FROM MEDIA USERS TO MEDIA-ENHANCED KNOWLEDGE CREATORS: IDENTIFYING ISSUES WITH INTEGRATING FEATURE FILMS AND TELEVISION SERIES INTO UNIVERSITY TEACHING

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ABSTRACT

For many decades, feature films and television series (FF/TV) have been used by university lecturers across disciplines as instructional materials. The audio-visual, narrative and affective qualities of FF/TV serve a range of learning objectives: they provide emotional and cognitive engagement; illustrations of abstract concepts and real-life phenomena; opportunities to develop critical thinking; and models for film analysis and production. However, FF/TV are designed by entertainers to achieve certain responses in viewers; thus when repurposed in teaching, FF/TV can have unintentional effects on student learning. FF/TV integration in the classroom therefore requires special attention.

This thesis asks how university lecturers can better utilise the potential of FF/TV in their teaching. What do lecturers already know and do in this space, and in what ways have institutions and academic developers been enabling the teaching practices with FF/TV? What are the key considerations that lecturers need to know in order to effectively integrate pre-made mass-consumed multimodal media content and technologies such as FF/TV into their pedagogy? What training and teaching evaluation resources would be useful to help transform lecturers from FF/TV users to creators of FF/TV-enhanced knowledge?

The thesis opens with an exploration of the background context of using FF/TV in university teaching that inspired this research. It then provides an explanation of the theoretical underpinnings related to visual literacy and film literacy. This leads to a discussion of relevant learning theories (Cognitive Load Theory, Dual Learning Theory and the Cognitive Theory of Multimedia), followed by their pedagogical implications and an outline of the TPACK model for designing effective teaching. Then, the thesis

discusses a mixed-methods research design which was conducted to answer the research questions. The collection process started with website analysis of Australian Group of Eight (Go8) universities to ascertain what academic development (AD) training opportunities and resources were available to lecturers to learn how to use multimodal media technologies in their teaching. This was followed by an online survey and semi-structured interviews with lecturers at Australian universities. These aimed to investigate lecturers' current levels of awareness, knowledge and skills related to FF/TV integration in teaching, as well as their access to institutional guidance and support in this space. A total of 50 survey responses (from 21 disciplines) and 18 interviews (from 8 disciplines) were analysed through the lens of cross-disciplinary theoretical frameworks (e.g., visual and film literacy, cognitive load and dual coding theories, TPACK) to identify the key themes regarding the pedagogical integration of FF/TV into teaching.

Five results chapters report the research findings. The **first** of these discusses merits and challenges when integrating FF/TV into teaching, establishing the imperative of developing an effective pedagogy for using these materials. The **second** results chapter investigates the current state of academic development related to using FF/TV in university teaching; it demonstrates that institutions generally prioritise risk management over assisting lecturers in the pedagogical integration of FF/TV and should provide more targeted guidance and training for this teaching practice. The **third** results chapter explores the knowledge and skills related to three types of technology – film production, film delivery, film integration – which are often overlooked in studies about teaching with FF/TV; it recommends that both lecturers and institutions need to consider the relationships between technology, pedagogy and

disciplinary expertise in implementing any technological provision, integration or change. The **fourth** results chapter provides a practical account of teaching with FF/TV, from selection of materials and instructional design to delivery and assessment, in order to demonstrate the complex decision-making required to achieve effective FF/TV integration into teaching. The **fifth** results chapter discusses the importance of evaluating teaching from multiple sources to accurately assess and improve the effectiveness of pedagogies involving FF/TV.

The concluding chapter addresses the research questions by summarising and discussing future implications of the research findings about formal training, engaging with technologies, an emerging pedagogy to collecting and applying teaching evaluation. Ultimately, this research raises our collective awareness about the immense educational potential of FF/TV – both as instructional content and media technology – that has been lying dormant within disciplinary boundaries and individual limitations. The thesis asserts the pedagogical appeal of FF/TV by harnessing the existing wealth of knowledge and experience about FF/TV in teaching to provide a systematic research-informed guide for building a stronger foundation for pedagogies involving FF/TV. This thesis shows that it is possible to carry forward the quality of FF/TV-enhanced pedagogies across all disciplines and teaching levels.

