by MIT, the VOER where those courses are

located remains unpopular for users in this country due to the low English language ability of the majority of Vietnamese users (OL2). When asked about the skills needed for simple engagement with OER, an educator from a public university in Ho Chi Minh City stated: “Fluency in English and computer skills! In particular, the ability to read and understand English [resources], in my opinion, is the most important [for engaging with OER]” (F3).

Intermediate engagement with OER

Participants in this study contended that users at the intermediate level can make efficient use of existing OER. Moreover, they can also be expected to be able to customise or remix the OER obtained from the Internet, or create their OER and publish them with open licences. To be able to do that, a higher level of the skills, knowledge and capacity discussed in the previous section is recommended as essential.

It was understood by the interviewees that one of the main advantages of OER is the right of users to adapt and reproduce them freely. Not only are basic computer skills needed that allow them to locate and access the content of OER, users at this level also need to equip themselves with knowledge and skills to effectively work with technology tools and applications to create, modify the content of and redistribute OER. It could be simply a word processor or perhaps a more complicated multimedia application, depending on the ability and purpose of the creator. A library staff member noted that when producing an open educational resource, users need to think about how they want to format it and where to upload it to; for example, on a blog, Google Drive or the university’s learning management system (LS1). The importance of possessing technology skills for further engagement with OER was emphasised by an educator: “First, I think users have to create a resource. After that, they will need some technical skills; they need to know how to process and upload the resources [on the Internet or repository] for others to use” (FA1).

Having comprehensive knowledge about copyright, open licences, the Creative Commons licensing process, and good English proficiency is believed necessary when users wish to adapt the content of an open educational resource, create a derivative work or distribute their works as OER. Indeed, to adhere to or adopt open license conditions such as Attribution, ShareAlike or NoDerivatives, users need to fully understand what

they are. A lecturer, who is also a deputy head of a department in a public university, explained that: “As the creator of OER, I have to understand the rights and [open] licenses so that when I use and create OER, I do not violate the [copyright] laws. People who use my OER will not accidentally violate the laws either” (FA1). A champion also expressed his belief regarding the importance of knowledge about copyright, open license and English ability when developing OER:

[At this level], you need more skills. After you have found and used OER, then you want to customise them and maybe create a new one and redistribute it, you must know for sure about the licenses [Creative Commons] to understand their legal characteristics. [...]. And to be honest, you will need foreign language proficiency [English], because the available OER were mostly developed by foreign countries. There are not many OER created in Vietnamese. (C3)

Advanced engagement with OER

This is considered the highest level of engagement with OER. According to the participants, users at this level are expected to be proficient in using and creating OER. In addition, they can also localise high-quality OER found on the Internet to support their learning, teaching activities, or sharing purposes. As explained in Chapter 2 – Literature Review and Analysis, typically, OER are created based on specific contexts, languages and teaching methodologies grounded in and specific to the culture and educational norms of their creators. Therefore, to adopt and redistribute OER in a different context, users need to localise them. Localising an open educational resource is not only a problem of language but also one of culture. Therefore, besides the skills, understanding and capacity discussed in the previous sections, users at this level will need some socio-cultural knowledge in specific contexts to localise OER. A champion explained:

Now there are many good OER and OCWs available in the world; in order to localise these OER into Vietnamese, you not only need to understand the content of the document, but you also have to know about the [socio-cultural and educational] situations in Vietnam. Translating only is not localising, but you must embed the culture into it. That is very difficult. [...]. To localise OER,

you must first master the skills [at other levels] and then use your understanding of Vietnam's situations. [...]. Not many users [in Vietnam] are at this level. (C3)

In conclusion, this study found three levels of open educational practice: basic, intermediate and advanced engagement with OER. Respondents advised that users at different levels will have various abilities in engaging with OER, and they also need to be equipped with many skills and knowledge. Further, participants of this investigation believed that users in Vietnam will need more skills and knowledge for more profound engagement with OER.

5.6 Campus Stakeholders Involved in IOER Development Process

This section examines the key internal stakeholders that are involved in IOER development at universities in Vietnam. The interviewees identified four types of internal stakeholders, namely: (1) project implementers; (2) OER content producers and users; (3) project facilitators; and (4) university leaders. These are depicted in Figure 13.

All participants insisted that in Vietnam, IOER development projects are likely to be implemented and monitored by university libraries, with the support of facilitators that include departments and faculties such as the Department of Academic Affairs or Department of Research Affairs. To successfully develop the IOERs, libraries will also need permission, support and guidance from the heads of the universities. Lecturers, students and researchers are the principal group of stakeholders for contributing and using OER content. In practice, university libraries in Vietnam were typically the implementers of IOER development projects.

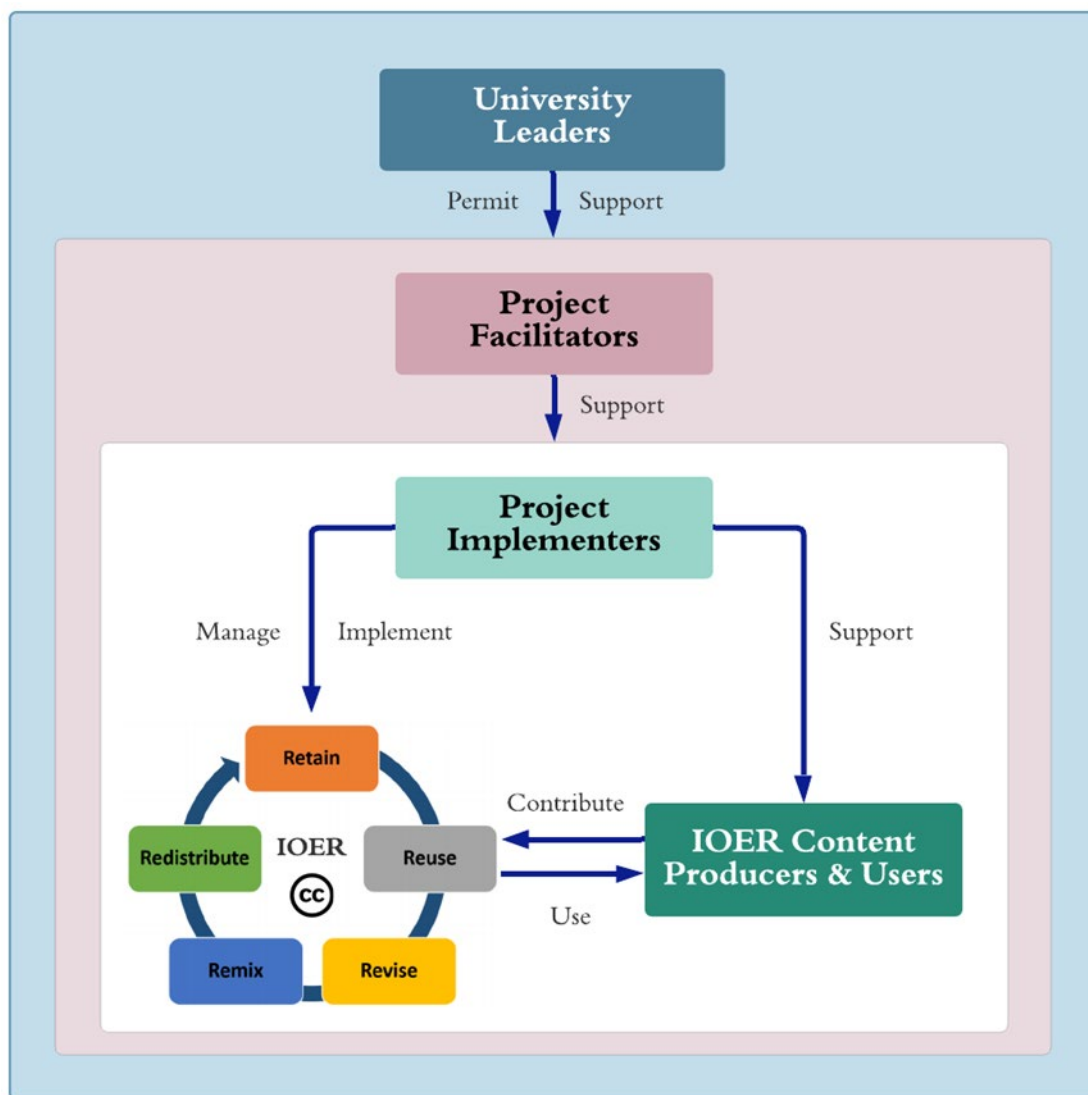


Figure 13: Campus stakeholders involved in IOER development

Project implementers

All of the respondents considered university libraries as the organisational units best placed to develop IOERs within HEOs in Vietnam. The primary reasons pointed out by participants were: libraries have an obligation to build and manage educational resources and repositories; they have relationships with many parties in the university; and they also have various resources to implement the development project, namely educational content, human resources, and ICT systems.

Although the library can contribute to the achievement of a university’s aspirations in various ways at the higher education level, the obligation to develop, manage, and

promote the scholarly collections and educational resource repositories is one of their top priorities. When developing an IOER, which is a type of educational resources repository, participants in this study believed that it is still the responsibility of university libraries: “If they are resources, then they should be managed by the library, since the function of a library in a university is to manage educational resources” (LA1). Another library director agreed with the others by saying: “[Developing IOER] of course is the job of the university library! No other unit [within the HEO] can do it better. It is one of the main responsibilities of the library” (LA2). A champion further explained:

I have read and translated many documents [about the stakeholders of the OER movement on campus], I saw they mentioned various units in the university, but the library is always a must. Before the digital era, libraries were the places that managed the educational resources of the universities, just that they were in print form. Now it is still the libraries’ job, although resources are gradually converted to digital [format]. It is their [libraries’] mission and ability. (C3)

In Vietnam as well as many other countries, libraries are likened to the bridge between information and users. Apart from providing services and performing their information management roles, libraries also act as intermediaries to link and support different parties within the universities to achieve common goals. Participants in this study highlighted that university libraries thus have a good understanding of and solid relationships with internal and even external stakeholders, placing them in the best position to implement IOER development projects (LA3, LA4, UA2). An IOER leader shared his perspective and experience as follows:

The library is the most suitable place in the university to develop and manage OER initiatives. Because the library best understands its clients - the users and creators of resources [...]. To implement the [IOER development] project [at this university], the library has approached the university administrators, faculty and students - three different levels. [...]. As a project initiator, coordinator, and also manager, we [library] ensure that the project’s goals are achieved. We work with various stakeholders to implement the project. (OL2)

The interviewees believe that university libraries in Vietnam have a set of advantages and resources to implement the IOER development project that other units in the university may not have, namely available educational content, ICT systems and human resources. In the past a library was typically described as a building or room containing a collection of books and other learning resources. Nowadays, in a digital world, a library is considered a storehouse of information. Several respondents maintained that in developing IOERs, libraries will be more flexible than any other units as they have learning content and resources at hand. A champion pointed out that “Libraries are places that store, preserve and disseminate [printed or digital] information. Librarians have expertise in processing information. [...]. No one else [other units] can do it [developing IOER] besides the libraries” (C2).

Almost every university library in Vietnam has basic ICT systems to perform its functions, although the systems may be developed and maintained by other parties such as the Information and Network Management Department. Participants in this study proposed that as the university library has available ICT systems and platforms to manage educational resources, it will be convenient for them to develop and maintain the IOER (C2, LA5, OL2, OL3). Along these lines, a library director stated: “The IT Department will help us [library] to create a platform as we want [for developing IOER], but we will manage that platform. [...]. We manage the use and operation of the platform in general” (LA5).

More than half of the respondents proposed that library staff or librarians have the knowledge, skills, experience and attributes needed for developing IOERs. Some of the skills and knowledge pointed out by participants were expertise in developing and managing educational resources and repositories as well as in supporting users using the resources and repositories. In terms of dealing with educational resources, participants in this study believed that data management and curation skills and expertise of library staff with cataloguing, classification, indexing and publishing are necessary for managing OER. When asked about the skills needed for promoting OER and developing an IOER, a champion replied:

Expertise in library and information management is needed! [...]. Librarians use the Dewey Decimal Classification or Library of Congress Classification to

classify documents. It is best to let librarians do it [develop the IOERs] because if we let the IT staff, who do not have library expertise, do it, it will be incorrect, dissimilar to the international standards. (C3)

An IOER leader also shared their experience when developing an IOER:

We [library staff] categorise, annotate and introduce the resources [OER]. The library is also responsible for promoting it [IOER] to the departments. At the beginning of each academic year, the library management team will set up meetings with the managers of the departments to introduce the library services and the IOER. [...]. The library has human resources and skills to organise OER and develop IOER. The library also has experience supporting publishing OER. [...]. We [library staff] built the OER Subject Guides. We search, select and organise available OER to specific types, categories and topics. We try to help users find the needed resources quickly. We want to make them [users] feel that the repository is user-friendly and easy to use. (OL2)

Library and information professionals were expected to provide in-time support for users to use the OER and IOERs via their services. Participants in this research also believed that library staff could support users of the repository by conducting training, workshops and consultations about OER, open licence, citing and referencing, academic integrity, copyright and information literacy (F1, F2, LA3, LA4, LA5, UA2). A champion believed that “The library will be the place to coordinate, operate, manage and promote it [the IOER]. The university library can also organise training sessions on intellectual property rights or information literacy for users. All of those are usually done by the library” (C2). In practice, the IOER development project at a foreign-owned university in Vietnam was implemented by the university library. The leader of that project shared his experience:

University library initiates, coordinates, manages and ensures that the [IOER development] project’s goals are achieved. The library works with stakeholders to put the project into practice. Library also provides training and consultations with parties to create OER [content], and the library will evaluate the results [of the development project] as well. (OL2)

Apart from implementing the IOER development project, library staff were also considered to be able to create OER such as guidelines on information literacy or OER use (C1, OL1, OL2, OL3). Another IOER leader stated: “Library promotes [IOER] and raises awareness of stakeholders [about IOER]. Librarians can create and localise [OER] as well” (OL1).

OER content producers and users

Another essential group of stakeholders in IOER development is OER content producers and users. Most participants in this research believed that university lecturers and students are the main groups contributing to and using OER content via their teaching and learning activities. An IOER leader shared his experience: “Our OER are created by university lecturers. [...]. They compose the resources and then transfer them to the Translation Department for language translation. Those resources are then transferred to the library for open licensing and uploading to the OCW” (OL1). A similar comment was made by a lecturer: “The [university] library should be the place to promote and develop that [IOER], while educators are the creators and users [of OER], students will be the users and also creators [of OER]” (F1). A director of a library agreed: “It is the users who create OER. Instructors are users at a higher level. They create the resources for lower-level users (students) to use” (LA5). If the university has graduate programs, researchers or graduate students are also an important cohort in creating OER. A champion proposed: “Instructors and researchers are the creators of OER. They will have academic articles, scientific projects, proposals, lectures and textbooks; these are the primary OER sources in a university” (C1). Depending on the objective and scope of the IOER project, external learners and users can also be potential contributors to the repository.

Project facilitators

Many interviewees asserted that an IOER development project will not be successfully implemented without the support of facilitators and advocates. At universities in Vietnam, the facilitators of IOER development projects can come from various academic or supporting units. Among those units, the Information and Network Management Departments, University Faculties, Departments of Academic Affairs,

and Departments of Research Affairs are the most frequently suggested by participants in this study.

As noted in Chapter 2 – Literature Review and Analysis, OER are mostly digital. Half of the participants understood that the Information and Network Management Department, where the databases, computer systems, IT security systems and networks of the university are developed, operated, monitored and maintained, play a vital role in facilitating the IOER development project. They will assist the IOER implementers and users in terms of technology. An interviewee listed the key stakeholders involved in the implementation of IOER development project: “The first is the library. The second is the faculties - lecturers. The third is the IT department, and the fourth is the academic and research administration units” (LA5).

Six participants noted that the University Faculties are responsible for checking and managing the quality of the OER developed by their lecturers. One participant highlighted that: “The IT department should support the IT systems while the quality of the resources should be managed by the faculties” (LA5). A faculty administrator from a public university commented: “I think if we collaborate to develop the IOER, the first stakeholder will be the university library, the second will be the department of research affairs, the third will be the university faculties” (FA1).

The Department of Academic Affairs and the Department of Research Affairs play a substantial role in the teaching, researching and learning activities within universities in Vietnam, and they are suggested as significant stakeholders in the IOER development project by many respondents. An educator explained the reason for their view:

The Department of Academic Affairs is important [in the development and operation of the IOER] because they work directly with lecturers to develop teaching materials, they help build the [OER] content. When the content is completed, the library will help disseminate and provide training for users [to use OER]. (F2)

One of the champions had a similar view about the role of the two departments:

The other two units involved in this [IOER development] are the Department of Academic Affairs and the Department of Research Affairs. The Department of Research Affairs oversees everything related to scientific research like academic articles, research proposals and projects. They have a duty and the ability to manage these resources. As for the Department of Academic Affairs, they manage lectures and other teaching materials. (C1)

University leaders

As discussed in Chapters One and Three, in an HEO in Vietnam the rectorate board has the most power or authority within a university. As a result, the implementation of any major initiative or change within the institution will need their consent or permission. Sixteen of twenty participants interviewed in this research proposed that the role of university leaders is crucial to the IOER development. A champion commented: “The leaders [of the university] have a critical role [in developing IOER], especially the rector!” (C1). A lecturer at a private university in Hanoi where OER are well-used stated that:

When Mr Q [the vice-rector of this university] joins our university, he comes with a new “wind” about the open movement. [...]. I find that when a university wants to change or develop, the university leaders must have a good vision. They must support and encourage the lecturers. (F1)

Indeed, if the leaders are visionaries, they can take the university to the highest possible level, as proposed by the participants. Having a similar opinion, another lecturer stated: “Currently, heads of the university are decision-makers and are responsible for the operation of the organisation. Therefore, the university can thrive or not; it is primarily due to the mindset of the leaders” (F2). The director of a library also noted: “The roles of the [university] leaders are vital! They must foresee the real value of OER, the benefits to both the users and creators” (LA2).

Further, as policymakers, the rectorate board members can determine the fate of an initiative or innovation. With a policy in place, stakeholders will collaborate to achieve common goals. The content creators and users will adopt and develop OER, while facilitators collaborate with implementers to develop the IOER and support users. The

respondents of this study argued that without supporting policies, the implementation of the IOER development project is less likely to be accomplished. Some key policies proposed by participants include policies on recognition, commendation, and rewards for using and creating OER, as well as policies about developing IOER. An interviewee stated that the “University must issue policies to encourage, reward and motivate all stakeholders [to use and create OER], just like how they have incentive programs or bonus policies for their academic staff to motivate them to publish [publication]” (FA1). A champion concurred:

It [the implementation of the IOER] will establish an ecosystem comprising the creators, the administrators (coordinators) and the users. However, if there is no policy from the university leaders, it will not be easy to succeed. For example, the policy on all publicly-funded educational resources is “open”. The university has the right to require the faculty to make their resources “open” if the resources were funded by the Government. There will also be a need for an incentive policy. If the work is published as an open educational resource, it will be recognised and credited. (C1)

As previously discussed, various stakeholders will have different roles in the development project. Although the library is suggested to be the principal stakeholder, it does need support from the others to implement the IOER development project. Almost all of the respondents of this research understood that the collaboration of stakeholders is thus significant. A library staff member recommended: “I think the library is like a bridge, a place that gathers people [stakeholders] together to develop it [IOER]. The library alone can not do it” (LS1). An IOER leader shared his experience regarding developing IOER: “There must be cooperation between the units [within the university]” (OL1).

Stakeholders external to the HEOs also exert influence on IOER development in Vietnam, such as the Vietnamese government and its agencies, professional associations, the OER champions, or open-source software providers/companies, as noted by all respondents. Among those, the Vietnamese government and agencies in the IOER development at HEOs were highlighted as having a significant impact,

especially on public HEOs. The external stakeholders' roles are explained in Chapter 6 – Factors Affecting the Development of IOERs.

In short, participants in this study identified four critical internal stakeholders of the IOER development project in a university: (1) project implementers; (2) OER content producers and users; (3) project facilitators; and (4) university leaders. These stakeholders have different roles and their collaboration is essential for the development project. The IOER development process and the engagement of the stakeholders in the process are discussed in the following section.

5.7 The IOER Development Process

In this study only three IOER leaders had practical experience in developing an IOER in their institution, while the other interviewees provided their perceptions and expectations regarding IOER development. Many participants in this research concluded that a bottom-up approach would be effective to develop IOERs and the OER movement in Vietnam in the absence of government support and policy. It is believed by the informants that OER initiatives in Vietnam are better initiated and progressed upward from the lower levels, like from a university or from a unit in the university. An IOER leader explained:

We think it is best to have an official document [related to OER use and development in Vietnam] from a State management agency such as MOET or the Ministry of Science and Technology (MOST). However, in reality, it will be challenging and take a very long time to wait for that document. Usually, in Vietnam, the reality always goes ahead of policy. Therefore, we have to create a strong [OER] movement that makes the State [the Government] realise that it is a thriving movement, and there should be legislation or policies to manage it. We cannot expect the Government to issue policy first as policymakers do not know or understand about OER. (OL2)

A champion who has been supporting the OER movement in Vietnam for years had a similar view:

In the context of Vietnam, it is best to consider a bottom-up approach to develop OER, not a top-down one. It is very similar to the development of other open movements in general. With a movement that has the word “open” [in the name], the bottom-up approach is always the best. (C3)

Institutionally, among the three university libraries that have initiated their IOER development projects, only a foreign-backed one was supported with appropriate policies from the top-level managers of the university. The other two libraries (one in a private university and another in a foreign-owned university) have started their IOER development projects without a policy in place, even though they got permission from the board of rectors.

Different universities in Vietnam have varying strengths, opportunities, and challenges in developing IOERs. Depending on the goals and scale of the project, the IOER development process at various universities will be different. This research employed both components of the theory of educational change (the change process, and factors affecting the change) developed by Fullan (2007) in investigating IOER development in Vietnam. As discussed in Chapter 3 – Theory and Initial Theoretical Framework, Phase III (Institutionalisation) of the change process is not investigated in this study. This section is organised based on Phase I (Initiation) and Phase II (Implementation) of the change process proposed by Fullan (2007).

In general, the ultimate objective of each phase is achieved only with the advocacy of stakeholders. While in the Initiation phase obtaining university leaders’ approval and support is significant, making OER users advocate for and participate in the development activities is essential in the Implementation phase. With advocacy from university administrators, the development project is authorised to be initiated and implemented, and possibly, it also receives support and is underpinned with appropriate policy and guidelines. If users and producers support and advocate for the project, they will proactively use, reuse and produce OER that can help to simplify the implementation of the development process. The IOER development phases and campus stakeholders involved are outlined in Table 7.

