

Mizuho Inuma

Learning and Teaching with Technology in the Knowledge Society

New Literacy, Collaboration
and Digital Content

 Springer

Preface

Development of ICT as well as globalization is impacting education around the world. ICT is becoming readily available in many learning environment and permeates educational institutions. National educational policies of many developed and developing countries are influenced by the global economy and standards. For instance, the concept of twenty-first century skills and the need to prepare students for global economy are spreading worldwide. Critical thinking, communication, creativity, and collaboration are four major learning and innovative skills labeled by Partnership for twenty-first Century (2011) in Framework for twenty-first Century Learning.

Typically, literacy refers to reading and writing skills and is considered as an important factor in knowledge-building process in the classroom. However, the definition of literacy has expanded to competencies using different modes of communications, such as visual images and IT access. Terms such as media literacy, multimodal literacy, information literacy, and IT literacy proliferate in the discourses of education today. UNESCO (2008), for example, advocates information literacy as essential skill imperative for people to be effective and empowered lifelong learners in knowledge society.

Despite the rapid change of landscape that surrounds education today, questions on the relationship between literacy and different modes of communications still remain unanswered. Also, there is still a need to explore how to effectively integrate different literacies both traditional and new, into teaching and learning to prepare people to become empowered learners. In addition, while collaboration and creativity is the key framework of twenty-first century skills, there are few scholarship which refer to successful teaching and learning using ICT or digital content. For example, what roles do literacies play in the classroom that has IT access and foster collaboration? How can educators use participatory media such as SNS and a fairly new mode of communication such as 3D content to foster students' deep thinking and creativity?

These are some questions that I intend to answer in this book through tested case studies. I also would like to offer some recommendations for secondary- and

tertiary-level teachers on the use of different media such as participatory media, video content, groupware and 3D content in education.

The book will look at social constructivist approach to teaching and learning using technology and how it relates to new literacy from different aspects of potential classroom activities. Chapter 1 focuses on traditional notion of literacy to literacy theories in knowledge society. Chapter 2 covers how knowledge building in classroom changes when technology is successfully used. Chapters 3 and 4 introduce recent innovative educational practices on topics concerning collaboration and digital content.

Chapter 1 discusses the definition of literacy by looking at traditional theories of literacy studies from functional literacy to New Literacy Studies movement. The discussion will move forward to explore how in the last few decades, the development of information technology has altered the way we define literacy. The chapter covers and explains terms like information literacy and ICT skills. The chapter also covers classic arguments on the great literacy divide, and how this framework is manifested in today's argument of digital divide. Literacy is not only a skill but also a competency that empowers, allowing one to participate, to be critical, and to build knowledge in society.

Chapter 2 covers recent development of the use of technology in the classroom based on social constructivist approach. The chapter explains how teaching and learning based on social constructivist approach handles knowledge, and how it can potentially foster active learning in classrooms. The chapter goes on to explain how it affects learning by discussing the role of literacy and its functions in knowledge-building processes that occur in classroom practices. The chapter also introduces recent studies on application of technology such as participatory media in classrooms. With successful use of technology, such as video streaming technology, instructor's role in the classroom changes from being a transmitter of knowledge to a facilitator of knowledge. In such context, literacy practices can play an important role in making such shift.

Chapter 3 discuss in detail about computer supported collaborative learning. From social constructivist viewpoint, collaboration among peers in a classroom is a very effective way for learners to engage and to participate. Today, collaborative learning is practiced worldwide. However, it is only recently that collaborative learning using technology is being incorporated in East Asia. This chapter will introduce some recent studies on collaborative learning using technology. This chapter introduces recent studies on collaboration and technology, specifically from the point of literacy. How the emerging characteristics of literacy practice in such collaborative setting differ from traditional literacy practice will be discussed using cases from Japan. This chapter also includes some ideas on CSCL for teachers in the classroom.

In Chap. 4 we will look more closely at digital content and learning. We live in a rapidly changing society driven by technology and marked by an access to abundance of information. Most of the information we encounter everyday is digitized and delivered through the Internet. For example, we can see different modes of communication used simultaneously, such as moving images, audio, 3D models,

and text on the same webpage. Digital content is comprised of multiple modes and is always situated to be understood in certain social context. As a learner living in knowledge society, it is not only the “decoding” or the “reading” of such digital content is of importance, but the “creating” or the “writing” of such digital content is also becoming more essential. This chapter will discuss interactive digital content used in education today such as educational use of 3D models. How non-technical students can gain new literacy to decode and create digital content is discussed using tested examples from actual classrooms. The chapter includes examples of UNESCO world heritage 3D models created by students. How teachers can use these tools to benefit their students is discussed. Chapters 3 and 4 are co-authored with Hiroaki Chiyokura Ph.D.

Contents

1 Literacy Theories in the Knowledge Society	1
Literacy and Social Development	1
The Myth of the Great Divide.	2
Argument Against the Great Divide.	3
The Digital Divide	4
Literacy and ICT Access	5
The New Literacy Studies	6
Ethnographic Studies on Literacy as Social Practice.	7
Other Studies of Literacy	7
Literacy as Social Practice	8
Technology as Social Practice.	9
Literacy as Empowerment	10
Information Literacy for Empowerment	11
References	12
2 Technology and Knowledge in the Classroom	15
Knowledge Building Process and Social Constructivism.	15
Competency-Based Education and Electronic Student Response System	17
Participatory Culture, Technology, and Learning	18
Participatory Media and Literacy.	19
Video Delivery and Information and Communication Technology	20
Video Distribution and Knowledge in Education	20
Knowledge and Flipped Learning	21
Case Study on Flipped Learning Using Video Streaming Technology	23
Recommendation for Teachers Using Participatory Media	25
References	26

3	New Literacy, Collaboration, and Technology	29
	Computer-Supported Collaborative Learning (CSCL)	29
	A Case Study of CSCL and Student Awareness in Japan	31
	Evaluation of Students' Awareness	35
	Student Awareness Change of Computer Skills and Collaboration Skills	36
	New Literacy, Collaboration, and IT Access	38
	Recommendations for Educators Teaching CSCL	41
	References	41
4	Digital Content, Literacy, and Learning	43
	Different Modes of Communication and Learning	43
	3D Digital Content in Education	44
	Using Simple 3D Programs for Literacy	45
	3D and Literacy Practices	46
	Using Google Earth for Education	46
	Content-Based Curriculum and 3D Use	49
	Frank Lloyd Wright Content-Based Textbook for English Learners	50
	3D Computer Graphics for Content-Based Textbook	50
	3D Content and Classroom Use	52
	3D for Classrooms in Cultural Understanding	53
	Cultural Orientation Education and 3D	54
	Collaborative Learning with 3D Creation	56
	Recommendations for Teachers Using 3D	61
	References	61
5	Conclusion	63
	References	64