THESIS DECLARATION

I certify that this work contains no material which has been accepted for the award of any other degree or diploma in my name, in any university or other tertiary institution and, to the best of my knowledge and belief, contains no material previously published or written by another person, except where due reference has been made in the text.

In addition, I certify that no part of this work will, in the future, be used in a submission in my name, for any other degree or diploma in any university or other tertiary institution without the prior approval of the University of Adelaide and where applicable, any partner institution responsible for the joint-award of this degree.

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Signed:

Date: 17 February 2023

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LIST OF ABBREVIATIONS

FF/TV	Feature films and/or television series
AD	Academic development
TE	Teaching evaluation
Go8	Group of Eight
L&T	Learning and Teaching
IT	Information Technology
TK	Technological Knowledge
PK	Pedagogical Knowledge
CK	Content Knowledge
TPK	Technological Pedagogical Knowledge
TCK	Technological Content Knowledge
TPACK	Technological, Pedagogical, And Content Knowledge (both the framework and the concept)
FPT(s)	Film Production Technology/ies
FDT(s)	Film Delivery Technology/ies
FIT(s)	Film Integration Technology/ies
VL(T)	Visual Literacy (Theory)
CLT	Cognitive Load Theory
DCT	Dual Coding Theory
4Q	Four Quadrant model
ALC	Active Learning Cycle

LIST OF TABLES

LIST OF FIGURES

TABLE OF CONTENT

CHAPTER 1

INTRODUCTION

In our media-saturated and increasingly diverse society, feature films and television series (FF/TV) are no longer confined to the realm of entertainment. The role of FF/TV in formal education is expanding and thus demands more serious attention from educators and institutions (Marquis, 2022). Despite institutions' and policymakers' reluctance to embrace film, educators across academic disciplines from HASS to STEM have recognised the educational importance of FF/TV in the context of teaching visual, multimedia and film literacy (Daly, 2004; Donaghy, 2019; Paran & Duncan, 2018).

In these previous studies, educators often cited student engagement, student performance, student learning diversity, their own interest in FF/TV and the media's pedagogical merits as the main reasons for integrating FF/TV into their teaching. Specifically, they described engaging a wide range of cognitive skills, including remembering, critical thinking, creativity in problem-solving, perspective-taking, decision-making, ethical learning and empathy training to developing multiliteracies (Karasik et al., 2014; Donnelly, 2014; Djamaa, 2018; O'Boyle & Sandona, 2014; Umanath et al., 2012; Verdis et al., 2021). They also reported encountering various challenges in managing safe and effective student learning against FF/TV's compelling storytelling and special effects (Fleischer, 2018; Myers & Abd-El-Khalick, 2016), in finding guidance, training and resources to help them optimise their teaching practice (Andrist et al., 2014; Donnelly, 2014; Marquis et al., 2020; Peacock et al., 2018), or managing time and effort to develop their pedagogies with FF/TV amid other busy academic roles (e.g., Marquis et al., 2020; Masters, 2005; McAllister, 2015; Swimelar, 2013). Although these many studies were often small-scale and single-disciplinary,

together they paint a picture of self-reliant and self-taught lecturers who, despite limited support, have overcome challenges to integrate FF/TV into various teaching components (e.g., instruction, learning activities, assessments), and teach their disciplines multimodally.

This research used the combination of characteristics – narrative, audio-visual, affective, mass-produced and consumed, entertainment-oriented (or fictional, as opposed to non-edited objective recording of events) – as parameters to determine feature films and television series (FF/TV) as the targeted scope of media for investigation. While documentaries also fit into those parameters due to the blurry distinction between fiction and non-fiction regarding falsehoods (Friend, 2021), the research scope excludes documentaries for a more refined focus guiding the literature review, as well as to avoid confusing participants – especially those without film expertise – with controversies about definitions and ideologies at the expense of pedagogy-related content.