Table 7: The IOER development phases and campus stakeholders involved

IOER development phase	Objective	Campus stakeholders involved
Initiation	Achieving approval and support of the administrators	- Initiators - University leaders
Implementation	Achieving support and participation of lecturers, researchers, and students	- University leaders - Project implementers - Project facilitators - OER content producers and users

Initiation

The Initiation phase relates to the determination from decision-makers to proceed with the IOER development project. It is believed by the participants that the Initiation phase of an IOER development project at an HEO in Vietnam might be straightforward, as not many stakeholders are involved, only the initiators and university leaders (decision-makers). The initiators are those who can see the potential of OER, and perceive the need for and desire to build the IOER. The initiators can be any staff within a university, or they can even be the university leaders themselves. In many cases in Vietnam, they are from the libraries or IT departments. In this phase, the initiators will need to approach, propose and persuade decision-makers to agree on developing an IOER (C2, LA5, OL1, OL2). If the university leaders have no idea about OER and their concepts and potential, they are less likely to see the need in developing an IOER. As a result, they will not support the initiative. A director of a library believed:

We [library leaders] have to propose [the open educational resource initiative] to the Rectorate Board. In this case, they do not know what open educational resource is, but we do, we can see its necessity. We approach and propose to them so as to get their consent and approval [regarding developing the IOER]. (LA5)

Implementation

Participants argued that, if the proposal is approved, the stakeholders will need to prepare for and proceed to the next phase - Implementation. This phase relates to the

process of executing the IOER development project. As suggested by respondents, implementing an IOER development project in Vietnam has several steps that involve many stakeholders, namely university leaders, project implementers, project facilitators, and OER content producers and users. From the data analysis, four main steps of the implementation emerged: (1) IOER management; (2) OER awareness raising; (3) OER use; and (4) IOER content creation. Each step of the implementation process requires collaboration from stakeholders. Figure 14 presents the major steps of the IOER implementation recommended by participants of this investigation.

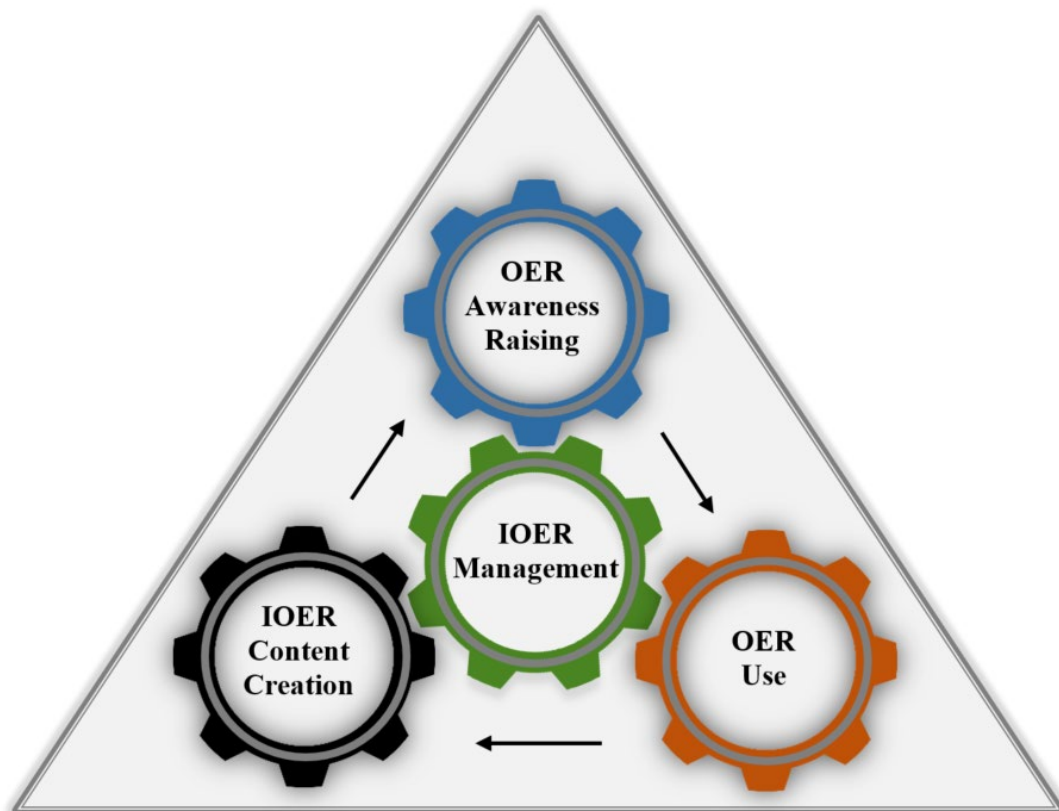


Figure 14: Major steps of the IOER implementation

IOER management: Although the management of IOER is probably less obvious to other stakeholders, it is crucial as it happens when the development project commences and will remain throughout the development process. After the decision to initiate the development project, the appointed implementers will need to carry out some management and governing activities such as evaluating the budget and other resources that are available or required for the project implementation activities, planning,

developing strategies, and calling for funding before starting to introduce OER to users (OL2, LA3).

OER awareness raising: As the OER concept is still relatively new, the next step of the Implementation phase is about OER awareness raising, as recommended by several interviewees. The aims of this step are to raise the awareness of users and provide them with knowledge and understanding regarding open educational resource, its concepts and its advantages. Indeed, it is impossible for users to put much effort into using something they are not sure about. An interviewee believed that: “The difficulty that they [users] face at the first step is the lack of awareness of the resource [open educational resource]. They need to understand the resource, how to use it, what does it offer” (LA5). In this step, the implementers will need to have strategies and campaigns in place to introduce OER, their concepts and advantages to stakeholders (C1). Moreover, it is recommended that the implementers should support users with the important skills and knowledge needed to locate and adapt OER by providing training, workshops, and consultations simultaneously. A champion elaborated:

The library can start from minor things, a bottom-up approach. [The library can] organise workshops and training for lecturers and then help them understand about and integrate OER into their lectures. Once the lecturers know about OER, they will introduce it to their students, step by step. [...]. The library should be a very proactive stakeholder. (C2)

Similarly, an IOER leader revealed part of the IOER development process at his institution:

We [library] train and instruct them on how to use OER (on a case by case basis), open licensing, how to search for and evaluate the [OER] resources, information skills, academic integrity, as well as on how to cite and reference this type of resource. We support both faculty and students. (OL1)

OER use: Once users understand more about OER and have some skills needed to use OER, it will be possible for the implementers to proceed to the next step of the IOER project implementation – OER use, which is supporting users to adopt and adapt OER to teaching and learning. The primary objective of this step is to let users get familiar

with OER and perceive its advantages. An IOER leader at a foreign-owned university maintained that, in order to help users in his university to understand and have experience with OER, he and his team have carried out many activities. They spent much time and effort in preparing a web portal that includes information and links from diverse sources of OER selected by the IOER development team members:

The library examines available OER relevant to the university's subjects [units]. Secondly, the library evaluates the quality and suitability of those resources. Thirdly, the library organises, classifies the links [to the selected resources] by different disciplines and formats so that the user can easily find and access them. After classification, we [library staff] make them accessible, then we start to promote them to many people [users]. (OL2)

Providing users with opportunities to use the OER selected by the library is the next strategy in the third step (OER use). The IOER leader continued: "We [library staff] approach the lecturers to introduce [the OER web portal prepared by us], support them to integrate the [OER] resources into their course. If they try and see the benefits, they will be motivated [to continue using OER]" (OL2). Using a similar strategy, one champion (C3) also stated that librarians can select relevant OER from open repositories around the world and introduce this OER web portal to the lecturers, students and researchers in their university and encourage them to adopt these OER in their teaching, learning and researching. Some of the popular sources of OER that have been used by participants are BCCampus, MIT OpenCourseWare and OpenStax (OL2, F1).

At this step, the implementers will need significant support from other stakeholders, especially university leaders, to ensure that OER are widely adopted by users. As discussed in the previous section, university leaders have the most crucial role in the IOER development project in Vietnam as they can require that stakeholders collaborate to implement the project and make users use and develop OER via their policies, procedures and guidelines. Apart from university leaders, the role of facilitators in this step is also believed to be crucial. For example, a director of a library who planned to develop IOER in the near future recommended:

After collecting good OER, the Information and Communication Office will help us [the library] promote it [the OER web portal], and the IT Department [or Information and Network Management Department] will help us with technology. [...]. The Graduate Research Office [or Department of Research Affairs] will help us disseminate these resources to graduate students and researchers. (LA3)

A library staff member at a foreign-owned university also explained that:

Our library doesn't have a marketing office, we usually do it ourselves. But I think that the marketing jobs [of the OER web portal and IOER development project] should be done by the Marketing and Communications Division, it will be more professional. (LS1)

Some management tasks at this step should be carried out to set the foundation for the next step of the implementation process. The implementers are recommended to regularly review and assess the OER web portal to ensure it is updated with new content or broken links are removed. They could also gather statistics on usage and conduct surveys to receive feedback from users to evaluate whether the OER collection is suitable and easy for users to use. An IOER leader who has implemented an IOER project revealed his experience: “[By collecting usage data] we [the library] will have data to report to the university leaders, and we will have the basis to request financial support, human resource, and other support for us to continue the project” (OL2).

IOER content creation: The focus of an IOER development project is not only to encourage users to adopt and adapt OER but also to produce OER content (C3). As outlined above, the majority of Vietnamese people tend to keep their intellectual property closed to the public. It is expected that after users know about OER concepts and are able to search for OER for their own use, they will be more familiar with the open and sharing culture in education. The implementers can now proceed to the third step of the implementation process - IOER content creation. In this step, the implementers will need to keep working closely with other stakeholders to prepare the IT infrastructure, implement appropriate policies and support users in creating, publishing and distributing OER (F2, F3, FA1, FA2, OL1). Participants of this research contended that in this step, the library still needs to keep providing OER training and

workshops, which will probably focus more on copyright, IP rights, online publishing and open licensing. A participant stated: “[At this step] we [the library] will support users with publishing [their OER], supporting three aspects: license, technology, promotion” (OL2). The implementers will also need to carry out some management tasks at this step such as conducting reviews and evaluations of the project and reporting to university leaders: “Finally, the library will then need to coordinate [the use of IOER], and they need to assess and evaluate the use of the repository” (C2).

In summary, participants recommended that the IOER development projects are best initiated from the grassroots level (a bottom-up approach) such as from the university or a unit in the university. Although the IOER development process at different universities will probably be different due to varying institutional factors, the data analysis shows several key steps and activities that IOER project implementers in Vietnam may need to consider when developing their IOERs. It appears that the initiation phase of the IOER development process is less complicated than the implementation phase. Although the role of the library was highlighted in the IOER development project, respondents of this study also asserted that the collaboration of all stakeholders is essential.

5.8 Chapter Summary

This chapter presents four of five themes that emerged from data analysis, namely: participants’ awareness of OER, perceived benefits and attitudes towards its development; knowledge and skills needed to engage with OER; identification of campus stakeholders involved in the IOER development; and participants’ perceptions of the IOER development process. In general, the research participants believed that engaging with OER (creation, use, and reuse) would lead to numerous direct and indirect benefits to different stakeholders in Vietnam. The majority of the respondents thus have a positive attitude towards harnessing OER and developing IOER.

The respondents proposed three levels of OER engagement (basic, intermediate, and advanced) and associated skills as well as the knowledge needed for each level. They

also recommended that users will need higher levels of skills and knowledge for more profound engagement with OER.

Participants in this study identified four types of internal stakeholders involved in developing IOER: project implementers, OER content producers and users, project facilitators, and university leaders. The university library is believed to be the project implementer, while lecturers, researchers, and students create and use the OER content. Participants also advised that the IOER development project will need massive support from various academic or supporting units within the HEO, such as the Information and Network Management Department, University Faculties, Department of Academic Affairs, and Department of Research Affairs. In Vietnam, as the rectorate board has the most power or authority in a university, they are seen by the interviewees to have a significant influence on IOER development. The collaboration of all stakeholders is believed to be essential for the development project.

Concerning the IOER development process, the informants advised that the Initiation phase is more straightforward compared to the Implementation one. They proposed some essential steps and activities in the Implementation phase: IOER management; OER awareness raising; OER use; and IOER content creation. Overall, this chapter provides a background for the analysis and explanation of findings in the next chapter (Chapter 6), which examines the factors affecting the development of IOERs.

CHAPTER 6 - FACTORS AFFECTING THE DEVELOPMENT OF IOERs

Progress is impossible without change and those who cannot change their minds cannot change anything.

George Bernard Shaw (1856 – 1950)

6.1 Introduction

The phenomenon investigated in this research is educational change in Vietnam via the development of IOERs. The primary source of data for analysis comes from the interviews; however, where available, analysis of relevant policy and strategy documents was also undertaken. Because of the large amount of data concerning participants' perception of the factors affecting the development of IOERs resulting from the interviews, the first four themes that emerged from the data analysis (participants' awareness of OER, perceived benefits and attitude towards IOER development; knowledge and skills needed to engage with OER; identification of campus stakeholders involved in the IOER development; and participants' perceptions of the IOER development process) were examined in the previous chapter. The last theme, regarding participants' perception of the factors affecting the development of IOERs, is presented in this chapter. The research outcomes reported in this chapter address one of the main research questions and contribute to formulating the conceptual framework. The findings presented were drawn from the collected data during the coding process. They were then compared, further analysed and explained based on Fullan's theory and the initial theoretical framework adapted from the second component of this theory (factors affecting the education change) described in Chapter 3 – Theory and Initial Theoretical Framework. Where applicable, new factors were added to the theoretical framework.

The chapter begins with an examination of factors influencing IOER development consistent with the initial theoretical framework, namely, the characteristics of and access to information about the IOER development project, economic factors, political

factors, and socio-cultural factors. In addition to the factors noted in the initial theoretical framework, pedagogical factors, legal factors, and technological and infrastructure factors identified in the interviews were found to have significant effects on the IOER development process. These additional factors are presented in this chapter. This study also found that most factors affecting IOER development in Vietnam are interconnected. Sometimes, it was challenging to categorise some factors due to their close association with others. For the purpose of developing a conceptual framework, each factor identified is listed under only one category, although it may be well related to the others.

6.2 Characteristics of and Access to Information about IOER Development Projects

Educational change is a complex process with the primary goal of improving the school or educational institution (Fullan, 2007). Reflecting the initial theoretical framework developed in Chapter 3 – Theory and Initial Theoretical Framework, the findings of this study found that the need for IOER development, the characteristics of the development project, and access to information about the development directly or indirectly influenced the development of OER repositories in Vietnam’s HEOs. Further, as articulated in Chapter 5 – Participants’ Perceptions of OER and IOER Development, the respondents of this investigation highlighted the benefits and potentials of OER to higher education in Vietnam. This, together with the official documents encouraging OER use issued recently by the government, demonstrates that the development of IOERs is considered among the highest quality, suitable and feasible educational changes in this country currently.

More than half of the interviewees indicated that there is a considerable need to develop IOERs to address the problems and demands raised by the rapid growth of the digital environment in which Vietnam is so far unable to fully engage. An IOER leader stated that adopting and developing OER is necessary for Vietnam:

Our university’s OER project started in 2016 when some experts from [A] university came to visit [Vietnam] and introduced this type of resource [open

educational resource] to us. The library found it beneficial and very essential for Vietnam [education], especially when we have a limited budget [for educational resources] nowadays. [...]. So we [library staff] proposed the project idea to the university's heads and fortunately got it approved. (OL2)

A champion was of the opinion that:

Open educational resource is at the root of the open movement. Currently, Europe has started to develop "Open Science" [European Open Science Cloud], which encompasses all [open initiatives]. If Vietnam remains focused on closed source, we will be backward and weakened. (C3)

Other interviewees expressed a different perspective on the urgency of the development of IOERs. While they believed there is a need for developing IOERs, they identified other associated issues of concern such as a gap between the national IP regulations and OER's open license, lack of awareness of OER and their potential from the communities, and piracy and copyright infringement in Vietnam. These issues need to be resolved before IOER development is initiated in the future, otherwise they will be serious barriers (LA4, LA1).

The respondents pointed out that the characteristics of a development project such as scope, clarity, quality, practicality or flexibility can potentially be either advantageous or disadvantageous for repository development. A well-planned IOER development project with obvious means, goals and strategies will be critical for receiving stakeholder support. Stakeholders need to spend more time, budget and effort on a large-scale development project than on a smaller one (C2). The quality of the change project also has a significant impact on the advocacy of stakeholders. An IOER leader revealed his IOER development strategy:

Most of my university's OER [information and links] were mainly obtained from the repositories of MIT, OpenStax and British Columbia, the reputable organisations in the world [in providing OER]. Nowadays, there are a lot of OER available on the Internet. When trying to find suitable ones for initiating my [IOER] repository, I sought to get those from the most reputable and relevant sources to the courses provided by my university. I was afraid once I introduce

the OER repository to users and they could not find suitable [and quality] documents, they will not trust it [the IOER] any more. (OL2)

An important characteristic of the change project that leads to the advocacy of both internal and external stakeholders is its complexity (Fullan 2007). Unfortunately, the change process examined in this study, influenced by multiple variables, is relatively complex. Complexity is one of the biggest barriers to IOER development in Vietnam: one of the IOER leaders (OL3) claimed that not only for the implementation of a technology-driven change like OER, but also for any other changes that need considerable time, financial, and effort from stakeholders, they will be less likely to be executed successfully if there are no proper policies in place. A champion concluded: “It’s complicated to do [successfully implementing IOER development projects in Vietnam] because it requires a cultural and ideological change from closed to open, not something that can be done in one day” (C3).

It was found that the more access to information about OER and the development plan was available, the more stakeholders’ attention is held and advocacy efforts are made. Many participants contended that promotion campaigns and strategies about OER should be carried out once the development plan is implemented, as discussed in the IOER development process section of Chapter 5 - Participants’ Perceptions of OER and IOER Development. Simultaneously, consultations, training and workshops about OER and other related issues also need to be organised (C1). Once stakeholders can access information about the IOER development program, they can perceive its usefulness, quality and practicality, and are more likely to support the program. Therefore, access to information about OER and IOERs development is considered to be a factor that is predicted to enhance the practicality, clarity and popularity of the development project and also reduce its complexity. One of the IOER leaders from a foreign university stated that

If the community have no idea about open educational resource, its concept and benefits, they will absolutely not pay any attention to OER; the change thus has no advocacy. [...]. The IOER development process in this university comprises many stages together with strategies and activities to raise awareness about OER

among the community and making it as popular as possible is our priority.
(OL2)

The respondents indicated that the quality and practicality of the change program could help to attract more engagement from internal and even external communities. An IOER with high-quality collections and resources can become a major strength of an HEO. A small private university in Vietnam successfully improved its ranking in the Webometrics rankings system thanks to its popular open institutional repository (OL3, C2).

As anticipated by the theoretical framework, the findings of this research confirm that the need for and access to information about the IOER development and the development project characteristics, such as its quality, complexity or scale, have clear impacts on educational change.

6.3 Economic Factors

In this research setting, economic factors refer to the direct or indirect influences, circumstances or facts related to the funding or monetary investment and concerns that contribute to the success of the IOER development. Consistent with the theoretical framework, the study confirms that funding exerts a great influence on the success of the change process. Although many interviewees commented that one of the benefits of implementing an IOER are cost savings, those savings are hard to quantify. At the same time, actual investment is required in several areas. A library staff member noted that universities need to invest financially in developing IOERs (LS1). Undeniably, to develop a quality IOER as well as ensure its sustainability requires an adequate level of financial resources for development activities such as subsidising technological and ICT infrastructure improvements, maintenance, staff costs, rewards, and organising training, marketing campaigns and workshops (UA1, C3, OL2, OL3, LA4).

Seven participants insisted that lack of funding is one of the critical obstacles to IOER development in Vietnam. To allocate funds for the development activities, heads of the university and library need to underpin the project with proper policies and procedures. When asked about the difficulty of implementing an IOER development project, a

director of a university library in Hai Phong expressed his discouragement because of the heavy cost pressure that libraries are experiencing (OL3). A library staff member indicated that “Libraries in Vietnam are not strong [politically], and their financial resources are also limited” (LS2).

This study found that economic factors are not only associated with political factors but also technological ones. An OER repository requires a good network with high bandwidth, updated operating systems and ample storage. Depending on the project scale and goals, the university and its library will need to arrange budgets or call for funding to support the initial investment on technology. A champion explained:

You can imagine if we have a large number of users, it is incredibly costly to build and maintain the system. [...]. Regarding the MIT’s OCW initiative, they have a very robust ICT infrastructure [...] and they are well-funded. (C2)

A library administrator commented: “We also need to consider the sustainability aspect, like the annual maintenance fee, who will invest money to do that? [...]. The creation [of an IOER] may not be hard but maintaining it is extremely difficult” (LA1). Indeed, apart from the initial financial investment to implement the development project, the university also needs to secure a budget for sustaining it. The use of free and open-source software and systems is encouraged for the IOER’s operation as their related costs will be considerably less than commercial ones. However, there are also financial requirements to implement and maintain free and open-source solutions, such as paying salaries for the IT team. A liaison librarian at a foreign-owned university explained: “Free and open-source platforms require people who are knowledgeable about the open-source to install and build” (LS1). This point is elaborated further in the technological and infrastructure factors section.

Participants maintained that the type of education establishment in Vietnam influences the IOER development project (C2, C3, LA1). As explained earlier, universities in Vietnam, especially the public ones, are overseen by the government and its agencies. Public universities in Vietnam have less autonomy than other types of educational establishments. University autonomy is a global trend in university governance, and it has significantly influenced Vietnamese education management trends. In Vietnam, public universities are funded through the State’s budget, and the leaders of these

universities thus have to follow State budget laws, and this is their major barrier in executing any project. The findings of this study reveal that HEOs with full financial autonomy for their activities, like private or foreign universities, will have more advantages than public universities in implementing any changes on their campuses as they are more flexible in funding for their projects and activities.

In summary, lack of funding is one of the main reasons why many university and library administrators are apathetic towards the OER movement in Vietnam. This study corroborates the theoretical framework, indicating that economic factors have a salient influence on the IOER development process.

6.4 Political Factors

Political factors in this research refer to the impacts of actions from either the government or the heads of the HEOs, and their administrative practices, that can influence the development of IOERs in Vietnam. Fullan (2007, p.92) concluded that “ambitious projects are nearly always politically driven” and findings from this study support his assertion. As explained in Chapter 1 – Introduction, Vietnam is a socialist republic where the Communist Party of Vietnam exerts tight control over the development strategies of the country via the legal system, guidelines and policies. A massive change to the education system needs approval, instructions and policies from the government. The recognition and adoption of OER officially and the development of IOERs will lead to a wide-scale change in higher education, as many respondents acknowledged. In the interviews, informants were aware of a range of obstacles that universities face when trying to harness and develop OER. When asked to list in order of importance the factors that affect the development of IOERs, participants considered political factors as the most prominent, with the availability of government policy the most frequently mentioned variable. Two champions explained:

Policy is most important [...]. Solutions like drawing attention and calling for participation are of very short-term impact [to stakeholders]. To have a sustainable [long-term] effect, there must be clear policies [from the government]. (C2)

There should be a policy [on OER]; if MOET does not issue a policy, no [public] university will endeavour to do it [using OER and developing IOER]. Small changes do not matter but important decisions like opening or closing educational resources [in terms of access, format and license] with the current policy that supports closing, if you deliberately practice opening, you will probably be sent to prison. (C3)

Within the university, the interviewees also noted that policy on educational change from the university's head has a profound influence on stakeholder support and user acceptance. A champion stated that the policy from heads of the university is the critical prerequisite factor in the development of IOERs:

In my opinion, the policy is the most important [to the IOER development]. If the university has proper policies [regarding the adoption of OER and the development of IOER], they will help to solve all the other problems. [...]. As policies push people to work on it [the development of IOER] and policies drive people to invest finance in it [the development of IOER], without the policy, it will be difficult for IOER development [in Vietnam]. (C1)

An IOER leader also shared their thoughts as to why the institutional OER policy is an important criterion in developing an OER repository:

The most important thing is the policy on how to develop, manage and use OER. OER development policy encourages lecturers, researchers to create and publish OER and participate in OER development project. Policy on [OER] management helps OER to be delivered to users. OER usage policy includes detailed instructions on how to use OER in courses. When I promoted OER to lecturers, many of them worried that the course coordinator will not be happy if they use OER in their lectures. [...]. For students, when using OER, they are also afraid whether the instructors allow them. So without a clear policy, it is very challenging to develop OER initiatives on campus. (OL2)

Unfortunately, so far, the Vietnamese government does not have any specific policy on OER adoption and development. Not many universities in this country have institutional policy to encourage or provide incentives for producing and using OER.

The absence of official policies about OER was listed as a major obstacle to the development and promotion of OER in Vietnam resulting from the lack of awareness, understanding of and concern for OER from the community and government. Fifteen out of twenty interviewees reported that the lack of policy from the top administration of the country and organisations discouraged stakeholders, especially those from public universities, from harnessing and developing OER. This point is further discussed in the pedagogical factors section. A library staff member stated: “Practically, supporting the OER movement, from the beginning, will be very tough, especially with no policy from the government and university managers. [...]. The most difficult aspect of the OER movement in Vietnam is lack of policy” (LS2). An IOER leader who is also the director of the library of a private university contended that

Now they [libraries] do not have policies [from the administrators of the universities] to support them [in developing OER repositories]; if they “open” the repositories and anything wrong happens, then they have to take all responsibility. [...]. For example, the third parties make money on those resources. If the library is sued [by authors of the resources], who will protect them? If they want to “open”, they need to use open licenses. Even “opening” the access in itself is challenging as many problems will arise later. (OL3)

Associated with legal factors, the lack of clarity in universities’ policies on intellectual property rights and copyright in general was another issue mentioned by many participants. They suggested that besides OER policies, universities must also promulgate or reinforce other policies related to the IP of faculty and students. An IOER leader added:

If the universities want to make the theses “open”, do the authors allow this? There is no specific policy from the beginning for that. Last time Can Tho University opened their institutional repository [in terms of access], then tailieu.vn [a website specialising in trading educational materials] took the theses and tried to sell them on their website. (OL3)

As mentioned before, private and foreign universities in Vietnam, which have full political autonomy for their activities, will have more advantages, flexibility and

authority than public universities in implementing changes like developing IOERs. A champion concluded:

Developing IOERs in public HEOs is very difficult, but it is completely feasible to do that at private universities, and they will be the basis for other institutions to follow as the models. I observed it [this fact] very clearly, for 4 or 5 years supporting the OER movement in Vietnam, I understood that there is no opportunity for public institutions to develop OER repositories. If we only want to raise their awareness about OER [at the public universities], it is ok, but if we want to implement the IOER projects, it is definitely impossible [in the absence of government policy]. (C3)

In summary, in agreement with the theoretical framework, the findings from this study demonstrate that political factors have a significant influence on educational change at the higher education level.

6.5 Socio-cultural Factors

Socio-cultural factors denote social and cultural aspects such as facts, traditions, activities, norms or situations that influence a community's thoughts, feelings and behaviours to an event, issue or phenomenon. Some of the socio-cultural issues identified in this section are correlated with political and pedagogical factors. According to the participants, among the challenges of the OER movement at universities in Vietnam, socio-cultural issues appear to be the most problematic. In agreement with the theoretical framework, this study found that the characteristics of the internal and external communities, their capacity, habits, orientations, practices and cultures, as well as their attitudes towards change initiatives, are the variables that directly affect the IOER development project.

Within an educational institution, the key stakeholders contributing to successful change include the rectorate board members, deans and staff of departments, offices, and units, and educators and students. Their attributes, such as level of awareness about OER, understanding of copyright and IP rights, expertise, technological and information literacy, and English proficiency have an influence on their acceptance of

and advocacy for OER. For instance, a student with modest technological and information literacy levels will face difficulties in searching, evaluating and using OER on the Internet despite being aware of the benefits of OER. An enthusiastic lecturer with limited English proficiency will feel discouraged when trying to read and make use of OER in English. Heads of a university with full autonomy in implementing its strategies and activities are not motivated to adopt and develop OER if they are not aware of OER and their benefits. In this research, the lack of awareness and understanding about OER and their impact on key stakeholders in the HEOs was the challenge most frequently raised by the interviewees. This factor is associated with the factor Access to information about OER and IOER development, but it is included as a socio-cultural factor for the purpose of conceptual framework development.

The majority of participants in this study stated that the advocacy of stakeholders and the acceptance of the change by users are direct determinants of the success of educational change. Despite the benefits that OER can bring to education, if stakeholders are unable to perceive these advantages and the need to use OER, it is less likely that the development of IOER will get support from the community. Fourteen participants argued that the indifference from stakeholders was mostly caused by their perception of OER and their impact on the education system of Vietnam. As pointed out by the leader of an IOER project at a private university in Haiphong: “OER can only exist and thrive when there are a large number of users; unfortunately, users in Vietnam have not yet recognised those benefits” (OL3). An IOER project leader explained that the problems his university are facing include users’ lack of awareness and knowledge of OER, and even if they know about OER, they do not know where and how to find them (OL1). As the mindset of individuals is formed through many influences, such as culture, experience or education, it is hard to change particular ways of thinking. In general, many Vietnamese have a mindset that prevents them from harnessing OER, according to seven participants. For example, some lecturers in Vietnam underestimate OER as they are free, and free means valueless to them. An IOER project leader explained his practical experience: “To users, OER mean free of charge. In Vietnam, people understand that free stuff is worthless; you get what you pay for!” (OL3).

The role of university administrators in the OER movement is vital as they are the policy and decision-makers, as indicated earlier. If the heads of an HEO have a high level of awareness about OER and their benefits, the OER movement in that HEO will have ample opportunities to thrive. For example, an educator from a private university in Hanoi indicated that the rectorate board members of his university are very proactive and open-minded in education innovation. To put student learning at the front, they always encourage lecturers in researching and adopting the latest innovations in education, such as incorporating OER into teaching activities. Therefore, he finds himself very motivated in localising and using OER (F1). However, only a few universities are in this position. Associated with the political issues, the informants reported that the indifference of university administrators resulting from insufficient awareness about OER is challenging the OER movement at other universities (UA1, LS2, LA3). An OER champion who works at a big public university in Hanoi concluded that: “The challenge of OER development currently is the apathy of involved stakeholders about OER, from the university principal to the librarians, the faculty and students” (C1).

Lecturers and users’ attitudes towards copyright are also problematic. OER provides users with at least five free and direct permissions to engage with the resources (the 5R activities): retain, reuse, revise, remix and redistribute, as the most fundamental characteristics (Wiley, n.d.). However, these rights are among the least concerns of the majority of users in Vietnam as they have limited conceptual knowledge about copyright law and what it means for access to various materials. This limitation was identified as a critical constraint to OER advocacy. In particular, users in Vietnam face difficulties in distinguishing between open-access, publicly-owned resources and OER, and are unable to perceive the benefits of open access, open licensing and open formatting. Many of them think that everything available on the Internet is publicly owned and can be freely used without crediting the author. All material types are the same to these users as they are not aware of copyright or IP rights. They have no reason, desire and intention to research and create OER as they perceive no difference between OER and other digital resources available on the Internet. This situation continues despite the fact that the ignorance of copyright has led to numerous copyright infringement cases in Vietnam.

When using resources from the Internet, lecturers do not care about copyright issues. That's the problem! Even many of them don't have the concept of copyright in their minds, they just use anything they got from the Internet. [...]. I think this will be the biggest challenge that teachers and students will face [when trying to develop OER]. (C1)

Another variable associated with socio-cultural characteristics in Vietnam highlighted by the interviewees was the capacity of OER stakeholders. As presented in Chapter 5 - Participants' Perceptions of OER and IOER Development, apart from an understanding of OER, IP rights and copyrights, users and producers need other skills and knowledge such as digital and information literacy and English proficiency to engage with OER. Lack of copyright knowledge, perhaps combined with limited information literacy, can lead to disadvantages in working and studying in general. For example, an IOER leader who is also a director of the library in his university has encountered an unexpected situation when publishing OER created by the lecturers on the Internet: the outside users paid to receive those OER from a third party instead of downloading and using them freely from the library website (OL1). As many potential users cannot distinguish between the different copyright status of materials, they see little benefit in OER and so lack the motivation to develop and use OER, thus presenting a critical challenge for OER advocates to overcome.

Different users have different expectations of educational materials. For example, undergraduate students and learners prefer complete resources like courses or textbooks while lecturers are probably interested in reusable learning objects such as multimedia simulations, case studies or video clips to include in their lectures. Graduate students will pay more attention to research-supported materials such as open data or academic publications than to lecture slides. Different users thus need different levels of skills to search for and make use of OER to suit their purposes. Half of the interviewees considered that limited digital and information skills are holding users back from harnessing OER efficiently. In comparison with other developing countries, the basic computer skills of the majority of Vietnamese people are relatively good; however, the lack of capacity for locating, evaluating, localising and publishing OER is a hurdle. A library staff member from a private university in Ho Chi Minh City witnessed that many

of the masters' level students at her university were confused when evaluating the information sources they found from the Internet:

Usually, they use Google to search for the materials as they will get more results. However, once found, they do not understand the characteristics of those materials. What is the copyright behind that? Are they valid? Are they reliable? (LS2)

Living in the information age, the ability to perceive the need for, find and use information becomes a critical skill. "Skills in using information are crucial because the more open the environment with more information flows available, the more information noise that users have to deal with. [...]. Open educational resource is a type of information, it may cause noise" (C2).

Although the published OER are expected to be in Vietnamese, proficiency in English is a necessity if effective use is to be made of existing materials. An IOER leader from a foreign university in Ho Chi Minh City argued that the process of developing the IOER in his university is less complicated than in other universities thanks to its students' good English proficiency (OL2). However, he previously worked at a key public university and he considered that language will be a challenge to not only students but also teachers in using OER at other universities. Indeed, low English competence is a disadvantage in harnessing OER as most of the currently available OER are in English. A champion participant added:

The foreign language ability of Vietnamese teachers and students is quite poor. In the past, MIT used to provide us with thousands of open courses, but our users couldn't use them because they could not understand. What a waste! I think it is a barrier that users in Vietnam face when using original OER from oversea. (C1)

As an educator, a certain level of fluency in English is also required to understand and localise these materials.

The first obstacle is the lack of awareness of OER; those who already know and want to use it can face technological barriers, and maybe when they pass the

technology problems then they may find language difficulties [...]. They can use Google Translate, but their knowledge of the language is also crucial as they cannot just use Google Translate to convert the material's language to Vietnamese and then publish or share it, they need to proofread and revise the content. (OL2)

This study also found that differences in the characteristics of communities from different types of universities in Vietnam lead to different attitudes towards the change program. Several interviewees indicated that public university communities in Vietnam are apathetic and hesitant in developing IOERs. The three developed (or development-in-progress) IOERs investigated in this study belong to one foreign-owned university, one foreign-backed university and one private university in Vietnam respectively. To some extent, these issues appeared to be connected to the type of educational institution and the degree of autonomy of decision making allowed. As explained in the economic and political factors sections, it seems that HEOs with higher levels of autonomy, like private and foreign universities in Vietnam, are more open to innovation (having a problem-solving orientation) than public ones. They thus have more flexibility and authority in using and creating OER and developing IOERs. This study also concluded that, in addition to the types of educational establishment, the characteristics of communities in HEOs might also be impacted by the HEOs' geographical locations or their priorities in training and research. For example, students in rural and remote locations may have less access to education opportunities, services, and resources than metropolitan students. Students and educators from a university specialising in languages are expected to have better foreign language proficiency than those from technical schools.

As noted in the political factors section, the Vietnamese government leads the country through the legal system, policies and guidelines; the government thus plays a vital role in most of the activities of Vietnam's organisations, especially HEOs. Insufficient awareness and knowledge of OER from government and agencies is another critical challenge that leads to difficulties such as lack of policy, support or funding to implement OER initiatives in Vietnam. This lack of concern from the government about the OER movement was noted by participants as a severe impediment to change. A

champion who is one of the Open Education Advisory Board members in Vietnam recalled:

We have invited many people from the government to the scientific seminars on OER held in Vietnam every time, but no one attended. [...]. While the UNESCO representative travelled from Thailand to attend our conferences in the past years once invited, people from our MOET did not show up. (OL2)

An IOER project leader at a foreign-backed university pointed out that:

In my opinion, the most important thing is the government's policy on these [OER]. So far Vietnam does not have any policy for implementing OER initiatives. [...]. There have been people in many conferences to speak up on this issue, but the government still has no specific policy. (OL1)

In this study, champions are identified as change agents. Their role is considered to be extremely important to the OER movement in Vietnam as they have the knowledge, passion, skills, relationships and influence to guide and coordinate the change effort. At least ten participants named the OER key champions of Vietnam during the interviews. An IOER leader was very enthusiastic to share: "There is a leading expert of OER in Vietnam, Mr A, I will introduce you to him (OL1)". Another IOER project leader revealed:

The OER movement [in Vietnam] began to flourish when Mr B [collaborating with many universities and organisations] organised an international workshop on OER and invited overseas experts to attend. After that, OER became more widely known. However, it was spread the most after the OER Roadshow [The OER @ University Roadshow Program], organised by Mr A and Mr B [collaborating with many universities and organisations]. It is this Roadshow that brings OER to every university and library across the country. Mr A had travelled to many places, coordinated with libraries and universities to conduct workshops introducing OER to everyone. This Roadshow had a powerful impact [on the education communities] as it was not only about introducing OER, but it also included training with detailed instructions for people on how to create their own OER. (OL2)

Notwithstanding the challenges, the OER movement in Vietnam has the prospect of growing vigorously in the future thanks to proactive champions who have dedicated much effort to OER activities. Moreover, with an increase in the number of university lecturers with overseas training and qualifications, it is expected that their awareness of and understanding about the open movement, copyright, and IP rights will also help to improve the OER movement in Vietnam (OL3, LA4).

In short, the characteristics of stakeholders affect their attitudes towards an event, in this study the development of IOERs. The empirical findings in this study corroborate the theoretical framework, demonstrating that the socio-cultural factors are among the most influential factors on the change process.

6.6 Pedagogical Factors

Pedagogical factors are the set of determinants that affect IOER project development relating to teaching and learning, such as styles, approaches, cultures, habits and practices. Different from those covered by the initial theoretical framework, this study discovered that pedagogical matters such as the characteristics of teaching and learning, the collaboration culture of higher education stakeholders in teaching and learning, and the extent of flexibility and independence of users in adopting OER for teaching and learning activities also contribute to hindering educational change in Vietnam. Many of the pedagogical issues proposed by the interviewees are closely associated with other factors, especially the socio-cultural and political factors explained in previous sections. For example, as a result of insufficient awareness, understanding of and concern for OER from the community and government discussed in the previous sections, the lack of recognition, policies, support and guidelines about OER lead to multiple practical challenges in developing IOERs, such as the unwillingness of educators to adopt OER in teaching practices, the hesitancy of universities to develop IOERs, or difficulties in ensuring the quality of institutional OER. Indeed, eleven respondents proposed that the lack of incentives and authority is a reason that contributes to discouraging stakeholders, especially lecturers in using and creating OER.

The instructors in my university don't have strong motivation to create OER, so the library must be proactive in the first stage. We actively look for and approach educators who will potentially develop teaching materials, books or textbooks; then we prepare small funding to support them. While they compose and edit, the library will assist them with online publishing. (OL2)

Lecturers at all universities in Vietnam have two compulsory and essential tasks, teaching and engaging in scientific research, which are clearly defined in the decisions and circulars issued by the government such as the Regulation on the working regime for university lecturers issued with Decision No. 64/2008/QĐ -BGĐĐT on November 28, 2008 by the Minister of Education and Training (Vietnam Government Portal, 2008). While lecturers in Vietnam invest time and effort in teaching, not all of them are interested in researching and publishing due to a variety of reasons such as lack of time or facilities to conduct research. Besides, up to now, there has been no sanctions on those who do not research, so many lecturers without any research output are still being employed at universities. Scientific research in Vietnam takes a lot of time and effort, but earnings from it are often meagre. The primary source of income for university lecturers currently comes mostly from teaching. Depending on attributes like seniority, qualifications, degrees, experience, and titles, university lecturers are classified into different categories and have different salary calculation formulas. In general, they are paid a standardised salary, but it is not high in comparison to other careers. As a consequence, they often teach more classes or units when given the opportunity to earn more money. Many of the lecturers from public universities also work at private universities as visiting lecturers because the remuneration for each lesson period there is higher. The nature of this issue is related to economic and political factors; however, it is discussed here as it significantly influences the current teaching and learning practices.

Institutionally, no policy about OER from top administrators means no official recognition, guidelines, support, or reward for creating and developing OER. In Decision No. 64/2008/QĐ -BGĐĐT, the teaching duties of lecturers are clearly defined, including developing teaching plans, course outlines, lectures and necessary materials for teaching, as well as instructing students on study and research skills. However, with the relatively low salary rate of lecturers in Vietnam it is hard for lecturers to find the

motivation to learn about OER and create them. A university board member concluded: “Developing OER is really difficult in Vietnam because, in my opinion, it is all about our income. We have not yet reached the level where we no longer care about the economic issues” (UA1). The unwillingness to lose income from copyright materials is another problem that prevents lecturers, especially senior ones, from harnessing and developing OER. A champion noted that some of the lecturers are willing to share their works as OER while others want to retain ownership of copyright to reprint new editions regularly (C1). This factor is also closely related to the economic factors discussed in the previous section. However, it is included in this category as its impacts on the willingness and time available of lecturers to prepare and develop teaching materials are being examined.

Many participants in this study believed that users from universities which have more freedom, flexibility or independence (in selecting or developing materials for their teaching and learning) would be more enthusiastic about engaging with the OER development project. The IOER leader from a foreign-owned university explained:

In my university [foreign university], the staff and lecturers have more independence than those from other schools [public universities] in Vietnam. People need to have a different approach to those stakeholders [from public universities in implementing OER development projects] as they need to get permission from their superiors to include OER in the curriculum. (OL2)

Closely associated with socio-cultural factors, the lack of familiarity with the culture of sharing IP, for example by waiving copyright and other related rights which is necessary in an OER environment, is causing hesitation for OER users and creators in Vietnam. A library staff member pointed out that “In Vietnam, educators are very afraid of ‘opening’ [showing] the content of their works to others; so persuading them to ‘open’ their works is also a problem. [...]. They are not used to such [a sharing] culture” (LS2). Because of educational cultures and habits, the majority of students and lecturers in Vietnam tend to keep their IP protected and closed to the public. This has led to the lack of a comprehensive academic database for similarity checking, especially for text, and thus, plagiarism and IP infringements are hard to detect (C2). The fear of being plagiarised, or of being discovered to have deliberately plagiarised, is the reason why

users in Vietnam are uncomfortable to “open” their written or published works, as proposed by eleven participants. One of the librarians gave an example:

There was a university library that had two identical dissertations located next to each other on the shelf with the same classification numbers and no one had noticed them. The first librarian catalogued the first book, and after a few years, the second staff member did the second one, so they didn’t recognise them. In the end, a reader identified the similarity when reading both of them. (LA3)

The head of the library and information centre from a public university in Ho Chi Minh City emphasised that fear of losing face was the primary reason explaining the apathy of users to the OER movement in Vietnam:

Vietnamese people’s conception [about sharing their IP] is quite “closed”; they don’t want to share [open] as they are afraid people will have the chance to notice the similarities between theirs and the other works. [...]. The fear is the main problem, so they don’t dare to “open” them [their works] out. (LA4)

This study also found that the cultures of learning and teaching in Vietnam such as educators’ teaching styles, approaches and beliefs, students’ learning habits and practices, and the role of the university library in teaching and learning activities also influence the OER movement heavily. Similar to findings published in the literature, the teacher-centred instruction prevalent in Vietnam is restraining the proactivity, curiosity and exploration of students. To get a satisfactory mark, a student has much less obligation to do more research or look for more sources in addition to the resources given by the instructors.

These attitudes may be changing. In recognition of the fact that, living in the information age, the ability to perceive, find and use information becomes a critical skill, the rector of a public university in Can Tho emphasised the importance of encouraging students’ curiosity and research, stating:

It’s the responsibility of the lecturers in developing the curriculum that requires students to search for and use more learning resources. Our university’s training

program is designed to follow that direction which aims to reduce the time in class and give students more time for self-studying. (UA2)

The head of the library of a public university in Ho Chi Minh City also claimed that, although the student-centred teaching approach has been widely promoted in Vietnam's higher education for years, students are still very passive and dependant in learning and researching. They rely very much on lecturers' advice and instruction. They need more time and practice to change their habits and behaviours. He asserted:

Before coming here, I worked at X university library [a foreign-owned university] for a short time. I realised the learning and teaching styles of the two universities are very different. Over there, students must go to the library and look for references for their assignments. Students here [from this public university], on the other hand, only need to learn from the given textbooks. [...]. They have no independence and desire to learn beyond that. (LA4)

As presented in Chapter 5 - Participants' Perceptions of OER and IOER Development, university libraries were deemed to be in the best position for developing IOERs in Vietnam by all participants in this study. However, this study found that the lack of recognition by stakeholders of the essential role of libraries in learning and teaching is impeding the OER movement at Vietnam's universities. When asked about the expected difficulties that a library will face when implementing the IOER project, a deputy head of a department from a public university in Vietnam argued that "If the university's heads do not grant the library with the authority to take the initiative, compelling other units [within the university] to coordinate, it would be very difficult [to develop IOER]" (FA1).