This thesis harnesses this rich literature and provides a systematic and cross-disciplinary investigation into the pedagogical integration of feature films and television series (FF/TV). It first critically analyses a wide range of studies about the use of FF/TV across academic disciplines to identify the key trends and patterns, as well as what was missing in the literature. It then details three stages of data collection conducted at Australian universities – website analysis, online surveys and semi-structured interviews – to gain a holistic understanding of university teaching practices that involve FF/TV. From this understanding, it develops a series of practical recommendations to systematically improve the effectiveness of FF/TV integration in university teaching.

1.1. Thesis aims and scope

This thesis developed its framework for data collection based on the critical and thematic analysis of multiple studies about FF/TV use in university teaching across a wide array of disciplines. Examples include *sociology* (Andrist et al., 2014; Demarath, 1981; Scholz et al., 2014; Smith, 1973), *history* (Donnelly, 2014; Marcus, 2005; Marcus et al., 2018; O'Connor, 1987; Stoddard & Marcus, 2010), *economics* (Diaz Vidal et al., 2020; Vidal & Beekman, 2021), *politics* (Chang & Cryer, 2009; Hutton & Mak, 2014; Kiasatpour, 1999; Swimelar, 2013; Valeriano, 2013), *psychology* (Bluestone, 2000; Casper et al., 2003; Duckworth & Hoover-Suczek, 1976; Fleming et al., 1990; Searight & Saunders, 2014), *language teaching* (Bonsignori, 2018; Kanellopoulou et al., 2019; Thaler, 2014, 2017; Viebrock, 2016), *geography* (Ansell, 2002; Kenna & Waters, 2017; Sigler & Albandoz, 2014), *business ethics* (Berger & Pratt, 1998; Fisher et al., 2015; O'Boyle & Sandona, 2014), *medicine* (Darbyshire & Baker, 2012; Karasik et al., 2014; Master, 2005; Membrives et al., 2016; Poznanski, 2013; Recupero et al., 2021; Wijdicks, 2019), and *math* (Burks, 2010; Reinhold, 1997; Reiser, 2015). Upon this analysis, the thesis identified a lack of a cross-disciplinary investigation into what constitutes effective integration of FF/TV in teaching and what kind of training or resources lecturers need to achieve the optimal effectiveness of FF/TV-enhanced pedagogies across disciplines.

The thesis aims to address that gap by seeking answers to three research questions:

(1) What do lecturers already know and do in this space, and in what ways have institutions and academic developers been enabling their teaching practice with FF/TV?

(2) What are the key considerations that lecturers need to know to effectively integrate pre-made mass-consumed multimodal media content and technologies such as FF/TV into their pedagogy?

(3) What training and teaching evaluation resources would be useful to assist lecturers in optimising the integration of FF/TV into their pedagogy?

In doing so, it prioritises both preserving the uniqueness of each academic discipline involved and identifying the fundamental requirements of effective teaching and learning of knowledge and skills. With this goal in mind, three stages of data collection were conducted at Australian universities: website analysis, a qualitative survey, and semi-structured interviews.

The website analysis canvassed the most highly ranked institutions in Australia – the Group of Eight (Go8) universities – to understand the general priorities of universities in providing staff induction programs and academic development (AD) opportunities for lecturers. The latter two stages of the research (the qualitative survey and semi-structured interviews) expanded this scope to all universities in Australia. The qualitative survey sought to identify the key patterns of demographics, practices, challenges and suggestions for improvement from the lecturers themselves. The semi-structured interviews built upon the results of the previous data collection stages to invite more insightful, detailed and personalised elaborations on individual lecturers' experiences with pedagogies involving FF/TV.

Overall, the research offers a systematic organisation of pedagogical practices, theoretical requirements, information sources, and skill training resources into practical frameworks to assist lecturers in optimising a complex yet underestimated teaching practice.