In addition, because of teaching and learning cultures and habits that focus on the lecturers, together with the limited understanding of IP rights and copyright of the community, the role of university libraries in Vietnam is often unclear to users. In particular, many lecturers in that country are in the habit of duplicating copyright-protected textbooks at the local photocopy and print shops and then disseminating the copies to students. Students are not required to search for more reference books or materials in order to pass the subjects. Students, especially undergraduate students, thus don't need to use the library's resources and services to study or research. Many of

them may go to the university library only a few times during their study. An IOER leader pointed out: “In a university, the library has no political influence. Requests from the library usually take a very long time to be addressed. A library is a must-have place in a university, but it does not provide much practical value” (OL3). Library staff are not motivated to create these IOERs due to lack of incentive and authority, despite acknowledging the potential of OER. A library staff member commented: “The librarians who want to do these things [developing IOERs] must have a very big passion with OER as they will need to spend a lot of time and effort on it” (LS2).

The facts that OER initiatives at HEOs in Vietnam are mostly spontaneous and not many have yet to be successfully developed have led to a lack of confidence and unwillingness of higher education communities to engage with OER and IOER development (C1). Furthermore, the lack of OER localised into the Vietnamese language and context, and the unpopularity of VOER, the national OER programme, are hindering promotion of the OER movement. These issues are relevant to the socio-cultural factors discussed in the previous section. When asked about the VOER program, an IOER leader commented:

I know it, but as far as I can see in Vietnam, it’s not widely used. When I came [to the VOER website] to check it out, it was unclear and not very easy to use. Secondly, it seems that they developed [the VOER program] following the RICE University model, meaning that they did not develop it into a complete textbook, but they created separate pieces. To me, as a user, I doubt their reliability, consistency and completeness. (OL2)

Such views may, however, depend on the type of stakeholder in question. As explained earlier, different users have different expectations of educational materials and so of what should be available as OER. Thus, the comment above may not necessarily reflect poor quality, but a failure to properly target or cater for the needs of different stakeholders.

Contributing to the development of the modified conceptual framework, the results of this study show that the pedagogical concerns and practices in Vietnam’s HEOs exert a significant influence on the OER movement in this country. This investigation also indicates that many of the pedagogical factors are intertwined with other factors.

6.7 Legal Factors

Legal factors in this research include current legislation, regulations and related issues that affect HEOs and stakeholders when developing IOERs. In addition to the other factors covered by the theoretical framework, the results of this study demonstrated that legal aspects also have significant impacts on the educational change process. Activities of individuals and organisations in Vietnam are performed under state surveillance through Vietnam's legal system. As an educational change, IOER development activities in Vietnam are also heavily influenced by legal factors.

As the concept of OER was formulated in 2002, many legal systems of numerous countries – Vietnam, for example – have not yet accommodated its existence. Although Vietnam's IP legislation is considered to be quite comprehensive, following international standards in covering every aspect of the protection of IP, there are still many copyright ambiguities relating to copyright ownership of educational resources. For example, a lecturer at a public university mentioned that as Vietnam has no clear regulations on the legality of open licenses, educators hesitate to use and create OER (F2). Indeed, there is a lack of legislation that regulates and recognises the legal validity of the licenses of open source initiatives such as the GNU General Public License (GPL) or Creative Commons licenses (CC) in Vietnam. As a result, users in Vietnam are hesitant to adopt OER in teaching and learning. Recently, Decree No.47/2020/NĐ-CP on the management, connection and sharing the digital data of state agencies, issued by the government on April 9, 2020, makes mention of regulations on Open Data of State Agencies in Section Three. However, no provision in this decree addresses open licenses or open licensing, which is usually clearly stated when referring to open data in documents, on open data portals or websites of governments in other countries.

The situation is further complicated if the work includes third-party components. Another issue associated with copyright that is prevalent in Vietnam concerns materials created by a member of staff or students at an HEO within the course of their employment or training. In many universities, apart from lecturers, researchers and students also contribute to the institutional repository. For example, in HEOs which prioritise scientific research, the researchers and fellows will be those who are prominent in publishing their research outcomes. Likewise, in universities that

specialise in art and design, students' assignments, projects and theses are a good source of educational materials. In such cases, it is not clear if copyright belongs to the employer (university) or the creator. This lack of clarity in copyright policy and law was noted as an issue by seven participants.

Due to the large number of bodies involved and their interconnectedness, law enforcement in Vietnam generally is complicated. A champion explained why legal issues are among the general challenges to the open movement in Vietnam:

In Vietnam, the laws are interrelated. For example, the Intellectual Property Law [in Vietnam] is very unfair because it treats all software as closed-source [with no regulation for using, developing and distributing free and open-source software]; it thus needs to be fixed. But if the Law of Intellectual Property is changed, the Law on Publication, Information Technology Law, Law on Science and Technology, and many other laws also need to be amended accordingly. Otherwise, the change will create gaps everywhere [in the legal system]. (C3)

In the education sector in Vietnam, the Education Law, the Law on Publication and the Law on Intellectual Property Rights (IPRs) are among the most influential; however, the inconsistencies between these laws, together with the low level of penalties and compensation, has led to many copyright infringement cases in Vietnam. As a result, universities are reluctant to act on copyright infringement unless it damages their reputation. An IOER leader revealed an unexpected infringement case in the past when he was blamed by another university for giving public access to his university's institutional repository so that users could notice the copyright infringements by students at that university (OL3).

The fear of losing ownership of the resource originating from the limited knowledge of open licences and copyright in general and more importantly, the absence of government regulation and policy about the validity of open licences, has led to indecision by stakeholders about supporting the OER movement. An IOER project director indicated why a lecturer in his university hesitated to engage with OER: "Because there is currently a gap in the law [no OER-related regulations], we are helpless now, later if there is a clear legal charter, then it is ok, we will follow [the OER

movement]” (OL3). A faculty member added: “Currently, we are building our resources but to ‘open’ them, the IP considerations must be resolved. Since our [Vietnam’s] legislation is unclear [about the validity of open licences and copyright ownership], the university’s board of rectors really do not dare to ‘open’ them” (F2).

Because of the legal issues noted above, universities in Vietnam are more familiar with the open-access concept than with OER. Numerous universities are taking steps to grant access to their institutional repositories; however, such access is still limited to specified types of users, for example, those who have registered user accounts with the library or are currently enrolled students:

Our school [library] also uses DSpace [a free and open-source repository software] to build the institutional repository. However, it [the access to the repository] is being limited to users from this university. We have not yet opened to the [users] outside [this university]. (F2)

The difficulties are not about technology but copyrighting. We [library staff] have to negotiate with the author about copyright issues. If it can’t be dealt with [an author is unwilling to publish the materials as OER], then we have to create limits [in access to the repository] for users. (UA2)

To sum up, the findings of this research demonstrate that legal factors also have significant impacts on OER adoption, creation and distribution in Vietnam, not only those covered by the initial theoretical framework.

6.8 Technological and Infrastructure Factors

Technological and infrastructure factors are influences impacting the development of an IOER development project, relating to the existence, availability, and development of technology used. Unlike most other types of educational changes, implementing the IOER development project is heavily influenced by technological factors. As explained in Chapter 2 – Literature Review and Analysis, tools and software are the second component of an open educational resource, together with the learning content and implementation resources. Depending on the scale and goals of the development

program in various HEOs, technological factors will have different impacts on the development process. For example, if an HEO wishes to develop a large OER repository for the entire Vietnamese community, or even users from other countries to access and utilise, the development project would need considerable investment in ICT infrastructure and systems such as networks, operating systems and storage. The investment in ICT infrastructure and systems requires time, human resources and funding.

As OER are primarily digital and require digital tools, software and systems to operate, technological factors contribute significantly to the success of any OER initiative. The findings of this study found that, besides the factors outlined in the initial theoretical framework, technological and ICT infrastructure obstacles are affecting and even impeding the development of OER and IOERs in Vietnam. Technology issues such as low bandwidth, obsolete technologies, and limited access to ICT facilities and hosting services were pointed out by fourteen of twenty participants in this research. In particular, one champion proposed that some small universities and college in remote areas in Vietnam may find more technological difficulties when developing IOERs (C2). This champion also explained that while a university in Vietnam could develop an IOER to serve its students and staff, they cannot afford to serve the whole country or the world.

The core characteristics of OER are open access, open format, open license and open software (Schaffert & Geser, 2008). Participants in this study revealed that some universities had a high degree of autonomy and a problem-solving orientation, with leaders who understand the value of free and open-source software and have already implemented open source on their campuses, presenting an excellent opportunity for the OER movement to thrive in Vietnam (F1, LA2, LA3, OL3 & UA1). It would be ideal if all the tools used for the creation, development, collaboration, delivery, search and use of open learning content could be open-source; however, most respondents thought that currently it is challenging to do that in the context of Vietnam. The domination of commercial software in Vietnam identified in this study is a critical issue hindering the use of OER and has not been previously noted in the literature. Nine of the interviewees claimed that it is challenging to replace commercial software and systems with open-source ones in Vietnam and the apathy of users towards free and

open-source software is one of the critical obstacles. This issue is closely related to the socio-cultural factors explained in the previous section. A lecturer who is also library staff from a public university in Can Tho recalled how users reacted to the free and open-source software installed at his university library's computers:

In the past, we also installed open-source software operating systems like Ubuntu for the computers in our learning resource centre, [...] but not anymore. In fact, the Window operating system is ingrained in everyone's minds, so when we changed [to the new type], users showed less interest. (F2)

There are conflicts among participants' conceptions regarding the use of open software and systems to develop and produce OER. While the champions advocated for "genuine" OER, upholding all four open aspects of OER equally (open access, open format, open license and open software), several participants, especially the IOER leaders, had other priorities. The use of open software and system are their least favoured aspect as they argued that they still can create and publish OER without using open solutions. One champion stated that an educational resource is designated as an open educational resource when it does not face any financial, legal and technical barriers impeding its access, use and distribution: "If any technological tool is used, it must be open-source" (C3). When asked about the opportunity of adopting completely open solutions in the development and production of OER, an IOER leader at a foreign-owned university had a different point of view:

Very low likelihood. [...]. In my opinion, whether the software is open or not, it does not really affect the success of the OER repository development project. What matters is the quality of products and the level of sharing [the rights that we give to users]. (OL2)

This perception could be a critical issue, potentially affecting sustainability. As mentioned earlier, if commercial software and systems are utilised in the project, the implementers may not be able to secure the sustainability of the project over time as they may need a growing budget for relicensing programs. Although the use of open-source software typically requires an initial investment and a reliable arrangement for ongoing maintenance, the costs are generally significantly less than for commercial software and systems, and annual licence fees in particular.

As noted earlier, participants of this research recommended that university libraries are in the best position to implement IOERs in Vietnamese HEOs. However, to use free and open-source software, libraries need to have qualified people on their staff to customise the software to meet their needs. Without a policy from heads of the HEOs, library managers and staff have no authority, funding and support to implement open-source in their development projects. Asked about technological problems, an IOER leader explained his practical experience in these terms:

Developing OER depends on the policy, economic and technical conditions of each university and country, but in Vietnam, it is especially difficult [...]. If we want to make it technically open, we need a comprehensive policy from the university heads. (OL2)

Nevertheless, the establishment of many open-source software companies in Vietnam recently can be considered a facilitating factor for the OER movement in general (C1). The role of these companies is significant in consulting and developing technology platforms and open standards for creating, storing, evaluating, exploiting and sharing OER.

Overall, in this research setting, technological factors emerge as influences on educational change that are beyond the terms of the initial theoretical framework. The adoption of open technologies in OER projects will take time, money and effort from stakeholders. This research also highlights that, in Vietnam, technological issues are closely connected with political and economic circumstances. They are also affected by the characteristics of the change project such as quality and scale. Again, this study shows that the factors that influence the change are often closely interconnected, and they complement each other.

6.9 Chapter Summary

This chapter presents the factors affecting the development of IOERs in Vietnam identified in the data analysis. The factors and categories of factor identified in this chapter are presented in Table 8. There was general agreement among stakeholders that there are various challenges that universities face when trying to embrace the OER

movement. Consistent with the theoretical framework, findings of this research show that, in the Vietnamese context studied, the development of IOERs is affected by five factors, namely: (1) the characteristics of the IOER development project; (2) access to information about the IOER development project; (3) economic factors; (4) political factors; and (5) socio-cultural factors. Adding to the initial theoretical framework, this study identified other contextual factors which influence higher education stakeholders in harnessing OER and developing IOERs: (6) pedagogical factors; (7) legal factors; and (8) technological and infrastructure factors.

Among the difficulties proposed by respondents, the lack of awareness and advocacy from stakeholders about open educational resources and its concept is the most frequently mentioned. This study also found that the factors affecting the IOER development in Vietnam are associated with and complement each other. The type of educational establishment was found to have a significant influence on the potential of OER repositories development at universities in Vietnam.

Table 8: Factors and categories of factor affecting IOERs development found from data analysis

Categories of factor	Factors found in this research context
Characteristics of the IOER development project	- The characteristics of the IOER development project
Access to information about the IOER development project	- The level of access to information about the IOER development project
Economic factors	- Funding for or financial concerns regarding the IOER development project - The extent of institutional autonomy given relating to funding for implementing the IOER development project

<p>Political factors</p>	<ul style="list-style-type: none"> - The availability, relevance and efficiency of policies and guidelines regarding OER adoption and IOER development from the government and universities - The level of clarity in universities' policies on intellectual property rights and copyright - The extent of institutional autonomy given relating to scope of action and policy making
<p>Socio-cultural factors</p>	<ul style="list-style-type: none"> - Internal and external communities of HEOs, their characteristics, capacity and attitudes towards OER adoption and IOER development - Facts, traditions, habits, activities, norms or situations that may influence the internal and external communities' thoughts, feelings, and advocacy towards OER adoption and IOER development - The presence of proactive OER champions or change agents
<p>Pedagogical factors</p>	<ul style="list-style-type: none"> - Teaching and learning characteristics and practices - The extent of freedom, flexibility and independence of users in adopting OER for teaching and learning activities - Stakeholders' perceived importance of the university library - The existence and popularity of OER in Vietnamese and operated IOERs
<p>Legal factors</p>	<ul style="list-style-type: none"> - The recognition of OER open licenses in the national legal system - The level of clarity, consistency and enforcement of the national legal system

	<ul style="list-style-type: none"> - The level of familiarity of stakeholders with open education, OER, sharing knowledge and waiving copyright
Technological and infrastructure factors	<ul style="list-style-type: none"> - The availability of policy, funding and human resources to ensure the availability and sustainability of appropriate technology and infrastructure for developing and operating the IOER - The extent of understanding of stakeholders, especially those in leadership roles, regarding the potential of using free and open-source software and systems

CHAPTER 7 - DISCUSSION

Open Educational Resources (OER) represent an emergent movement that is re-shaping learning and teaching in higher education worldwide.

Bossu, Brown and Bull (2012, p.1)

7.1 Introduction

The main goals of this research were to ascertain how HEOs are approaching their IOERs development, identify the stakeholders involved in the development, and explain the factors affecting IOER development, adopting both components (the change process and factors affecting the change) of Fullan's Educational Change theory (2007) to understand, examine and validate the research findings. The data collected was analysed in Chapters Five and Six. Of the interviewees, the champions and IOER leaders provided deeper and richer information than others, as expected. This chapter employs a reflective stance by reviewing the five themes and their subthemes articulated in the two previous chapters and identifying some associated issues. These issues are then compared with the broader context of the literature and explained from the researcher's perspective. A modified conceptual framework of IOER-related factors, based on the initial theoretical framework, data analysis and discussion, is then proposed to guide stakeholders in Vietnam in embracing the OER movement and developing IOERs at their universities.

This chapter first discusses the benefits, as perceived by participants, of OER to higher education in Vietnam, in Section 7.2. In Section 7.3, the IOER development process is examined again. The concerns that arose regarding the identification of campus stakeholders involved in IOER development are also discussed in this section. In Section 7.4, based on the interviews, documentary evidence and literature, findings related to factors affecting IOER development in Vietnam are examined. Findings related to the knowledge and skills needed to engage with OER are also discussed. Finally, in Section 7.5, a conceptual framework of IOER-related factors is proposed,

based on the research findings and discussion. Chapter 7 - Discussion also lays the ground for the consideration of implications and future research in the next chapter.

7.2 Participants' Perceived Benefits of OER

Since 2000, there has been a large volume of published studies (such as OECD 2007; Hodgkinson-Williams, 2010; Veletsianos & Kimmons, 2012; McGreal, 2019) presenting the potential and realised benefits of OER in different nations and contexts, and at different educational levels. These studies often indicate that the production, use and reuse of OER lead to multiple direct and indirect positive impacts on various stakeholders. Most of the benefits proposed by participants in this study are consistent with the literature. However, the researcher envisages that the challenges currently faced by the OER movement in Vietnam, as identified by the interviewees, may possibly hinder stakeholders from perceiving these advantages. This section further examines some points that emerged during the data analysis. The researcher also proposes some other potential benefits to higher education in Vietnam provided by the OER movement.

7.2.1 Potential short-term benefits of OER

Although all of the open characteristics of OER, namely open access, open software, open format and open license, are believed by the respondents to provide associated benefits to education, the advantages from open access seem to outweigh the others in the context of Vietnam.

Benefits from the Open Access and Open Software Characteristics of OER

The most frequently mentioned short-term benefit of OER from the informants is its cost-related advantages in purchasing instructional and learning materials. The interviewees' views are aligned with previous studies (such as Fischer et al., 2015; Jhangiani et al., 2016; McGreal, 2019; Affouneh & Khlaif, 2020) and especially with the definition of OER as “digitised materials offered freely and openly for educators, students and self-learners to use and reuse for teaching, learning and research” (OECD, 2007, p. 30). However, while it is obvious that OER are available for free, numerous

users in Vietnam might not be motivated to learn more about them due to the copyright infringement situation in this country, as discussed in earlier chapters. In Vietnam, not many educators and students purchase textbooks but instead, they duplicate and disseminate copyrighted books. This stems from the limited knowledge and awareness about copyright, open licensing and fair use on the part of most students, teachers and learners. Moreover, the tuition for public universities and colleges in Vietnam is heavily subsidised by the government. Therefore the costs of higher education in Vietnam to most students are not as high as in many other countries. Users from Vietnam, students in particular, may, therefore, underestimate the cost-related benefits of OER because of those facts. For OER producers and universities in general, the cost advantages of OER are probably more evident. OER can be published more promptly than print-based resources, which may result in economic advantages for both creators and universities.

Given the fact that the lack of instructional and learning materials is an influential factor that constrains educational development, especially higher education in Vietnam (Bui, 2015; Do, 2016; Do et al., 2019), the introduction and adoption of OER should open the gateway for educators, students and learners in Vietnam to wider sources of knowledge, thanks mainly to the accessibility of OER. The access advantages of OER have been demonstrated through the operation of MIT OCW, which has been visited by 210 million individuals from about 239 countries and territories since its launch in 2001 (MIT OpenCourseWare, 2020). The paradox is that many students in Vietnam might not consider “access to resources” a big motivation to embrace the OER movement due to the prevailing teaching styles and approaches, as well as students’ learning practices and habits. As explained previously, teacher-centred instruction is dominant in Vietnam and can limit the proactivity, curiosity and exploration of students, particularly undergraduate students. They have less motivation to undertake additional research or look for learning resources other than those provided by their instructors to get a good mark. However, in the long run, the production, use and reuse of OER in HEOs in Vietnam will probably result in innovations in teaching and learning approaches. When users have more choice of resources, they are able to enrich and enhance their teaching or learning materials in terms of quality and quantity; their styles and approaches will be improved accordingly. Moreover, as the resources are visible and accessible by everyone, OEPs also contribute to promoting academic integrity and

transparency in teaching, learning and especially research in Vietnam. This potential of OER has been noted in previous studies (such as Lesko, 2013; Affouneh & Khlaif, 2020). In respect of the quality of OER, the beliefs of many interviewees are consistent with the literature (for example OECD, 2007; Hodgkinson-Williams, 2010; Judith & Bull, 2016), which propose that OER-based courses can lead to the assurance or even improvement of the quality of educational resources. For example, it has been argued by D'Antoni (2007, p.5) that educators may have an incentive to produce good quality works as they are accessible by everyone. He explained: "If you have a colleague who has excellent course materials put up on the web, and you only have a two page course outline, you may be encouraged to do a little more".

In our ever-changing world, people always have to learn, grow, and develop deliberately to achieve and maintain success. Through learning people can secure employment, develop their professional standing and receive promotions and better remuneration at work. Formal education and the resulting qualifications are undoubtedly important; however, people cannot always engage in formal education. After graduation, they have to learn outside of formal schooling. The introduction of OER may help them to achieve their lifelong learning goals. For self-learners, independent learners or non-traditional learners in Vietnam who do not need a credential, OER may be more of value. In reality, 42 per cent of users of the MIT OCW, the world's largest OER initiative, were self-learners, and they have used the OCW for various purposes such as exploring interests outside of their professional field, planning for future study, or keeping current in the field (MIT OpenCourseWare, 2011). Indeed, the open aspects of OER empower lifelong learning and promote informal learning, which will lead to social development in general. It will therefore take time to comprehend the broader influences of OER.

Benefits from the Open Format Characteristic of OER

The open format characteristic, which allows creators to revise, remix the content and redistribute the derivatives, is the primary strength of OER. As OER can be published in the form of a full course, a lecture, a module, a case study or even just a quiz or a piece of writing, lecturers can easily customise OER components for a modular course or syllabi that suit their teaching purposes. In line with previous studies (such as

Daryono & Belawati, 2013; and Djohar et al., 2018), the interviewees in this research claimed that the modular structure of OER and their open format characteristic allow users to access, review and revise the content of the material promptly, which will bring time and energy savings to users.

Nevertheless, since anyone (not only lecturers) can adapt and republish the content, the quality of OER can be questioned. In the absence of policies, procedures or guidelines, several participants in this study doubted the quality of OER in Vietnam. This point of view is similar to some researchers in other countries (such as Almendro & Silveira, 2018). Therefore, in general, users will need to equip themselves with solid knowledge and skills to locate OER as well as to evaluate the quality, in terms of the accuracy, currency, and relevance of OER found on the Internet. Institutionally, it is necessary to propose and develop a quality assurance mechanism or framework to support the development and sustainable use of OER by establishing some guarantees about their applicability and quality. Internationally, many quality assurance frameworks and guidelines for OER have been developed in different contexts, such as the TIPS quality assurance framework (Kawachi, 2014) or the OERTrust Framework (Almendro & Silveira, 2018), and universities in Vietnam can refer to these.

As explained in Chapter 5 - Participants' Perceptions of OER and IOER Development, a respondent of this research believed that the open aspects of OER could provide a notable benefit to users, that is, encouraging their creativity and development. Although this belief needs more time and practice to be verified in Vietnam, researchers in other countries such as Hong Kong, Indonesia and Thailand have concluded that OEPs can lead to the development of critical and creative thinking skills (Yuen & Wong, 2013; Daryono & Belawati, 2013; Amornrit, 2019). Several informants of this research stated that OER help to diversify teaching, researching and learning material. This view is similar to the literature. For example, in a case study on South African higher education institutions, Lesko (2013, p.110) revealed that one-fourth of the informants declared that they have more teaching content as a result of using OER or OCW. Many respondents of this research also believed that the open aspects of OER, especially open access and format, can help to promote and improve social networking via collaboration and co-creation in teaching and learning; this aligns with the literature (for example, Hegarty, 2015; Affounh & Khlaif, 2020). As a result, practices that support the

production, use and reuse of OER in HEOs would also help to foster a knowledge sharing culture within an organisation or country. In Vietnam, this advantage of OER is significant: as noted previously, people in Vietnam are not familiar with sharing or “opening” their intellectual properties to the public.

Benefits from the Open License Characteristic of OER

With open licenses, users are legally allowed to modify and adapt the original work and then redistribute it. Participants of this research understood that the open aspects of OER provide resources with the ability to stay up to date with recent developments in their field, consistent with previous studies (such as Yuen & Wong, 2013; Daryono & Belawati, 2013).

As noted in the previous chapter, two participants in this study recommended that the open license characteristic of OER makes its copyright explicit and clear to users. The degree of openness of an open educational resource depends on the type of license granted, and free access is a minimum condition of an open educational resource. In Vietnam, engaging with OER may help raise awareness and improve understanding of copyright and IP rights of stakeholders, and as a result reduce copyright infringement.

7.2.2 The long-term impacts of OER

In the long term, the interviewees believed that OEPs would positively impact OER users, developers, universities, and higher education in Vietnam. Consistent with previous studies (such as Berti, 2018; Colvard et al., 2018; Affouneh & Khlaif, 2020), participants of this research advised that users could enhance their performance and satisfaction by engaging with OER in teaching and learning. Thanks to the open aspects of OER, it is believed by participants of this research that lecturers in Vietnam will be able to save time and money, be more creative in teaching and possibly improve their teaching materials and approach. Likewise, student users will have opportunities to access more educational resources, stimulate their curiosity, widen their knowledge, raise awareness of copyright and IP rights, and develop their self-learning skills. As a result, OER-based courses may lead to the improved performance and satisfaction of users in the context of Vietnam. These potential benefits are, in fact, used by champions

and advocates to promote the OER movement in Vietnam. Moreover, to learners in nations that do not have English as a primary language, such as Vietnam, OER are excellent free language learning resources. Although the English language is considered as a barrier in OER development and inclusiveness in Vietnam, participants in this study maintained that by engaging with OER, users can improve their English proficiency. Many studies in the literature propose a similar idea (such as McGreal, 2017; King et al., 2018).

The perceptions of participants interviewed in this investigation regarding an increase in the impact and reputation of OER creators are in agreement with the literature (for example, D'Antoni, 2007; Hodgkinson-Williams, 2010). However, it will need some time and practice to form a knowledge sharing culture or open culture in HEOs in Vietnam; users, especially educators, may then perceive this benefit of OER more explicitly. It is held by many researchers that OEPs could help educators to promote themselves and increase their renown. Consequently, the prestige of a university can be enhanced if it has many reputable and influential educators. A high-quality OER repository can also be used as a valuable means for marketing the HEO and its courses; thus, the IOER is considered a factor that facilitates the recruitment process at HEOs, aligning with previous studies (such as Weller et al., 2015; Affouneh & Khlaif, 2020).

As noted in Chapter 3 – Theory and Initial Theoretical Framework, three crucial dimensions of educational change are: new or revised materials and resources (materials); new teaching approaches (behaviours); and new values, beliefs and assumptions (beliefs) (Fullan, 2007). Fullan, in his theory of educational change (2007), specified that the “real change” will happen when all of these three dimensions are achieved. Officially introduced in Vietnam in 2005, OER are a new type of teaching material that require creative teaching approaches and strategies with a belief in the value of a knowledge-sharing culture. The interview results verified that educational change in this research setting involves Fullan's three dimensions: materials, behaviours and beliefs; and achieving change in stakeholders' beliefs is the most challenging. This point of view has been reported by other researchers (for instance, D'Antoni, 2007; Lesko, 2013; Affouneh & Khlaif, 2020), who also asserted that OEPs will lead to changes within the institution. Consequently, this study contends that the development of IOERs meets the criteria for educational change proposed by Fullan

(2007), and the study thus further contributes to the literature of educational change at the higher education level.

For the community, putting OER into practice will help to bridge the gap between formal, informal and non-formal education, contribute to inclusive education, and promote lifelong learning, and consequently social development in general. The suggested impacts, including promoting knowledge development, equality, social justice and reducing poverty, are aligned with some SDGs which were established at the United Nations Conference on Sustainable Development in Rio de Janeiro in 2012.

To sum up, from the interviews and previous research, there are some grounds to believe that practices that support the production, use and reuse of OER will benefit and improve higher education. In a long-term prospect, these direct benefits will potentially lead to broader and meaningful positive consequences for HEOs and society. Nevertheless, the potential of OER to Vietnam will never be realised without a critical mass of Vietnamese users utilising and producing OER.

7.3 The IOER Development Process and Campus Stakeholders

In this section the findings related to the IOER development process and the campus stakeholders involved are further discussed. Understanding the IOER development process is of significance for stakeholders, especially development project implementers; however, internationally, far too little is known about the development process of institutional or organisational OER repositories. This research, which employs the Educational Change theory (Fullan, 2007) to ascertain how HEOs in Vietnam are approaching the development of IOERs, is one of the first such studies. Regarding the internal stakeholders involved in IOER development, participants of this research pointed out four types of stakeholders in universities: project implementers, OER content producers and users, project facilitators, and university leaders. In Vietnam, the interviewees believed that university libraries are in the best position to implement IOER development projects, and that their role in the development project is vital. Much of the current literature (such as Salem Jr, 2017; Yano and Myers, 2019; Essmiller et al., 2020) also pays particular attention to the important, often leadership,

role of university libraries, librarians and information science specialists in the OER movement in various countries.

As articulated in Chapter 6 – Factors Affecting the Development of IOERs, the development of IOERs at HEOs in Vietnam is influenced by several variables. Different universities in Vietnam will have different approaches and strategies to maximise their strengths and potential as well as reduce the disadvantages and risks in developing IOERs. For example, the OER team (from the library) at RMIT University Vietnam are in charge of implementing the IOER development project. They have been actively carrying out various steps and activities as well as providing comprehensive assistance and support for users and other stakeholders in raising awareness, locating, using, creating, publishing and distributing OER (Do, 2019c). At Fulbright University Vietnam, the library staff primarily focus on assisting OER creators to publish their resources on the institutional FETP OCW platform (Truong, 2015). OER creators at the People’s Police Academy are responsible for publishing (uploading) OER on the system, the library only managing the institutional repository in general as well as making the OER accessible to the end-users as they do for other library resources (Do, 2019b). Although the IOER development process at different universities is varied, given the context of Vietnam, participants of this research proposed some primary steps that many universities in Vietnam can refer to when planning to develop OER repositories. This section is organised following the two phases of the IOER development process proposed in Chapter 5 - Participants’ Perceptions of OER and IOER Development: Initiation and Implementation. At each phase, the role of stakeholders is highlighted.

Initiation

The interviewees in this study considered that the Initiation phase is less complicated than the Implementation phase as fewer stakeholders are involved. The only step in this phase emphasised by the interviewees relates to developing a proposal and getting approval from decision-makers (in most cases the university leaders) to initiate the project. However, based on the limited awareness of most university administrators about OER, as stated earlier by many participants, getting approval can be complex. The researcher recommends that initiators will need to review the current state of the

institution, consider the feasibility of the initiative, and develop sound strategies before approaching university leaders to propose an OER initiative. Good preparation will lead to a better outcome. If the proposal for developing an IOER is promising and persuasive, the decision-makers will need to work with other parties to review the orientation of the government and other agencies towards OER, evaluate the budget and other resources that are available or required for project implementation activities, establish the scope and goals of the project, appoint implementers and facilitators, and frame related regulations or policies. In some cases, comprehensive due diligence will be beneficial.

When the proposal is approved, the development project can be commenced. The respondents believed that advocacy from central administration is important in this phase of the development project. Hence, universities that have visionary leaders with a problem-solving orientation and a substantial understanding of the open movement will have greater possibilities for successfully developing the IOER. However, as stated before, only a few universities in Vietnam are in this position. Figure 15 presents the recommended activities included in the Initiation Phase.

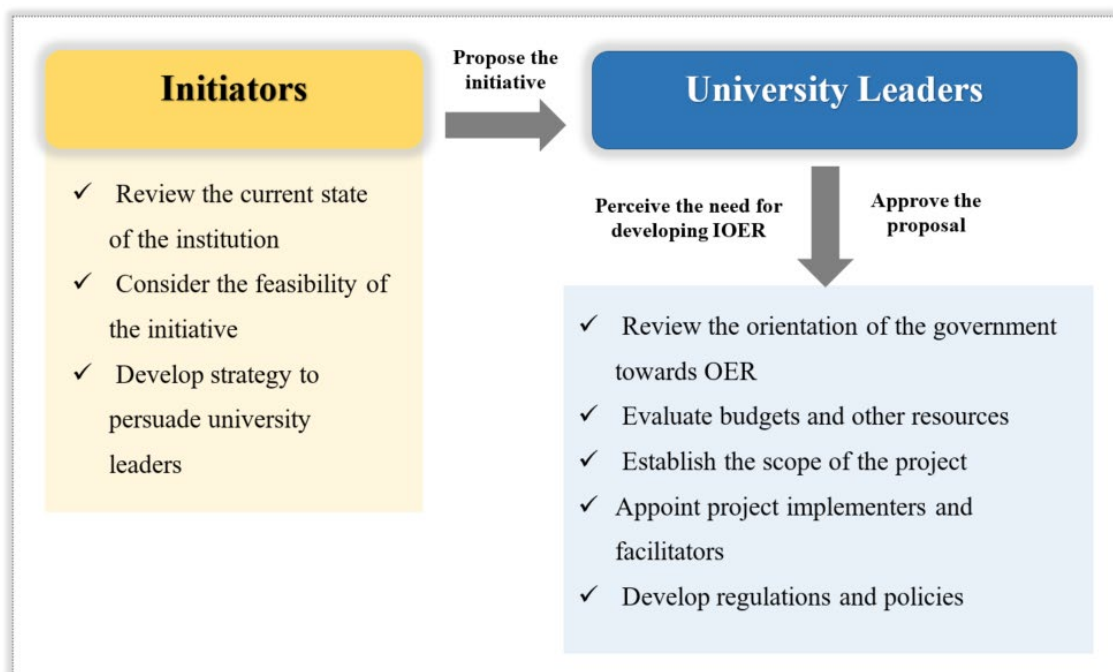


Figure 15: Recommended activities in the Initiation Phase

Implementation

In the Implementation phase, four key steps have been proposed by the participants: (1) IOER management, (2) OER awareness-raising, (3) OER use, and (4) IOER content creation. These steps are considered appropriate in the context of Vietnam, where many stakeholders, especially students, have a lack of awareness, knowledge and experience with OER (Do et al., 2019). In other countries where OER are already widespread, implementing an IOER development project may be more straightforward. In this phase, management is a significant step as it involves the process of reviewing, planning, and deploying and manipulating various resources, like human resources, technological resources and financial resources, to achieve the development project's goals. Due to various influencing variables (such as the availability of funding or proper policy for OER and IOER development), the project plan established in the Initiation phase is likely to be modified in the Implementation phase, reflecting Fullan's perspective (2007).

Depending on the characteristics of the community, the implementers or OER team need to develop appropriate strategies to introduce OER to users, and support them in discovering, using and creating OER. As indicated by the interviewees, OER are little used in Vietnam; hence, OER awareness-raising is an indispensable step. Once users know about OER and their potential, they will be able to recognise their needs and decide to harness OER, leading to stronger advocacy for repository development advocacy towards repository development. Given the challenges presented in Chapter 6 – Factors Affecting the Development of IOERs, in Vietnam a targeted approach for OER awareness-raising might be more successful and prove less costly than ad hoc approaches. An excellent example of this is provided by the step-by-step plan for the IOER development project at a foreign-owned university in Ho Chi Minh City, as noted in Chapter 5 - Participants' Perceptions of OER and IOER Development. The plan involves the library proactively approaching educators who intend to or have the potential to publish quality educational resources, and providing them with OER knowledge, support and rewards for publishing OER. The library staff will then help the authors to widely promote these educational products. These OER will act as models for others to refer to. Although the library will have to be proactive in searching

and assisting the authors in creating OER, in the end, open and free materials will be published and thereby help to introduce the OER concept to others.

After awareness-raising, providing users with opportunities to use quality OER and perceive their advantages is an effective strategy, as proposed by the IOER leaders interviewed. Once users know more about and have experience with OER, they will be more open to using and creating OER. At this phase, university libraries, as the project implementers, should play a leadership role. However, according to the advocates of OER interviewed in this research, the collaboration of stakeholders is critical to success, and this is consistent with the literature. It will be very helpful to the stakeholders if there are definite policy and incentive programs provided by university leaders to guide OER use and creation and IOER development. In addition to supporting OER creation, allowing users to utilise high-quality OER from overseas also contributes significantly to changing users' views about free and open resources. Therefore, leaders of the HEOs should also facilitate the localisation of high-quality OER into Vietnamese.

In 2017, Cox and Trotter developed an OER adoption pyramid framework presenting the factors affecting lecturers' adoption of OER, namely: (1) infrastructure access, (2) legal permission, (3) conceptual awareness, (4) technical capacity, (5) educational resource availability and (6) personal volition. Through an analysis of the interview transcripts and literature, the researcher found that, in the minds of interviewees, university leaders and libraries in Vietnam are the agents that can exert a significant impact on OER adoption within their institutions. It is evident that university libraries in Vietnam can assist with many factors in Cox and Trotter's framework. One is infrastructure access, such as providing access to computers or the Internet. They can also conduct consultations, workshops, and training to raise users' awareness and understanding of OER, as well as supporting users to consolidate their capacity in locating, using, creating, and distributing OER. In addition, libraries can identify and gather relevant and high-quality OER that suit different subjects or courses provided by their universities and then provide links or access to those resources to users. University leaders can assign or empower the library to carry out such activities. They also can develop and issue an OER-related institutional policy to encourage users to use and produce OER. This policy can directly influence OER users' decision to adopt OER in teaching, researching and learning.

Besides the tasks and activities proposed by participants in this study, the literature proposes additional tasks and activities that the university library can carry out to support the OER movement on campus. By way of example, VanScoy (2019) believed that library staff could play a leadership role in developing policy regarding OER use and development in their institution; they also can build rewards, recognition programs and awards for those who harness, produce or promote OER. However, the context of Vietnam is different. University libraries can at most support and contribute to the formation of policy or incentive programs, but it is much less likely they can be involved as the leaders or administrators. The primary issue relates to the fact that libraries and even library and information professionals are not well-appreciated in Vietnam because of longstanding social prejudices. In the past, people in this country considered that a library is just a repository for books, and librarians are the book keepers and lenders, and so it is not a challenging profession. Nowadays, although the position, mission, function and responsibility of libraries have changed significantly in response to technology and social development, many people in Vietnam still under-appreciate the value and role of libraries and library staff (Do et al., 2017; Ministry of Education and Training, 2019). Consequently, libraries in Vietnam have usually received little attention and support from the government and even university administrators. Because they usually have limited funding to maintain and develop their services (Duong et al., 2019, p.117), their facilities are outdated, and books are dated and underused, leading to unsatisfactory services (Ninh et al., 2010; Diep & Nahl, 2011). This situation is changing, however. As explained earlier, many universities such as Ton Duc Thang University, the Banking University of Ho Chi Minh City, Ho Chi Minh City University of Technology, and Ho Chi Minh City University of Food Industry, have invested significantly in their libraries. This stems from the recognition by stakeholders of the importance of libraries in teaching and learning. More importantly, as the quality of the university library is one of the criteria in the set of Vietnam's higher education accreditation standards of MOET, if universities want to meet this criterion, they have to invest in their libraries. This is seen as a meaningful change within Vietnamese higher education and also a significant enabler of the OER movement in this country.

Libraries and library staff can also assert their importance and improve their influence through developing IOERs and offering OER support. The library has been likened to the “nexus of teaching, learning, and research” (DiSanto et al., 2019, p.5). By embracing the OER movement, libraries can also develop and strengthen their relationships with internal and external stakeholders of the HEOs. With more engagement and contribution from OER creators, libraries can enhance the quality and quantity of their collections and repositories. As a result, libraries can attract more users.

The findings of this study indicate that university libraries, with their mission and resources, play an indispensable role in developing IOERs and supporting the OER movement. Decision-makers are urged to incorporate libraries and library staff in any OER-related projects. Library staff also need to proactively improve their expertise and competencies in response to the educational change brought by the open movement. Participants in this study indicated that lecturers, students and researchers are the primary OER users and producers. The challenge is that implementers have to develop strategies and carry out activities to help users become aware of OER and recognise their need to harness and create them. IOER development projects in Vietnam will also need significant advocacy and support from university leaders and other university units. Internationally, there are many studies that investigate the roles of university libraries and library staff in the OER movement over many years, but very little was found in the literature on the role of other stakeholders. More research is thus needed to better understand how other stakeholders can support and collaborate with libraries in developing OER repositories in HEOs.

7.4 Factors Affecting the Development of IOERs and Knowledge and Skills Needed to Engage with OER

In recent years, a number of researchers (for example, Mtebe & Raisamo, 2014; Cox & Trotter, 2017; Ganapathi, 2018) have reported on opportunities and challenges of the OER movement, and OEP in general, from the users’ perspectives in different countries. There has been little research into investigating the factors that influence the development of institutional OER repositories from the higher education providers’

point of view. This study is among the first to investigate these factors. The second component of the educational change theory – factors affecting the change (Fullan, 2007) was adapted to develop an initial theoretical framework for assisting data analysis. According to the initial theoretical framework developed for this research, five types of factors affect the development of IOER: the characteristics of the change, access to information about the change, economic factors, political factors, and socio-cultural factors. Apart from those covered by the initial theoretical framework, this research concluded that pedagogical factors, legal factors, and technological and infrastructure factors also significantly influence IOER development in Vietnam. This section discusses and clarifies the factors identified. The factors may not always be hindrances as they can include opportunities or enablers. The issues related to the knowledge and skills needed for users to engage with OER are also discussed in this section.

Although it is evident that the factors presented in this chapter influence IOER development in Vietnam, there are inconsistencies between the perspectives of the participants and Fullan (2007) regarding the phase of the development process being affected by these factors. The analysis of the interviews demonstrated that many factors influence both phases of the IOER development process, not just a single phase.

The characteristics of and access to information about the IOER development project

Chapter 6 – Factors Affecting the Development of IOERs pointed out that the need for IOER development, the characteristics of the development project and the access to information about IOER development considerably influence the development project, in line with Fullan’s (2007) theory and the initial theoretical framework. Additionally, these variables have a demonstrated connection to other factors such as economic, technological and socio-cultural factors. However, while it is evident that the characteristics of the education change influence Phase II (Implementation) of the change process as believed by Fullan (2007), this study found that in Vietnam, these factors also significantly affect the Initiation Phase (Phase I). For example, if the heads of the universities perceive that the IOER development project proposed by the initiator is overambitious and impractical, they may not approve of initiating the project. Where Fullan (2007) specified that the “access to information about the change” factor affects

the Initiation Phase, this research revealed that the Implementation Phase is also heavily influenced by this factor. For instance, as presented in Chapter 5 – Participants’ Perceptions of OER and IOER Development, implementing the IOER development project (Phase II of the change process) requires the engagement and contribution of many internal and even external stakeholders. It is impossible for stakeholders to support the development project without having access to information about that project and understand its advantages.

Although the respondents of this study confirmed the need for OER and IOER development in Vietnam, many users (and other stakeholders) currently do not recognise their own need to use OER or develop IOERs as they are unaware of OER and their potential. A study conducted by Do et al. (2019) showed that while many of the educators and library staff interviewed in Vietnam indicated that they knew or have heard about OER, not many understood its principles; for example, they did not know about the Creative Commons licenses. Do’s study also revealed that the proportion of students who are aware of OER is not high either. People in Vietnam are confused between two concepts: open-access (OA) resources and OER. In Vietnamese, the OA resource is called “tài nguyên truy cập mở” or sometimes “tài nguyên mở” [open resource] for short. When the term “OER” was introduced, it was called “tài nguyên giáo dục mở” [open educational resource]. It is understandable why many people thought open educational resources and OA resources were the same, as their names are quite similar in Vietnamese.

Moreover, not every resource published with an open licence is OER. As explained in Chapter 2 – Literature Review and Analysis, works licensed with the ND (No Derivative Works) restriction are not considered OER as people are unable to redistribute the modified or remixed works in the future. Perhaps because of the limited understanding of OER principles, some stakeholders in Vietnam caused further confusion to people in this country by introducing resources or initiatives marketed as “OER” but failing to adhere to the 5R principles. This situation is called “openwashing”, defined by Audrey Watters as “having the appearance of being ‘open’ but really only as a marketing effort, not as a substantive commitment to anything more than the adjective’s use in a product name” (Watters, 2015). As emphasised in the previous chapter, stakeholders can only perceive their needs to harness OER or develop

IOERs once they understand the potential of OER. Hence, more promotional activities and campaigns that can educate clearly and firmly about OER to understand OER concepts and advantages should be conducted.

As noted in Chapter 6 – Factors Affecting the Development of IOERs, the characteristics of an IOER development project, such as its scope, clarity, quality, practicality or complexity, exert a major impact on the process of the development project. The research suggests that the implementers should carefully review and plan for the project with the aim of enhancing its clarity, quality and practicality, and reducing complexity. In Vietnam, it would be challenging to ensure that all of the key open aspects were achieved. To date, few IOERs have been developed in Vietnam. A foreign-owned university in Vietnam has produced OER with Creative Commons licenses but with closed formats. The interoperability of those resources is thus limited as they do not rely on open standards. A private university has implemented a system based on open-source software to produce OER, but they have been unable to apply open licenses to the resources due to legal constraints. Another foreign-backed university, which had given open access to part of their IOER to users, is still limited to access by currently enrolled students. Based on the range of existing constraints identified in this research, a more realistic strategy might be to aim for a limited version of the OER model. The steps towards developing OER take time and efforts from all parties, in which changing people’s philosophy from “close” to “open” is the biggest challenge. It seems that securing the creation, publishing, and distribution of OER based entirely on free and open-source software is time-consuming and the most difficult task to do in Vietnam; hence, educational resources published only in open access or with open licenses should also be encouraged. However, stakeholders, especially users, should understand the differences between them.