1.2. Research significance

This research is the first of its kind to offer a cross-disciplinary primary investigation into the practice of integrating FF/TV into university teaching. Up to this point, academic research about the use of FF/TV in teaching – both primary and review materials – has been mostly small-scale; initiated and reported by the teachers themselves; and often published in a single discipline-based journal (e.g., psychology, history, geography, language teaching) which are not as visible or accessible to those outside that discipline. While the previous reviews offered useful insights into single-disciplinary integration of FF/TV within their teaching practice, they tend to fail to capture the interdisciplinary nature of the teaching practice (film studies, pedagogy, student learning, and their own discipline), therefore failing to provide a comprehensive explanation as for why certain pedagogies worked well or not with FF/TV, how successes could be replicated and how challenges could be effectively addressed.

This research offers a comprehensive discussion that brings together not only the FF/TV-assisted teaching practices and experiences across different discplines and teaching contexts, but also requirements and considerations across different teaching phases (i.e., planning, delivery, assessment, teaching evaluation). Doing so seeks to provide the full picture of various bodies of knowledge and skillsets that lecturers would require in order to optimise their FF/TV integration and avoid or minimise problems for student learning. Without this comprehensive awareness, lecturers risk replicating multiple misuses of FF/TV in the context of education that have been repeatedly found detrimental to student learning.

Towards enabling this comprehensive discussion, the thesis integrates a wide

range of evidence-based theories and models from film and media studies, psychology, cognitive science and educational research. The outcomes of such processes present the underlying core ideas and principles that encompass good pedagogy with FF/TV, which are then utilitised to develop practical and scalable frameworks, models and resources aiming to guide future design and delivery of formal training (i.e., academic or professional development) at universities. Additionally, these frameworks, models and resources are scaffolded in this research in a way that potentially caters to more diverse levels of awareness, skills and needs of all lecturers in active teaching duties.

Amid the rise of other education-friendly technologies such as Virtual Reality and Augmented Reality, FF/TV remain an accessible, meaningful, relatable and diverse source of materials that lecturers continue to employ in teaching. In the next sections, this thesis will explore in-depth the merits of FF/TV in teaching and learning (i.e., student engagement, content visualisation, skills training and model for media analysis and video/film production) and challenges of FF/TV pedagogy (i.e., FF/TV's detrimental effects, sourcing/preparing barriers, inadequate institutional support).

This research has the potential to turn the purposeful and powerful teaching practices that FF/TV offer into a better-informed, well-supported and theoretically and technologically grounded teaching method across disciplines at university level and beyond.

1.3. Thesis structure

The thesis opens with an exploration of the background context of using FF/TV in university teaching that inspired this research in and then demonstrates the need for an interdisciplinary theoretical framework for the thesis. The following three chapters detail these theoretical underpinnings: visual literacy and film literacy; learning

theories (Cognitive Load Theory, Dual Learning Theory and the Cognitive Theory of Multimedia and their pedagogical implications); and teaching theories (TPACK, Four Quadrant model of teaching evaluation, Active Learning Cycle). The thesis then goes on to explain the rationale behind its mixed-methods research design. The next five result chapters discuss the merits and challenges of integrating FF/TV into teaching; the current state of academic development related to using FF/TV in university teaching; the knowledge and skills related to three types of technology – film production, film delivery, film integration – which are often overlooked in studies about teaching with FF/TV; a practical account of teaching with FF/TV, from selection of materials and instructional design to delivery and assessment; and lastly, the importance of evaluating teaching from multiple sources to accurately assess and improve the effectiveness of pedagogies involving FF/TV. **CHAPTER 1 – INTRODUCTION**

This thesis acknowledges the complexities of tackling an interdisciplinary teaching practice both theoretically and practically. It brings together two separate entities of film and higher education teaching.