Economic factors

As is the case in other nations reported in the literature (for example by Pena, 2009; Ngimwa & Wilson, 2012; Ipaye & Ipaye, 2013; McGreal, 2017), lack of funding for initiating and sustaining a project has been identified as an impediment to IOER development in Vietnam. As explained before, almost all activities of public HEOs are funded through the State budget; heads of these HEOs thus have to follow the Law on

State Budget when planning and carrying out their activities. With about 70 per cent of HEOs in Vietnam being public, economic factors are recognised by the participants as a major barrier for these universities to operate any project that needs financial investment, such as IOER development. This also explains why foreign and private universities are more active in the open movement in this country, as they are more flexible in mobilising their budgets.

To improve the quality of tertiary education, in 2020 about twenty key public universities in Vietnam were given autonomy by the government. Financially, many public universities in Vietnam are in a transition phase from the old system of state subsidy to a self-financing mechanism with more autonomy. It is challenging to mobilise finance to subsidise IOER development activities in these universities as they are no longer funded from the State budget. However, achieving autonomy also opens up an excellent opportunity for public universities to develop IOERs in the future, once they have the right of self-government in developing policy, designing curriculums, managing budgets, calling for funding and recruiting personnel. This is an extremely important facilitator for the OER movement in Vietnam in general.

Fullan (2007) argued that newly available funds exert a great influence on the Initiation Phase of the change project. However, as explained in Chapter 6 - Factors Affecting the Development of IOERs, universities also need to invest money to implement and maintain the project, not only for initiating it. This research contends that the economic factors significantly affect both phases of the change process.

Political factors

Fullan (2007) maintained that new policy significantly impacts the Initiation Phase (Phases I) of the change process and the findings of this research support his statement. This study found that a lack of policy is a critical impediment to IOER development and the OER movement in Vietnam, in line with studies in other countries (for instance, Ipaye & Ipaye, 2013; Wang & Towey, 2017). After the first moves to introduce the OER movement in Vietnam in the early 2000s, in following years the government has paid much less attention to supporting this movement. However, various OER-related activities conducted across the country by different parties, of which the establishment of the Open Education Development Advisory Board and the Open Education Club

affiliated to the AVU&C are the latest, can be considered as promising signs. These activities may have contributed significantly to raising people's awareness of the potentials of OER. Perhaps as a result of these activities, on August 23, 2019 a scientific conference was held by MOET and the Vietnam Association for Promoting Education in Ho Chi Minh City regarding the role of universities in building OER. At the conference Deputy Minister of Education and Training, Mr Huu Do Nguyen, indicated that soon MOET would develop relevant mechanisms and policies to promote OER development and sharing in Vietnam. Simultaneously, he emphasised that universities now must enhance stakeholders' awareness, improve their capacity, and consider participating in developing and promoting OER as one of the key tasks in the coming period. Not long after the conference, on September 20, 2019, MOET issued Official dispatch No. 4301/BGDĐT-GDĐT (Ministry of Education and Training, 2019b), which outlines four recommendations encouraging the creation and development of OER at HEOs:

1. HEOs need to promote and raise awareness about the role and potential of OER to staff, lecturers and students.
2. HEOs need to develop and implement plans to build, exploit and use OER as per the specific conditions of the university, encourage the participation of lecturers, researchers, experts and students; report the plan before October 30, 2019, and annually report on the results of the implementation of the plans to MOET.
3. HEOs need to actively cooperate in building, connecting and sharing OER with educational institutions, organisations and individuals in Vietnam and international; and actively participate in the Digital Vietnamese Knowledge System project (itrithuc.vn), localising international OER to help learners expand their opportunities to access quality learning content, save costs, and meet their lifelong learning needs.
4. HEOs need to coordinate with Continuing Education Centers to compile materials for fostering and updating knowledge and skills, and transferring technology; and develop and implement open, mass and online programs and courses in order to improve the quality of human resources for localities,

contributing to increasing the proportion of the population having access to higher education through continuing education.

Also, in this dispatch, MOET appointed Hanoi Open University and Ho Chi Minh City Open University to be in charge of building the assessment standards for OER and reporting to MOET before December 31, 2019. This is a remarkable milestone and is expected to be a critical facilitator to boost the OER movement in Vietnam. However, not much information regarding the progress of the development of the OER assessment standards has been published at the time of writing.

The faculty in many countries are the decision makers for adopting OER in teaching (Allen et al., 2014; Baas et al., 2019). Educators in Vietnam, on the contrary, have limited flexibility and authority in harnessing OER. However, with the official support of the government, lecturers and universities in Vietnam can now be more active in embracing the OER movement and establishing institutional OER policies. As with government policies, institutional policies in Vietnam's HEOs are formed from various interlinked components such as the culture of teaching and learning, the nation's legal system, and government guidelines and policies. With institutional policies in place, stakeholders will have the authority, incentives, responsibilities and positive attitudes to develop IOERs, while users can proactively improve their knowledge and skills to adopt, localise and create OER. Obviously, policy is one of the key determinants of stakeholders' advocacy for and engagement with OER, as this research indicated. Potential IOER-related policies could cover many aspects of development, such as recognising and rewarding OER contributions, funding and human resources distribution, or OER quality criteria and quality frameworks.

As stated previously, the extent of institutional autonomy given relating to scope of action and policy making is another variable identified in this investigation as affecting the OER movement in HEOs. Institutional autonomy is now recognised as an inevitable trend in Vietnam, as noted under economic factors. When given self-government in developing policy, public universities have the freedom to formulate and execute operational strategy and plans for their institutions as long as they are not in violation of existing laws, objectives and policies of the State. They no longer need to wait for

government directions and guidelines. Achieving institutional autonomy is an excellent opportunity for developing IOERs in public universities in Vietnam.

Socio-cultural factors

This research has explored a variety of socio-cultural challenges that constrain higher education providers in harnessing OER and developing IOERs. Among these, the lack of advocacy and participation from stakeholders is the biggest obstacle of the OER movement in Vietnam. That factor has also been identified in previous research for other countries (such as Torres, 2013; Hu et al., 2015; Wang & Towey, 2017; Thumbumrung & Aroonpiboon, 2018). However, socio-cultural challenges can be addressed if the various stakeholder communities can be convinced of the benefits of OER to education and training in Vietnam. Critical to this process is the development of appropriate strategies and policies by government and education administrators. Among the strategies recommended by the respondents of this study, users' awareness and capacity development are highlighted as essential.

One of the keys to achieving users' attention and participation in the development of IOER is raising their level of the skills needed to use and produce OER. As outlined in Chapter 5 – Participants' Perceptions of OER and IOER Development, users in Vietnam will first need an awareness of OER and their concepts, and to some extent digital and information literacy, knowledge about IP rights and copyright, English proficiency, and socio-cultural knowledge in specific contexts for engaging with OER. Many scholars have pointed out that OER contributes to helping users to enhance their skills and knowledge (for example, Das, 2011; Amornrit, 2019; Mingsiritham & Koraneekij, 2020); however, little has been done to investigate the knowledge and skills needed to fully engage with OER. In 2016, the Open Educational Resources Competency Framework discussing competencies for using OER was conceptualised and published by the International Organisation of La Francophonie in partnership with organisations like UNESCO and the Open Education Consortium (International Organisation of La Francophonie, 2016). The framework details five fields of competence: (1) Becoming familiar with OER, (2) Searching for OER, (3) Using OER, (4) Creating OER, (5) Sharing OER. Each field of competence covers various associated abilities and capabilities (International Organisation of La Francophonie,

2016). Some key skills and knowledge needed for using and creating OER were also noted by the authors of the framework such as conceptual knowledge about OER or basic computer skills, similar to the findings of this research. This framework can serve as a useful resource for supporting OER training activities in general. However, so far, there is a scarcity of research reporting the application of this framework as well as its effectiveness.

Stakeholders' awareness of OER is a variable that significantly influences their advocacy and attitude towards OER adoption and IOER development. As noted earlier, lack of awareness about OER and their potentials, and low levels of exposure to OER from the community are notable impediments to the OER movement in Vietnam. Many scholars have reported a similar concern over the years (like Allen & Seaman, 2014; Hu et al., 2015; Hodgkinson-William, 2019). It is possible for a user to use an open educational resource without being aware of its characteristics. However, to have the desire to deliberately locate, use and create OER, users need a conceptual knowledge about OER and a recognition of their potential. IOER development project implementers were urged by the participants in this study to organise more OER promotion and awareness-raising activities on their campuses.

Another barrier for the OER movement stated by the participants in this investigation relates to the limited knowledge and awareness of lecturers and students in Vietnam with regard to copyright, IP rights, open licensing and fair use. As explained in Chapter 6 - Factors Affecting the Development of IOERs, many legal issues facing OER advocates in Vietnam were caused by this factor. This is also a severe problem in many other countries as reported in the literature (Hodgkinson-Williams, 2010; McGreal, 2017; Ashadevi & MuthamilSelvi, 2017; Thumbumrung & Aroonpiboon, 2018). Regarding the capacity of users, lacking digital and information skills is hindering many Vietnamese users from harnessing OER. Users in other nations also face a similar problem, revealed in previous research (Deshmukh & Agarkar, 2010; Mosharraf & Taghiyareh, 2016; Cox & Trotter, 2017). However, as discussed previously, it is expected that activities and practices promoting, using and creating OER will help stakeholders to increase their awareness and understanding of intellectual property and copyright issues as well as improve their information and digital literacy.

Language is a facilitating factor for developing national and institutional OER repositories in Vietnam. While Vietnam has a rich history, with cultures and traditions of fifty-four ethnic groups, Vietnamese is the single official and national language of the country. According to a survey conducted by UNESCO in 2018, the adult literacy rate in Vietnam was 95 per cent, which is considered as an excellent advantage for Vietnamese in localising and producing OER in their language. Language is a facilitating factor that can help to enhance the practicality of IOER development projects in Vietnam.

Although the OER published are expected to be in Vietnamese, to make effective use of existing materials, proficiency in English is a requirement. Low English competence is a barrier for many Vietnamese people in using original open educational content issued in English. This issue was also reported by researchers in other countries where English is not the primary language (such as Torres, 2013; Mosharraf & Taghiyareh, 2016; Wang & Towey, 2017). This particular problem may be changing. Recognising the importance of English, Vietnam's government has recently launched English-taught advanced training programs at many universities to improve student's English proficiency. Further, despite numerous potential socio-economic barriers, in 2018 the Minister of Information and Communications, Manh Hung Nguyen, submitted a proposal to make English Vietnam's second language so as to create leverage for the development and integration of Vietnam. In general, the proposal has received strong support from the community, and there is an expectation that in the near future, English will be widely used in Vietnam. In fact, the language of available OER is both a challenge and a benefit for the OER movement in Vietnam. Users in Vietnam can use international OER to improve their foreign language proficiency, as recommended earlier.

Other positive developments include the work of champions who are promoting OER activities, and an increase in the number of university lecturers with overseas training and qualifications who can be expected to be more familiar with open education and copyright issues. Fullan (2007) stated that change agents contribute significantly to educational change. As explained in previous chapters, participants of this investigation acknowledged the important role of the champions in the OER movement in Vietnam. However, the findings of this research challenge Fullan's (2007) suggestion that change

agents always come from outside the university. This study found that they are not necessarily external to the organisation. The initiator of the OWC at a foreign-backed university in Vietnam was the leader of the IT department at this university, and this happened long before the external champions started to support the OER movement in this country. Similarly, as noted in Chapter 6 – Factors Affecting the Development of IOERs, thanks to the introduction and encouragement from the leaders of a private university in Hanoi regarding OER use, a faculty member found himself very motivated to harness this type of resource. In this research, within the HEOs, the initiators of the IOER development projects can also be considered the change agents. In 2015, Do concluded in his research about the contextual factors affecting the development of digital library education at universities in Vietnam, which also adopted Fullan's theory, that the change agents usually need to be in a leadership role to understand the current situation of HEOs and have the power to make a decision to change. This research provides further support for his argument.

This study found that the type of educational establishment is a variable that influenced higher education communities' characteristics and, perhaps, also their attitudes towards change. For example, many respondents insisted that educators in a private university have more incentives and flexibility in harnessing OER than those at public universities. Users at a foreign university are likely to be more familiar with the culture of sharing IP and waiving copyright than those working at local universities. It appears that the orientation of a university in Vietnam is affected by its levels of autonomy in decision making. Universities given more autonomy, like private and foreign universities, might be more open to innovation and change (problem-solving), such as developing IOER, while others with less autonomy are more conservative (bureaucratic).

In general, the findings of this research agree with Fullan's perspectives regarding the impacts of various internal and external stakeholders (through their characteristics and attitudes towards OER and IOER development) on both phases of the change process. In this research setting, participants highlighted that users' OER literacy is a critical social-cultural variable affecting the change. As explained earlier, the orientation of the HEO is influenced by the type of educational establishment; on the other hand, it significantly affects stakeholders' attitudes towards OER and IOER development. Fullan (2007) argued that the HEO orientation (problem-solving or bureaucratic)

influences Phase I of the change process; however, this study contends that Phase II of the change is also indirectly affected by this variable.

Pedagogical factors

As well as the factors covered by the initial theoretical framework, this research found a number of pedagogical issues, such as the characteristics of teaching and learning, and the education and collaboration culture and practices of higher education stakeholders, impact the development of IOERs, in line with other studies (such as Torres, 2013; Ipaye & Ipaye, 2013; Cox & Trotter, 2017). The majority of the pedagogy-related issues are highly relevant to other factors, especially socio-cultural factors. As explained in previous sections, the practices of using, reusing and producing OER can contribute to improving pedagogical problems and potentially lead to a significant change in the education system in Vietnam. Some expected pedagogical changes include the reduction in copyright infringement cases, promotion of open culture and academic integrity, innovations in teaching and learning, and affirmation of the importance of university libraries.

In general, the prospects for the OER movement in Vietnam remain strong, thanks to development strategies newly released by the government, as well as the influence of educational and economic trends worldwide. In particular, a side effect of the Coronavirus (COVID-19) worldwide pandemic has been to make online education mainstream. In early 2020, universities, institutions and schools in the United States, Australia, China, and many other countries decided to move classes online in order to minimise the spread of COVID-19. There is more potential for OER in this environment, as they can facilitate the rapid development of online courses, which could, in turn, lead to more interest in OER. Moreover, the introduction and launch in 2018 of the Digital Vietnamese Knowledge System, a Wikipedia-like portal customised for the Vietnamese people, has also opened up opportunities for nourishing a knowledge-sharing culture and promoting the OER movement. In addition, the establishment of the Open Education Advisory Board and the Open Education Club are positive signs for the growth of the open movement in Vietnam.

Despite the difficulties identified by the participants, there are recent positive moves by higher education providers in Vietnam. At the institutional level, several universities

have taken steps to utilise OER in the last few years, such as Thang Long University (Vu et al., 2019), Da Nang Vocational Training College (Le, 2019d), and Ha Long University (Le & Tran, 2019). Far-reaching vision from top managers and proactive library staff at these universities are facilitating the growth of OER. From 2017, AVU&C has also organised a series of training courses for librarians, IT staff, lecturers, researchers and faculty centre managers on exploiting OER at universities and colleges in different cities and provinces such as Hanoi, Ho Chi Minh, Da Nang, Tien Giang and Vinh Long (Le, 2019a). In 2019, AVU&C also launched the “Open Education and Open Educational Resources - Application and Development” website (<https://giaoducmo.avnuc.vn/>) to promote the application and development of open education and OER and deploy them in Vietnam (Le, 2019a). Baas et al. (2019) maintained that teachers’ volition in harnessing OER relies on the actual availability of relevant and quality OER. It is expected that the increase of OER in Vietnam will enable more educators to engage with OER. In recognition of the importance of libraries for teaching and learning, some public universities in Ho Chi Minh City have started to invest more in libraries, such as improving ICT infrastructure or recruiting skilled staff. These libraries are also empowered by the universities’ administrators to organise, collaborate and engage with other units within the universities in order to enhance the institution’s academic reputation and education quality.

The pedagogy-related factors, which reflect the facts and characteristics of teaching and learning practices in Vietnam, greatly influence stakeholders’ advocacy, contribution and attitudes towards OER and IOER development. Moreover, these pedagogical variables also influence the decision to initiate change by university leaders. Hence, this study concluded that these factors impact both phases of the change process.

Legal factors

Adding to the initial theoretical framework, this research found that legal factors also significantly influence the development of IOER in Vietnam. In particular, the data analysis indicates that the limitations and inconsistencies of Vietnam’s legal system are constraining the OER movement in Vietnam. Other countries reported having similar challenges (for example, Pena, 2009; D’Antoni, 2009; Hodgkinson-Williams, 2010; Hu et al., 2015; Cox & Trotter, 2017). Nevertheless, the recent introduction of some laws

from the government may resolve many of the legal issues facing the OER movement in Vietnam.

Superseding the 2000 Ordinance on Libraries, the newly released Law on Libraries (No. 46/2019/QH14), which includes fifty-one articles distributed in five chapters, introduces many new points, such as regulations on developing digital libraries, developing OER, promoting interlibrary collaboration, and periodic reviewing of library operations (Vietnam Government Portal, 2019a). This Law is valid from July 2020. As an important stakeholder of the OER movement in HEOs, the university library now can function more efficiently and boldly in conducting its activities as in this Law the rights, obligations, and responsibilities of agencies, organisations, and individuals in the library activities are clearly defined (Vietnam Government Portal, 2019a). Also, on June 14, 2019 the Law on Education No. 43/2019/QH14 was approved by the National Assembly. Article 4, Clause 3 of this Law clearly states: “Developing an open education system, building a learning society to create opportunities for everyone to have access to education, learning at all levels, all forms, and lifelong” and in Article 6, Clause 1: “The national education system is an open and interconnected education system including formal education and continuing education” (Vietnam Government Portal, 2019b). Thanks to the approval of this Law, the OER movement in Vietnam has an excellent opportunity to grow robustly as an indispensable aspect of the open education system,

It is very likely that the appearance and growing popularity of OER in Vietnam in the future will require the amendment or adjustment of Vietnam’s legal system to comply with the changes in education that will result from OER adoption and production. Hence, the legal issues associated with IOER development will potentially be resolved in the near future.

The principal objective of the Initiation Phase (Phase I) of the educational change process is obtaining approval and support of university administrators to launch the development project, while achieving support and participation of lecturers, researchers, and students is the crucial objective of the second phase (Implementation). The legal factors articulated in this research significantly impact the support and attitudes of various stakeholders towards OER and IOER development. This study

concluded that legal factors exert influences on both phases of the IOER development process, although their impacts on Phase II appear to be more obvious.

Technological and infrastructure factors

Other than the factors included in the initial theoretical framework, technology-related matters were identified as influential on the development of IOERs in Vietnam. Other less developed or developing countries reported similar issues (Ngimwa & Wilson, 2012; Ipaye & Ipaye 2013; Torres, 2013; Mtebe & Raisamo, 2014).

Vietnam is one of the countries experiencing the highest growth rates for online learning products globally, with an Internet penetration rate of 61.0 per cent in 2019 (Ken Research, 2019). In late 2017, research on smartphone penetration in Vietnam conducted by Nielsen revealed a stable growth in smartphone possession in the key cities, secondary cities and even rural areas (Nielsen, 2017). According to Statista (2020), mobile Internet penetration in Vietnam is considered high, reaching approximately 140.64 million units in 2018, 1.47 times higher than the population of this country investigated in the same year. Although users in this country may find technology is not a critical problem that prevents them from using OER, developers of IOERs and stakeholders need to seriously consider the capacity and sustainability of ICT systems and facilities. Indeed, it seems that the most critical technological problem in Vietnam is not related to access to ICT facilities or Internet connection but is ensuring the sustainability of the IOER by employing open-source software and systems. As explained in Chapter 6 – Factors Affecting the Development of IOERs, given current perceptions of Vietnamese people towards open solutions, it is a challenge hindering the development of IOERs. The shortcomings in the areas identified need to be addressed to facilitate the development and adoption of the infrastructure needed to support IOER projects. That will take time, money and significant effort. In particular, it would be more practical if universities first focus on providing open access and then open licenses to the resources; once stakeholders are familiar with OER and the open concept, universities can start implementing open source to ensure the sustainability of their repositories.

This situation may be changing. The open movement is developing rapidly in Vietnam and universities have paid more attention recently to open technology products. As

reported in the latest OER scientific conference proceedings, several universities such as Thang Long University and Hai Phong Private University have adopted open-source software and systems to produce OER (Vu et al., 2019). Currently, VFOSSA and RDOT are the two most prominent open technology organisations in Vietnam. Both organisations have been actively promoting the adoption of open technology; as a result, universities and libraries have begun to use open-source software (such as Koha, DSpace, and Greenstone) in information technology application activities (Do et al., 2019).

As with the legal factors discussed above, the impacts of technology-related factors on the Implementation Phase (Phase II) of the IOER development process are more pronounced. However, these factors also indirectly affect the decision of the university administrators to initiate the project (Phase I). For example, a rector of a small university with poor IT infrastructure and a low budget may think that the development of IOER is not feasible; hence, they will not approve the development project proposal. This study maintains that the technological and infrastructure factors influence both phases of the IOER development process.

To sum up this section, numerous factors have been found that influence the development of IOER in Vietnam, and different factors exert different degrees of impact on the development. Further, almost all of the factors identified influence both phases of the development process, although some will have a greater influence on a particular phase than others. These factors appear to be related and complement each other, with political and legal factors the core. With reasonable policies and regulations, the majority of identified barriers will be reduced or resolved. This study points out that the Vietnamese people may realise significant advantages in embracing the OER movement if they can overcome the multiple challenges.

7.5 Proposed Conceptual Framework of IOER-related Factors

This section introduces the proposed conceptual framework of IOER-related factors. This conceptual framework is a modified version of the initial theoretical framework developed after consideration of the research findings and subsequent discussion.

As stated earlier, this research has investigated the development of an IOER in Vietnam from the higher education provider perspective. The majority of previous studies focused on the adoption of OER or the OER movement in general, and the informants of these studies were typically OER users (lecturers, teachers or students). Initially, no model or framework was identified that could perfectly fit this research setting. Fullan's theory of educational change (2007) provided a useful starting point and was adopted for this research. However, this theory was developed in North America and based on change at a different education level. Hence, the theory needed to be adapted to develop an initial theoretical framework in order to assist the data analysis rather than guide the research design and implementation. The initial theoretical framework was developed and included five initial categories of factors affecting educational change, namely (1) the characteristics of the change, (2) access to information about the change, (3) economic factors, (4) political factors, and (5) socio-cultural factors, as explained in Chapter 3 – Theory and Initial Theoretical Framework.

Codes and concepts were identified during the data analysis, as noted in Chapter 4 – Research Design and Implementation. These codes and concepts were then compared with the theory and initial theoretical framework and further analysed to generate the research findings. Regarding the factors affecting IOER development, this research found variables that have not been suggested by Fullan nor in previous studies. Further, in addition to the factors covered by the initial theoretical framework, an adaptation of Fullan's framework developed for this study, there were others that represented new categories. For example, “the recognition of OER open licenses in the national legal system” is a variable aligned with the legal factors and “teaching and learning characteristics and practices” is a factor associated with pedagogical factors. Hence, three new categories of factors (pedagogical factors, legal factors, and technological and infrastructure factors) were added to the initial theoretical framework to form the final conceptual framework. Also, from the data analysis, the relationships and links between these factors and their impact on the change process become apparent. The initial and new groups of factor of IOER development and their relationship are depicted in Figure 16 - Conceptual framework of IOER-related factors. The full list of factors was shown in Table 11.

This framework represents the critical types of factors influencing IOER development in Vietnam. The core of the framework is the IOER development which is covered by three groups (rings) of influential factors, from inner to outer: (1) Characteristics of and access to information about the IOER development project; (2) Socio-cultural factors, economic factors, technological factors, pedagogical factors; and (3) Political factors and legal factors. Among these factors, pedagogical factors, legal factors and technological factors, marked with an asterisk (*), are the new factors identified in this study. The other five factors are in line with the initial theoretical framework based on Fullan’s theory.

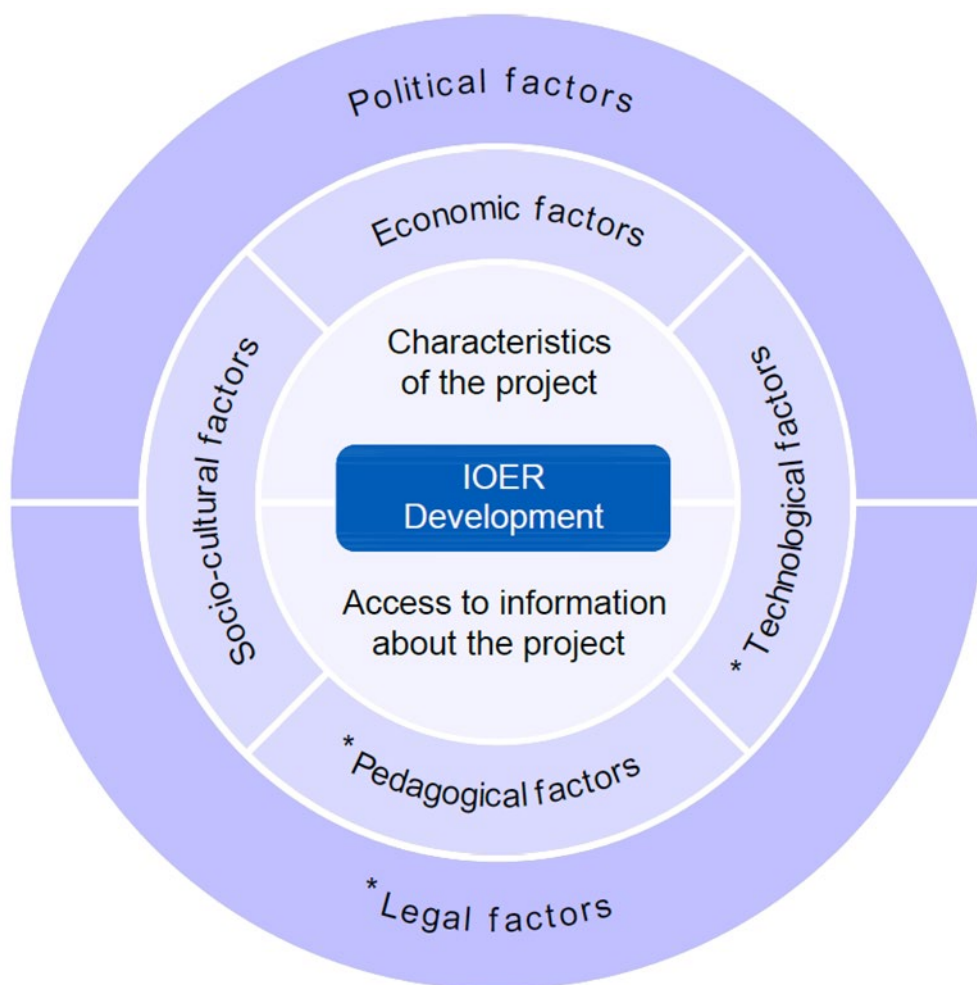


Figure 16: Conceptual framework of IOER-related factors

Many of the factors were demonstrated to be closely interconnected, although some had a stronger influence on IOER development than others, as expected. As discussed in previous chapters, this study found that the characteristics of and access to information

about the project exert a direct influence on the success of the IOER development. Hence, they are placed at the core and embrace the project. The second group of factors, situated in the middle ring, has four factors: socio-cultural factors, economic factors, technological factors and pedagogical factors. These factors interconnect and also associate with the inner and outer groups. The outermost ring comprises political factors and legal factors, which significantly influence all inner factors throughout the IOER development process. From the conceptual framework, it is evident that the roles of the country's and university leaders are crucial in IOER development and educational change in general as they are the policymakers and legislators.

In comparison with the initial theoretical framework presented in Chapter 3 - Theory and Initial Theoretical Framework, the proposed conceptual framework includes more details with three new types of factors. Furthermore, in this conceptual framework, the relationships between the factors, as well as the relationships of the factors and the IOER development process, are clarified. At an operational level, the findings of this study, especially the conceptual framework, can be used to support the development of IOERs. Although it was suggested by the participants that bottom-up is the feasible approach for IOER development at the moment in Vietnam, it is best to have the policy from the top-level managers accompanied by incentives. It is expected that the development of IOERs in Vietnam would positively impact various stakeholders. Also, practices that support the production, use and reuse of OER over a more extended period, as discussed earlier, would lead to changes in areas, particularly in the legal system and pedagogical practices in this country. The practical implications of this research and recommendations for stakeholders are further discussed in Chapter 8 - Conclusion.

Also, this conceptual framework of IOER-related factors can be applicable to investigate factors affecting education change in other countries, especially those with similar education system, social structures or cultures to Vietnam. However, the variables are likely to differ from those in this study due to the different contexts in another country.

7.6 Chapter Summary

This chapter compared the data analysis contained in Chapters 5 and 6 with the literature and documents and discussed the issues that arose. The findings enrich understanding of the phenomenon investigated in this study. Based on the findings, a conceptual framework has been proposed to guide change agents, university leaders and project implementers to develop their IOERs. Chapter 8 concludes this study by summarising the research findings, proposing the research implications for theory and practice, discussing the contributions and limitations, and offering suggestions for future research.

CHAPTER 8 – CONCLUSION

8.1 Introduction

Recently investigators have examined the user acceptance and the usability of OER, rather than the development of an IOER from the viewpoint of higher education providers. IOER development in Vietnam is potentially complex and could be affected by many contextual factors. This research was designed to investigate IOER development at universities in this country. The objectives of the research were to: (1) investigate and provide insights into the development of IOERs in Vietnam, including ascertaining how HEOs are approaching their IOERs development and identifying the factors that affect the development of IOERs; (2) identify the campus stakeholders involved in the IOER development process in Vietnam and understand how these stakeholders involved in IOER development; (3) explore the participants' perceived benefits of OER; (4) identify the skills and knowledge needed for engaging with OER; and (5) develop a framework of IOER-related factors.

In light of these objectives, this research has adopted a qualitative approach within an interpretive research paradigm with an inductive approach capable of providing in-depth understanding of the phenomena being investigated from the interviewees' perspectives. The study sought to answer three key research questions and four associated sub-questions.

Research Question 1: How can the implementation of IOERs best be managed within HEOs?

SQ1-1: What are the participants' perceived benefits of OER?

SQ1-2: What are the skills and knowledge needed for engaging with OER?

SQ1-3: Who are the campus stakeholders involved in IOER development in Vietnam?

SQ1-4: How are HEOs in Vietnam approaching the development of IOERs?

Research Question 2: What are the factors affecting the development of IOERs in Vietnam?

Research Question 3: How can Fullan's theory of educational change be adapted to better represent the educational change in this context?

Both components of the theory of educational change (Fullan, 2007), the change process and the factors that affected the change, were employed in this research. However, for the first component of the theory, only Phase I (Initiation) and Phase II (Implementation) of the change process were used to ascertain how HEOs in Vietnam are approaching the development of IOERs. The second component of the theory, which is the factors affecting the change, was adapted to develop an initial theoretical framework to assist in analysing data regarding the factors affecting the development of IOERs.

The primary source of data is from 20 semi-structured interviews conducted on a fieldwork trip to Vietnam in the first quarter of 2019. Where available, analysis of relevant policy and strategy documents was also undertaken. The participants were two university administrators, three IOER leaders, five library administrators, two library staff, two faculty administrators, three faculty members and three OER champions from Hanoi, Hai Phong, Ho Chi Minh City and Can Tho. They were selected based on non-probability sampling techniques: purposive sampling and snowball sampling. Collected data were recorded and transcribed verbatim, then analysed using the conventional content analysis approach (Hsieh & Shannon, 2005). During the data analysis, the emerging initial coding scheme was compared with the theory and initial theoretical framework and then further analysed to formulate the research findings.

The empirical findings in this study indicate that the development of IOER is a complex and significant educational change in Vietnam's higher education system influenced heavily by a set of interconnected factors, particularly contextual ones. This research added some primary steps and activities to the two phases (Initiation and Implementation) of Fullan's educational change process. In addition to those suggested by Fullan (2007), this study also explored new factors influencing the educational change in Vietnam. As noted earlier, an initial theoretical framework was first developed in the context of an educational change in HEOs in Vietnam based on the

modification of Fullan's theory in light of the literature. This initial theoretical framework was then further developed in light of the data analysis and discussion. In particular, this research identified and proposed three new types of factors (pedagogical factors, legal factors, technological and infrastructure factors) to be included in the final conceptual framework.

This chapter first provides a summary of the key research findings and arguments concerning the research questions and then explains the contributions of this research and the benefits brought by these contributions to the literature, practice and theory. The limitations of the research are also presented, followed by directions for future studies.

8.2 Summary of Research Findings

The findings of this investigation are presented and discussed in Chapter 5 - Participants' Perceptions of OER and IOER Development, Chapter 6 - Factors Affecting the Development of IOERs, and Chapter 7 - Discussion. This section provides a summary of the key findings.

8.2.1 How can the implementation of IOERs best be managed within HEOs?

This research question includes four sub-questions which are answered in the following subsections.

What are the participants' perceived benefits of OER?

This investigation aimed to explore participants' perceived benefits of OER and their attitudes towards OER and IOER development. All interviewees had a positive attitude and believed that adopting and producing OER could lead to various positive short-term and long-term impacts on stakeholders such as students, learners and researchers, educators and universities, as summarised in Table 9. One of the significant impacts highlighted in this study is the substantial change to the national education system brought by OEPs.

Table 9: Perceived benefits of OER

Types of benefits		Participants' perceived benefits of OER
Short-term benefits of OER	Open access	Provides cost advantages to stakeholders
		Ensures access to educational resources
		Ensures and improves quality of OER
		Supports self-learners and life-long learners
	Open software	Leads to access benefits and cost-effectiveness for universities and their users
	Open format	Helps to save time and energy of users
		Encourages users' creativity
		Helps to diversify teaching, research and learning resources
		Offers the opportunity to collaborate on knowledge sharing and creating
	Open license	Helps keep resources up to date
Makes clear the copyright status of OER		
Long-term impacts of OER		OEP leads to improvement in educators and students' satisfaction, ability and performance
		OEP helps promote the OER creators' reputation and influence
		OEP leads to improvement in the university's popularity and influence
		OEP leads to innovations and changes in teaching practice

The researcher expects that engaging with OER for a long time may help raise awareness and improve understanding of copyright and IP rights of stakeholders, consequently reduce copyright infringement. Further, practising open education can promote academic integrity and transparency in teaching, learning and especially researching in Vietnam. The change brought by the adoption of OER and the development of IOERs may also help address many existing critical problems and shortcomings in the higher education system in Vietnam, which were presented in

Chapter 1 - Introduction. However, as discussed in section 8.2.2, many contextual challenges are hindering stakeholders from perceiving the advantages of OER.

What are the skills and knowledge needed for engaging with OER?

The study also investigated participants' perception of the skills and knowledge needed for different levels of engagement with OER, called OER literacy in this research. From the interviews, this study identified three levels of engagement with OER, namely basic, intermediate and advanced. The interviewees argued that OER users need to have different degrees of OER literacy in order to engage with OER efficiently, and more skills and knowledge are required for more profound engagement with OER. The level of engagement with OER and associated skills and knowledge needed are synthesised in Table 10.

Table 10: Level of engagement with OER and associated skills and knowledge needed

Levels of engagement	Ability of users	Skills and knowledge needed
Basic	Adopt OER	At a fundamental level: - Awareness and understanding of OER - Digital and information literacy - Knowledge about IP rights, copyright - English proficiency
Intermediate	Adopt OER Adapt OER Create OER	At an intermediate level: - Awareness and understanding of OER - Digital and information literacy - Knowledge about IP rights, copyright - English proficiency
Advanced	Adopt OER Adapt OER Create OER Localise OER	At an advanced level: - Awareness and understanding of OER - Digital and information literacy - Knowledge about IP rights, copyright - English proficiency Socio-cultural knowledge in specific contexts

How are HEOs in Vietnam approaching the development of IOERs and who are the campus stakeholders involved in the development?

This study has investigated IOER development in Vietnam by considering it an educational change (in Fullan's terms) and applying a modified version of Fullan's theory as an initial theoretical framework. The informants of this research, especially IOER leaders, provided instructive and valuable information regarding the IOER development process in Vietnam and the stakeholders involved in the process. Internally, four types of stakeholders were proposed by the respondents, namely: (1) Project implementers; (2) OER content producers and users; (3) Project facilitators; and (4) University leaders. The interviewees believed that in Vietnam university libraries are in the best position for implementing the IOER development project with the support and facilitation of other units in the university such as the Information and Network Management Department, University Faculties, Department of Academic Affairs, and Department of Research Affairs. Educators, researchers, learners and students are the major contributors to and users of the repository. University administrators empower the stakeholders to play their roles via policy, procedures and support. The government and its agencies, open-source software providers, and professional associations were identified by participants as stakeholders external to HEOs that are influential in IOER development. The change agents proposed by Fullan (2007) are the OER champions in this research and they can be either internal or external to the HEO.

In Vietnam, a bottom-up approach for IOER development was recommended by the participants as most efficient. As explained before, this research adopted two out of three phases (Initiation, Implementation and Institutionalisation) of the educational change process proposed by Fullan (2007) to ascertain how HEOs in Vietnam are approaching the development of IOERs in Vietnam. The findings of this study indicated that, in practice, the development process of IOERs is well aligned with the first two phases of the educational change process, as Fullan proposed. However, as indicated in Chapter 3 - Theory and Initial Theoretical Framework, to date only a few IOERs have developed in Vietnam, so in this research it was not possible to investigate the Institutionalisation Phase (Phase III) of the change.

The findings concerning the development process were organised based on Phase I (Initiation) and Phase II (Implementation) of the change process. The *Initiation phase* includes one significant objective and step: getting approval and support from university administrators for the IOER development project. Initiators and the university leaders were suggested as the two campus stakeholders that should be involved in this phase. Initiators can be any staff member of the university, but usually, they play a leadership role. The *Implementation phase* was considered more complex than the Initiation Phase by respondents as many stakeholders are involved, namely university leaders, project implementers, project facilitators, OER content producers and users. A primary objective of this phase is to receive support and participation from all stakeholders in the IOER development. Four main steps of the Implementation phase were identified by the interviewees to be appropriate in the context of Vietnam are (1) IOER management; (2) OER awareness raising; (3) OER use; and (4) IOER content creation, and these steps are equally important. Although library and university leaders play an essential role in the development, the collaboration of all stakeholders was also highlighted by participants in this research as crucial.

8.2.2 What are the factors affecting the development of IOERs in Vietnam?

Having developed an initial theoretical framework based on Fullan's factors affecting educational change (see Table 2) the analysis of the data revealed a more complex picture. For the final framework, eight primary categories of factors influencing IOER development in Vietnam were identified, presented in Table 11. These factors were found to exert different levels of effects on IOER development. Each category includes many associated factors or variables. Five out of eight types of factors were similar to those covered by the initial theoretical framework (adapted from Fullan's theory), namely (1) The characteristics of the IOER development project; (2) Access to information about the IOER development project; (3) Economic factors; (4) Political factors; and (5) Socio-cultural factors. Within these categories, some new factors were also found in this investigation. Different from the initial theoretical framework, this research identified that three types of factors – (6) Pedagogical factors, (7) Legal factors, and (8) Technological and infrastructure factors – which also exert an influence

on IOER development. All of the factors were demonstrated to be connected and complemented each other. Participants in this study indicated that most of these factors directly or indirectly affect both phases (Initiation and Implementation) of the IOER development process with some factors having a stronger influence than others. Political factors are found to affect Phase I (Initiation) profoundly. Political and legal factors are the most influential of the factors identified. With firm and transparent policy and legislation in place, the majority of the current challenges can be resolved. This investigation also found that the type of educational establishment is a variable that can influence many factors, and typically universities given more institutional autonomy in their activities were considered more advantageous in developing IOERs in Vietnam.

Table 11: Factors affecting IOER development in Vietnam

Affected phase (Fullan, 2007)	Categories of factor	Factors found in this research context	Affected phase
I and II	Characteristics of the IOER development project	- The characteristics of the IOER development project	I and II
I	Access to information about the IOER development project	- The level of access to information about the IOER development project	I and II
I	Economic factors	<ul style="list-style-type: none"> - Funding for or financial concerns regarding the IOER development project - The extent of institutional autonomy given relating to funding for implementing the IOER development project 	I and II
I	Political factors	<ul style="list-style-type: none"> - The availability, relevance and efficiency of policies and guidelines regarding OER adoption and IOER development from the government and universities - The level of clarity in universities' policies on intellectual property rights and copyright - The extent of institutional autonomy given relating to scope of action and policy making 	I

I and II	Socio-cultural factors	<ul style="list-style-type: none"> - Internal and external communities of HEOs, their characteristics, capacity and attitudes towards OER adoption and IOER development - Facts, traditions, habits, activities, norms or situations that may influence the internal and external communities' thoughts, feelings, and advocacy towards OER adoption and IOER development - The presence of proactive OER champions or change agents 	I and II
Not applicable (N/A)	Pedagogical factors	<ul style="list-style-type: none"> - Teaching and learning characteristics and practices - The extent of freedom, flexibility and independence of users in adopting OER for teaching and learning activities - Stakeholders' perceived importance of the university library - The existence and popularity of OER in Vietnamese and operating IOERs 	I and II
N/A	Legal factors	<ul style="list-style-type: none"> - The recognition of OER open licenses in the national legal system - The level of clarity, consistency and enforcement of the national legal system - The level of familiarity of stakeholders with open education, OER, sharing knowledge and waiving copyright 	I and II
N/A	Technological and infrastructure factors	<ul style="list-style-type: none"> - The availability of policy, funding and human resources to ensure the availability and sustainability of appropriate technology and infrastructure for developing and operating the IOER - The extent of understanding of stakeholders, especially those in leadership roles, regarding the potential for using free and open-source software and systems 	I and II

The practical implications of this framework are presented in the following section.

8.2.3 How can Fullan's theory of educational change be adapted to better represent the educational change in this context?

Both components of the theory of educational change (the change process and factors affecting the change) formulated by Fullan (2007) were employed in this research. The first component, which is the process of educational change, was utilised to examine the IOER development process, the goals of each phase, and the stakeholders involved and their functions. The second component was adapted to build an initial theoretical framework to assist the data analysis relating to the factors affecting the change. Burner (2018, p.125) noted three situations when an educational change is essential: "increased globalisation, advancements in technology, and developments in research into teaching and learning approaches". IOER development, an educational change in this study, aligns with these three circumstances.

The educational change theory (Fullan, 2007) has contributed invaluable guidance to uncover the phenomenon studied in this research. Initially, the researcher attempted to apply the original version of the theory to investigate the factors affecting the educational change in Vietnam; however, it was not totally successful due to the differences between the context of research and where the theory was developed. Based on the results of the literature review, a modified version (of the second component of the theory), was developed as an initial theoretical framework, providing a more nuanced starting point.

The theory of educational change (Fullan, 2007) provided a lens for comprehending the nature of IOER development and its complexities, dimensions, goals and outcomes. Fullan's theory has served as a basis to ascertain how HEOs in Vietnam are approaching the development of IOERs and understand the phases as well as links between the phases of the development process. This theory also enabled identification of the primary external and internal stakeholders involved in the IOER development process, as well as their roles and contributions to the process. More importantly, the initial theoretical framework developed from Fullan's theory was a starting point for studying the factors influencing the development of IOER, identifying new factors, and the

connections between all factors as well as between the factors and the development process.

Despite the demonstrated usefulness of Fullan's theory of educational change, the theory was not without limitations. There were four critical limitations, as explained below.

First, although Fullan (2007, p.67) has acknowledged that the educational change process is detailed in practice, the educational change process presented in his theory (the first component of the theory) is very generalised, comprising three phases: Initiation, Implementation and Institutionalisation. Solely from Fullan's theory, readers cannot comprehensively understand the intricacy of the change process. This study suggests that the meaning of what constitutes an educational change and the details about the sophistication of the change process need further definition to fully describe educational change in the era of technology. This study found that educational change is a complicated process and has contributed additional steps and activities in Phases I and II of the change process.

Second, although the majority of the factors affecting the change proposed in the theory (as presented in Section 3.2.2 of Chapter 3 – Theory and Initial Theoretical Framework) have been demonstrated to be influential to the change in this investigation, they are not exhaustive. This study has demonstrated that other factors and variables significantly affect the change, not just those proposed by Fullan (2007). Especially, given recent technological advancements and the potential they have brought to education, it is impossible not to consider the influence of technological and infrastructure factors on any change in education.

Third, the impact of the factors on phases of the educational change process proposed by Fullan (2007) is insufficient in terms of the context of this research. This research demonstrated many of the factors (suggested by Fullan) to be influential to both phases of the change process, not just a single one as he understood.

Fourth, the linkage or relationship between the factors proposed in Fullan's theory is not clear. This investigation demonstrated that all the factors, including those proposed

by Fullan and additional ones found by this investigation, are interconnected and complement each other.

8.3 Contributions and Implications

In this section, a range of practical implications and theoretical contributions of this research are noted.

8.3.1 Implications for practice

The findings from this study offer a range of practical implications for various higher education stakeholders in Vietnam by providing in-depth understanding of the development of IOERs, especially the development process, stakeholders involved and the factors that influence development. Although these findings resulted from investigation in the context of Vietnam, they could also be applicable to support the development of IOERs or an educational change in other countries that have similar economic, cultural, social or educational conditions to Vietnam.