CHAPTER 2 – RESEARCH BACKGROUND: FF/TV IN UNIVERSITY TEACHING

Understanding how the developments of film over time gradually became relevant to the educational context is key to establishing the premise of the project. This chapter provides an overview on the technological and ideological developments of filmmaking, from which modern audio-visual and narrative characteristics of film emerged. It then focuses on the affective dimension of film and the relationship between emotion, cognition and learning to highlight the discursive significance of filmmaking and film representations in the context of education. It then discusses the

relationship between media and education to provide the background for the thematic analysis of the multiple studies about FF/TV use in university teaching across disciplines. This analysis is organised into three main themes: merits of FF/TV use, challenges of FF/TV use, and different aspects of pedagogies with FF/TV.

CHAPTER 3 – VISUAL LITERACY THEORY AND FILM LITERACY

Visual literacy and film literacy emerged from Chapter 2 among the multiliteracies and skills that lecturers seek to develop in students through learning with FF/TV. An exploration of visual literacy and film literacy explains the engaging qualities and educational potential of visual information. Together these theories identify the language of FF/TV as a complementary knowledge system that we need to acknowledge and understand before FF/TV can be effectively integrated into teaching.

CHAPTER 4 – LEARNING THEORIES AND THEIR APPLIED EFFECTS

Building on the discussion of how FF/TV can help students learn, we need to identify the specific pedagogical issues that FF/TV integration must address. This chapter explores Cognitive Load Theory, Dual Learning Theory and the Cognitive Theory of Multimedia, alongside current studies on the role of emotion and motivation in these theories. In addition, the discussion also expands to include some key effects observed, namely the worked example effect, expertise reversal effect, redundancy effect, modality effect and split attention effect, both in general and in the context of FF/TV-assisted teaching.

CHAPTER 5 – TEACHING THEORIES AND MODELS

Besides supporting student learning with FF/TV-enhanced teaching, it is equally important to support lecturers in developing effective pedagogies using FF/TV. Similar to other media technologies, lecturers need to fully understand the merits and risks

when integrating FF/TV into their own teaching contexts. This involves understanding how FF/TV interacts with both the topic and the pedagogy, and the need for an effective feedback loop that contributes to improving the teaching practice. This chapter explores the Technological Pedagogical And Content Knowledge (TPACK) model, as well as evaluating teaching with the Four Quadrant (4Q) model and the Active Learning Cycle (ALC).

CHAPTER 6 – RESEARCH DESIGN/ METHODOLOGICAL APPROACH

This chapter details the research rationale for the mixed-methods approach used in this thesis to guide the study's data collection and analysis. Three stages of data collection – website analysis, an online survey, and interviews – were conducted in the pursuit of answers to the research questions.

CHAPTER 7 – DUAL MERITS AND CHALLENGES OF USING FF/TV IN TEACHING

This is the first of five results chapters presented in publication format. The current status of each paper is stated at the beginning of each chapter.

Two Sides of a Coin: The Balancing Act of Repurposing Feature Films and TV Series for Teaching

This chapter investigates the merits and challenges of using FF/TV in teaching regarding four key aspects: student (over)engagement, (mis)information retention, diversity/sensitivities accommodation, and communal/isolated learning contexts. It uses data collected through the survey and semi-structured interviews. Analysing the data from the perspectives of visual literacy, dual coding and cognitive load theories, it becomes clear that the pros and cons of using FF/TV in teaching are in fact interconnected, and the main role of the teacher is to balance these elements. Practical suggestions for pedagogy are detailed throughout discussions.

CHAPTER 8 – ACADEMIC DEVELOPMENT ON PEDAGOGICAL USE OF FF/TV

How Do University Lecturers Learn to Teach with Film? Formal and Informal Academic Development

This chapter explores formal and informal avenues of academic development (AD) to understand how lecturers learn to teach with film. A model of four key aspects is proposed as a research outcome, detailing lecturers' requirements and considerations regarding teaching with FF/TV. These include (1) access to relevant technologies and resources; (2) technological awareness and skills, including copyright; (3) knowledge of film literacy (e.g., cinematography) and trigger warnings; and (4) pedagogical knowledge related to FF/TV in disciplinary contexts.