First, the research activities and research findings, especially the proposed benefits of OER, help draw the community's attention to OER and consequently raise their awareness and understanding about OER, potentially helping to address the many prevailing problems in teaching and learning in Vietnam. Stakeholders, especially policymakers and decision-makers, can consider embracing the OER movement and developing IOERs and establishing sound strategies, procedures and policies in order to achieve these benefits. OER champions, advocates and IOER development project implementers can make use of the proposed benefits to promote the OER movement and IOER development activities in Vietnam, such as calls for funding, support or participation.

Second, as examined in Chapter 7 - Discussion, the Vietnamese government has recently officially declared its support for the OER movement via their official dispatches and documents. In responding to that move, universities in Vietnam must actively create favourable conditions for their lecturers, researchers, students, and learners to harness and create OER. Universities can refer to the findings of this study

regarding the IOER development process and the essential stakeholders involved in the process to prepare for and support IOER development projects. For example, university administrators can develop policy and procedures to gain support and participation from stakeholders, and appoint IOER development project stakeholders with suitable capabilities. Also, university leaders and project implementers can employ the phases, steps and activities of the IOER development process proposed in this study as a guide to develop appropriate strategies and plans for their IOER development projects.

Third, OER champions, policymakers and project implementers in Vietnam can utilise the research findings relating to OER literacy to provide timely support, guidance and training for users to help them develop and improve their knowledge and the skills needed for efficient engagement with OER. OER users also can use these findings to evaluate their ability and proactively enhance their OER literacy.

Fourth, the research findings can be used to improve stakeholders' understanding of the factors that affect the development of IOERs in Vietnam, as well as how these factors interconnect. Hence stakeholders, especially university leaders and IOER development project implementers, can refer to these findings to develop strategic plans to leverage opportunities and overcome obstacles. The conceptual framework proposed by this research also can help guide other changes or innovations in education in general.

Fifth, the findings of this investigation help to promote Vietnam's OER movement to the world and contribute to the literature on IOER development.

Given the potential that OER offer to education, the government and other authorised bodies and agencies in Vietnam should support organisations, universities and schools to harness and create OER. This research identified that the three most practical and effective actions are: giving greater autonomy to higher education institutions, allowing them to have more flexibility and authority in decision making; promptly issuing OER policy to support HEOs in using and producing OER and developing IOERs; and updating the national legal system to validate and recognise open licenses and OER.

At the institutional level, administrators of universities, departments and faculties should promote and embrace the OER movement by providing fair, open and transparent teaching, studying and research environments. Moreover, administrators

can encourage lecturers to share and publish their teaching materials with open licences and adopt efficient innovations in teaching; similarly, they can facilitate researchers and research students to publish their research outputs with open licences. HEO leaders can also empower university libraries to better carry out their duties and, as a result, improve their performance and relevance in general. This will encourage more university libraries and staff to participate in the OER movement. In addition, collaboration between stakeholders within the university and with other universities in knowledge sharing and developing should be promoted. To enhance the OER literacy of the community, universities can coordinate with OER champions and professional associations to provide training relating to open licensing, OER use and production for staff and students. These activities can be accomplished with sound procedures and institutional policy, especially those on recognition, rewards on using, creating OER and developing IOER.

8.3.2 Theoretical contributions

This study has provided insights into the nature of the educational change (IOER development) in Vietnam, describing the change process, and clarifying the stakeholders involved in the change and their roles. This study has also affirmed that this educational change is a complex process influenced by numerous interconnected factors and variables. A significant contribution of this research is the general conceptual framework that incorporates critical factors influencing the educational change and which can be used as a guide to understanding educational change in other contexts.

The theory of educational change was formulated by Fullan (2007) to explain educational reform in North American schools. In terms of its research context, the principal contribution of this research is using Fullan's theory as a starting point to explain the phenomenon investigated in a developing country context such as Vietnam. This has resulted in a modified version of Fullan's framework, which is expected to be helpful in understanding educational changes in the context of HEOs in a developing country. This research has also critically examined the usefulness and limitations of the theory in studying a change at the higher education level. Despite some limitations, the

theory of educational change (Fullan, 2007) was an excellent tool to investigate the change in Vietnam's HEOs.

In particular, this investigation found that the educational change at universities in Vietnam is complex and comprises many steps and activities in each phase of the process. Apart from the factors affecting the change process covered by the theory, this study identified multiple other factors also significantly affecting the change. This study advanced the theory by examining the correlations and linkages of the original and additional components. All of the factors identified were demonstrated to be related and complemented each other. For example, the characteristics of the IOER development project influence the economic factors; on the other hand, they are also significantly influenced by the economic factors. Further, in this investigation, the impact of the factors on different phases of the change process was also clarified. Almost all of the factors were demonstrated to exert different extend of influence on both phases of the change process.

8.4 Limitations and Recommendations for Further Research

Four limitations of this research are unavoidable due to the research focus and choice of method and methodology. First, as this research is not a longitudinal study, the data collected in the first quarter of 2019 is only relevant to situations when researched, and at that time few universities had initiated or implemented IOERs. As a result, the last phase of the educational change process, the Institutionalisation phase, could not be included in the study. When more universities in Vietnam have initiated and implemented IOERs, an investigation including the institutionalisation phase is recommended. Second, since this study only investigated the phenomenon in the context of Vietnam, its results may not be generalisable to other settings. Third, it is beyond the scope of this study to examine of the factors influencing users' adoption of OER; hence, a further study focusing on the viewpoints of users in using OERs in Vietnam is recommended. Finally, due to its scope, this investigation was unable to test the validity of the proposed conceptual framework. Future research adopting this conceptual framework to investigate the factors affecting IOER development is therefore suggested.

8.5 Conclusion

This study has achieved its original objectives and contributes considerably to the knowledge of IOER development (as an educational change) at universities in Vietnam from the perspectives of higher education providers. Especially, it ascertained how some HEOs in Vietnam approached their IOERs development and proposed an ideal development process that other HEOs can refer to when developing their IOERs. The stakeholders involved in the development process were identified, and their roles in the process were examined. Also, this research identified and explained the factors affecting the development of IOERs in Vietnam and developed a conceptual framework of IOER-related factors to assist HEOs and OER advocates in Vietnam in developing IOERs. In general, there is potential for IOERs in Vietnam to be successfully developed; however, it will require a lot of investment, especially effort and time from all parties. It is expected that the educational change brought by the development of IOERs in Vietnam may help to address many of the existing educational problems of higher education in this country.

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Appendices

Appendix 1 – Explanatory Statement (in English)



EXPLANATORY STATEMENT

Project: Factors influencing the development of institutional Open Educational Resource repositories in Vietnam

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You are invited to take part in this study. Please read this Explanatory Statement in full before deciding whether or not to participate in this research. If you would like further information regarding any aspect of this project, you are encouraged to contact the researchers via the phone numbers or email addresses listed above.

What does the research involve?

This study focuses on investigating the development of institutional Open Educational Resources repositories (IOERs) in Vietnam. You will be interviewed with a set of questions. An interview will take approximately 60 minutes.

Why were you chosen for this research?

You were selected because you have knowledge and experience in OER and IOERs development due to which you can provide your valuable ideas and thoughts about the topic investigated.

Consenting to participate in the project and withdrawing from the research

Being in this study is voluntary and you are under no obligation to consent to participation. However, if you do consent to participate, you may withdraw from further participation at any stage but you will not be able to withdraw data that has been collected.

Possible benefits and risks

There will be no direct benefits for participants. Findings from this research will provide a comprehensive understanding of the current situation, especially the factors affecting the development of IOER, as well as the opportunities it provides. An acknowledgment of these factors will encourage more university and library managers, educators, students and other stakeholders to contribute to open education and conduct research on OER in Vietnam.

We believe that there will be no stress or inconvenience to you. You only need to spend some time to be interviewed by the researcher.



Confidentiality

All information collected in this study will be de-identified. Collected data will be used for scientific publications while maintaining the anonymity of the data sources. The information collected on the consent form will not be published or released in any way.

Storage of data

The data will be stored in accordance with Monash University Regulations, kept in a secured Monash shared drive. A report of the study or data may be submitted for publication, but individual participants will not be identifiable in such a report. Any data provided or acquired by the participant will remain confidential. Any data used for research publications will be de-identified by labelling each participant as P1, P2, P3 and so on. The data will only be available to the research team.

Use of data for other purposes

The data collected may be used for other purposes in a completely de-identified form, subject to the approval of the Chief Investigator, where ethics approval has been granted.

Results

Participants may opt to be informed of the research findings by contacting us by email:

Vi Truong: Vi.Truong@monash.edu

Complaints

Should you have any concerns or complaints about the conduct of the project, you are welcome to contact the Executive Officer, Monash University Human Research Ethics (MUHREC):

Executive Officer
Monash University Human Research Ethics Committee (MUHREC)
Room 111, Chancellery Building E,
24 Sports Walk, Clayton Campus
Research Office
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Thank you,

Vi Truong, Dr Tom Denison, Dr Steven Wright and Prof Ross Harvey

Appendix 2 – Explanatory Statement (in Vietnamese)



Bảng Tóm Tắt Công Trình Nghiên Cứu

Dự án: Các yếu tố ảnh hưởng đến sự phát triển của kho Tài Nguyên Giáo Dục Mở tại các trường đại học ở Việt Nam

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Bạn được mời tham gia vào nghiên cứu này. Vui lòng đọc bản Bảng tóm tắt công trình nghiên cứu này đầy đủ trước khi quyết định có tham gia vào nghiên cứu này hay không. Nếu bạn muốn biết thêm thông tin về bất kỳ khía cạnh nào của dự án này, xin hãy liên hệ với các nhà nghiên cứu thông qua số điện thoại hoặc địa chỉ email được liệt kê ở trên.

Nghiên cứu liên quan đến điều gì?

Nghiên cứu này tập trung vào việc xác định Các yếu tố ảnh hưởng đến sự phát triển của kho Tài Nguyên Giáo Dục Mở tại các trường đại học ở Việt Nam. Bạn sẽ được phỏng vấn với một bộ câu hỏi được chúng tôi soạn sẵn. Một cuộc phỏng vấn sẽ mất khoảng nhiều nhất khoảng 60 phút.

Tại sao chúng tôi lại chọn bạn để phỏng vấn cho nghiên cứu này?

Bạn đã được chọn vì bạn có kiến thức và kinh nghiệm trong việc sử dụng/phát triển tài nguyên giáo dục mở (OER)/kho tài nguyên giáo dục mở (IOER) do đó chúng tôi tin rằng bạn có thể cung cấp những ý tưởng và suy nghĩ rất có giá trị về chủ đề mà chúng tôi đang điều tra.

Đồng ý tham gia dự án và rút khỏi nghiên cứu

Tham gia nghiên cứu này là hoàn toàn dựa trên tinh thần tự nguyện và bạn không có nghĩa vụ phải đồng ý tham gia. Tuy nhiên, nếu bạn đồng ý tham gia, bạn có thể rút khỏi sự tham gia tiếp theo ở bất kỳ giai đoạn nào nhưng bạn sẽ không thể thu hồi dữ liệu đã được thu thập.

Các lợi ích và rủi ro có thể xảy ra

Kết quả từ nghiên cứu này sẽ cung cấp một sự hiểu biết toàn diện về tình hình hiện tại, đặc biệt là các yếu tố ảnh hưởng đến sự phát triển của kho tài nguyên giáo dục mở, cũng như các cơ hội mà nó cung cấp cho người dùng thông tin tại Việt Nam. Nhận thấy được những yếu tố này sẽ giúp khuyến khích nhiều nhà quản lý tại các trường đại học và thư viện, nhà giáo dục, sinh viên và các bên liên quan khác đóng góp cho phong trào giáo dục mở và tiến hành thêm các nghiên cứu về OER ở Việt Nam.

Sẽ không có lợi ích trực tiếp cho người tham gia, tuy nhiên bạn sẽ nhận được một món quà nhỏ của chúng tôi nhằm bày tỏ sự chân thành biết ơn cho thời gian và những đóng góp quý báu của bạn cho nghiên cứu.



cứu. Chúng tôi tin rằng sẽ không có sự căng thẳng hoặc bất tiện cho bạn. Bạn chỉ cần dành thời gian để được phỏng vấn bởi nhà nghiên cứu.

Bảo mật

Tất cả các thông tin về danh tính người tham gia thu thập được trong nghiên cứu này sẽ không được xác định. Dữ liệu được thu thập sẽ được sử dụng cho các ấn phẩm khoa học trong khi vẫn duy trì tính ẩn danh của các nguồn dữ liệu. Thông tin được thu thập trên Phiếu đồng ý tham gia nghiên cứu sẽ không được công bố hoặc phát hành dưới bất kỳ hình thức nào.

Dữ liệu lưu trữ

Dữ liệu sẽ được lưu trữ theo Quy định của Đại học Monash và được lưu giữ trong một ổ đĩa được chia sẻ bảo mật của Monash. Một báo cáo của nghiên cứu hoặc dữ liệu có thể được gửi để xuất bản trong tương lai, nhưng những người tham gia cá nhân sẽ không bị xác định danh tính trong báo cáo này. Mọi dữ liệu được cung cấp hoặc thu thập bởi người tham gia sẽ được bảo mật. Bất kỳ dữ liệu nào về người tham gia được sử dụng cho các ấn phẩm nghiên cứu sẽ không được xác định danh tính bằng cách ghi nhãn mỗi người tham gia là P1, P2, P3 và v.v. Dữ liệu sẽ chỉ có thể xem bởi nhóm nghiên cứu.

Sử dụng dữ liệu cho các mục đích khác

Các dữ liệu thu thập có thể được sử dụng cho các mục đích khác và danh tính của người tham gia cũng sẽ hoàn toàn được bảo mật, tùy thuộc vào sự chấp thuận của Điều tra viên trưởng. Ngoài ra, bản phê duyệt đạo đức của nghiên cứu này đã được chấp nhận. Bản phê duyệt đạo đức được duyệt bởi Đại học Monash nhằm chắc chắn rằng nghiên cứu này phù hợp với các giá trị đạo đức và không làm tổn hại gì đến những người tham gia phỏng vấn.

Các kết quả

Những người tham gia có thể chọn để được thông báo về các kết quả nghiên cứu bằng cách liên hệ với chúng tôi qua email: Vi Truong: Vi.Truong@monash.edu

Khiếu nại

Nếu bạn có bất kỳ mối quan tâm hoặc khiếu nại nào về dự án, bạn được hoan nghênh liên hệ với Cán bộ điều hành, Đạo Đức Nghiên Cứu Nhân văn Đại học Monash (Monash University Human Research Ethics -

MUHREC):
Cán bộ điều hành
Ủy ban Đạo Đức Nghiên Cứu Nhân văn Đại học Monash (MUHREC)
Phòng 111, Tòa nhà Chancellery E,
24 Sports Walk, Clayton Campus
Văn phòng nghiên cứu
Đại học Monash, VIC – 3800
SDT: +61 3 9905 2052 Email: muhrec@monash.edu Fax: +61 3 9905 3831

Cảm ơn bạn rất nhiều,

Vi Truong, Tiến sĩ Tom Denison, Tiến sĩ Steven Wright và Giáo sư Ross Harvey

Appendix 3 – Consent Form (in English)



CONSENT FORM

Project: Factors influencing the development of institutional Open Educational Resource repositories in Vietnam

Chief Investigator: Dr Tom Denison, Dr Steven Wright and Prof Douglas Harvey

I understand I have been asked to take part in the Monash University research project specified above. I have had the project explained to me, and I have read the Explanatory Statement, which I keep for my records.

I understand and agree or disagree that:	YES	NO
- I agree to be interviewed for approximately 90 minutes for this test.		
- I agree to audiotape my interview, if required.		
- I give my permission for my data to be used for future research		
- I would like to be contacted in the future for similar research studies, which could include an extension of this study.		

And

I understand that my participation is voluntary, that I can choose not to participate in part or all of the project, and that I can withdraw at any stage of the project without being penalised or disadvantaged in any way,

And

I understand that data from the *interview* will be kept in secure storage and accessible only to the research team. I also understand that the data will be destroyed after a 5-year period unless I consent to it being used in future research.

Name of Participant: _____

Signature: _____ Date: _____

Appendix 4 – Consent Form (in Vietnamese)



PHIẾU ĐỒNG Ý THAM GIA PHÒNG VẤN

Dự án: Các yếu tố ảnh hưởng đến sự phát triển của kho Tài Nguyên Giáo Dục Mở tại các trường đại học ở Việt Nam

Điều tra viên: Tiến sĩ Tom Denison, Tiến sĩ Steven Wright and Giáo sư Ross Harvey

Tôi hiểu rằng tôi đã được mời tham gia vào dự án nghiên cứu của trường Đại học Monash đã được nêu ở trên. Tôi đã được giải thích về dự án nghiên cứu, và tôi đã đọc qua bản tóm tắt công trình nghiên cứu và tôi sẽ giữ lại bản tóm tắt này để tham khảo.

Tôi hiểu và đồng ý hoặc không đồng ý rằng:	CÓ	KHÔNG
- Tôi đồng ý được phỏng vấn trong khoảng 60 phút cho nghiên cứu này;		
- Tôi cho phép ghi âm lại cuộc phỏng vấn của tôi;		
- Tôi cho phép dữ liệu của tôi được sử dụng cho các nghiên cứu trong tương lai.		

Và

Tôi hiểu rằng sự tham gia của tôi là tự nguyện, rằng tôi có thể chọn không tham gia một phần hoặc toàn bộ dự án và tôi có thể ngừng tham gia ở bất kỳ giai đoạn nào của dự án mà không bị phạt hoặc bị thiệt thòi dưới bất kỳ hình thức nào,

Và

Tôi hiểu rằng dữ liệu đã được phỏng vấn không thể rút lại được, ngay cả khi tôi rút khỏi nghiên cứu,

Và

Tôi hiểu rằng dữ liệu từ cuộc phỏng vấn sẽ được lưu trữ an toàn và chỉ có thể truy cập được cho nhóm nghiên cứu. Tôi cũng hiểu rằng dữ liệu sẽ bị hủy sau khoảng thời gian 5 năm trừ khi tôi đồng ý với dữ liệu được sử dụng trong nghiên cứu trong tương lai.

Tên của người tham gia: _____

Chữ ký: _____

Ngày: _____

Appendix 5 – Interview Handout (in English)



INTERVIEW HANDOUT





Definition of Open Educational Resources (OER) and institutional Open Educational Resources repository (IOER)

Open Educational Resources (OER) are considered as any type of educational resource in any medium, but mostly digital, which reside in the public domain with no rights reserved or are released under open licenses with some rights reserved. The openness of OER is characterised by the right of anyone from anywhere in the world to access, adapt, and reproduce them freely.

In this investigation, an IOER is defined as a university online archive used for collecting, preserving, and disseminating OER. The OER held in an IOER are the intellectual output of that university and/or are collected, localised resources from elsewhere.

Open license structure (Creative Commons - CC) and its conditions

Stanford Law Professor Lawrence Lessig developed the most extensively developed license in 2001, called Creative Commons (CC). CC offers user-friendly open access licenses to digital material and thus avoids the restrictions of copyright being applied automatically. Creators choose a set of conditions they want to apply for their work. The core condition that applies to all six of the CC licenses is the requirement that author of the work is attributed – the Attribution condition. The other core conditions are:

 Attribution BY	This applies to every Creative Commons work. Allows others to copy, distribute, display, and perform the copyrighted work and derivative works based on it - but only if they give credit in the way that the author asks.
 Share-Alike SA	Allows others to distribute derivative works only under the same license terms that govern the original work.
 Non-Commercial NC	Lets others copy, distribute, display and perform the copyrighted work and derivative works based on it but for non-commercial purposes only.
 No Derivative ND	Lets others copy, distribute, display and perform only verbatim copies of the work, without derivative works of it.

Appendix 6 – Interview Handout (in Vietnamese)



TÀI LIỆU PHÒNG VẤN





Định nghĩa Tài Nguyên Giáo Dục Mở (OER) và kho Tài Nguyên Giáo Dục Mở tại các trường đại học (IOER)

Tài nguyên giáo dục mở (OER) được coi là bất kỳ loại tài nguyên giáo dục nào trong bất kỳ định dạng nào, nhưng chủ yếu là kỹ thuật số, nằm trong miền công cộng không có bản quyền hoặc được phát hành theo giấy phép mở với một số quyền được bảo lưu. Tính mở của OER được đặc trưng bởi quyền của bất kỳ ai từ bất kỳ nơi nào trên thế giới được tiếp cận, thích nghi và tái sản xuất chúng một cách tự do.

Trong cuộc điều tra này, kho tài nguyên giáo dục mở tại các trường đại học (IOER) được định nghĩa là một kho lưu trữ trực tuyến của trường đại học được sử dụng để thu thập, bảo quản và phổ biến OER. Các OER được thu thập, phát triển và lưu trữ trong IOER là sản phẩm trí tuệ của trường đại học đó và/hoặc được thu thập, bản địa hóa từ các nơi khác.

Cấu trúc giấy phép mở (Creative Commons - CC) và các điều kiện của nó

Vào năm 2001, giáo sư Lawrence Lessig của Đại Học Stanford (Mỹ) đã phát triển bộ giấy phép mở được biết đến và sử dụng nhiều nhất, được gọi là Creative Commons (CC). CC cung cấp giấy phép truy cập mở thân thiện với người dùng đối với tài liệu kỹ thuật số và do đó tránh được các hạn chế về bản quyền được áp dụng tự động. Người tạo lập tài nguyên chọn một tập hợp các điều kiện mà họ muốn áp dụng cho sản phẩm, tài nguyên của mình. Điều kiện cốt lõi áp dụng cho tất cả sáu giấy phép CC là yêu cầu tác giả của tác phẩm được ghi nhận quyền tác giả - Điều kiện ghi công (CC BY). Các điều kiện cốt lõi là:

 Attribution BY	Điều kiện này áp dụng cho mọi tài nguyên được cấp giấy phép Creative Commons. Cho phép người khác sao chép, phân phối, hiển thị và trình diễn tác phẩm có bản quyền và các tác phẩm phái sinh dựa trên tác phẩm gốc – với điều kiện họ phải ghi công theo cách mà tác giả của tài nguyên gốc yêu cầu.
 Share-Alike SA	Chỉ cho phép người khác phân phối các tác phẩm phái sinh nếu họ dùng lại y hệt giấy phép của tác phẩm gốc.
 Non-Commercial NC	Cho phép người khác sao chép, phân phối, hiển thị và trình diễn tác phẩm có bản quyền và các tác phẩm phái sinh dựa trên tác phẩm gốc chỉ với mục đích phi thương mại
 No Derivative ND	Cho phép người khác sao chép, phân phối, hiển thị và trình diễn tác phẩm nhưng phải đúng nguyên văn, nguyên bản, không được phép tạo ra tác phẩm phái sinh.