CHAPTER 9 – TECHNOLOGICAL REQUIREMENTS FOR FF/TV INTEGRATION

The Role of Technological Knowledge in Pedagogical Integration of Film in Disciplinary Teaching at Universities

This study utilises the Technological Pedagogical And Content Knowledge (TPACK) model to analyse survey and interview data regarding lecturers' familiarity with a range of concepts and skills related to film production, delivery and integration technologies; methods of learning about technologies that help optimise their FF/TV use; and institutions' provision of, and support in implementing, various technologies integral to teaching with FF/TV. A modified framework is proposed to identify the pedagogical benefits of effective teaching with FF/TV at universities.

CHAPTER 10 – DEVELOPING PEDAGOGIES WITH FF/TV

University Teaching and the Language of Film: Optimising Multimodal Pedagogies through Film Literacy

This chapter analyses participants' responses through the lenses of Film Literacy, Cognitive Load and Dual Coding theories to address lecturers' practical concerns when repurposing FF/TV for teaching without formal training in this pedagogy. The findings

present practical recommendations ranging from FF/TV selection criteria, supporting materials and class activities, to different techniques of film screening and designing instruction. The result is a framework to guide lecturers' decision-making when using FF/TV in their teaching.

CHAPTER 11 – TEACHING EVALUATION

'Frankly, My Dear, I Do Give a Damn' – Evaluation of Teaching with Feature Film and Television Series at University

Through the lens of evaluation quadrangulation and action learning, this chapter examines the advantages and shortcomings of various evaluation practices (e.g., observation, self-reflection, peer review, student evaluation of teaching surveys, student assessment results and learning journals) used by university lecturers across disciplines. The study identifies three key themes crucial to developing more coordinated and effective evaluation practices as an integral part of teaching. These include pedagogical considerations (e.g., curriculum/disciplinary requirements, objectives of FF/TV use, associated learning activities); contextual considerations (e.g., student diversity in learning experience, lecturers' motivations & perspectives); and technical considerations (e.g., safety concerns/risk management issues, technology choices).

CHAPTER 12 – CONCLUSION

This concluding chapter summarises the research and addresses the three research questions. It situates the key findings in the current climate of higher education and discusses their implications for future practices involving FF/TV in university teaching. Practical recommendations are provided to individual lecturers, academic developers, and institutions. These include three types of technologies related to FF/TV use (production, delivery, integration); four pedagogical processes of teaching with FF/TV

(selecting, preparing, screening, designing instruction); four domains of future coverage for academic development (access to FF/TV resources, technological and media awareness and skills, film literacy, pedagogical development); and three principles for effective teaching evaluation (quadrangulation, application to all teaching phases, pedagogical-contextual-technological considerations in this application).

CHAPTER 2

RESEARCH BACKGROUND: FF/TV IN UNIVERSITY TEACHING

Understanding how the developments of film over time gradually became relevant to the educational context is key to establishing the premise of the project, which is to bring together the two separate entities of FF/TV and university teaching. This chapter provides an overview of the technological and ideological developments of filmmaking, from which modern audio-visual and narrative characteristics of film emerged. It then focuses on the affective dimension of film and the relationships between emotion, cognition and learning to highlight the discursive significance of filmmaking and film representations in the context of education. The chapter defines the media scope of feature films and television series (FF/TV) before shifting its discussion to the role of FF/TV in university teaching, the current film and media technology trends in higher education, the pedagogical merits and challenges of using FF/TV in teaching, and the practical aspects of pedagogies involving FF/TV.

2.1. Technological and ideological developments of filmmaking

2.1.1. Early days of moving images and film productions

The idea of adding motion to still images did not come from any one single source, but rather a wide range of performing arts such as theatre play and shadowgraphy, as well as multiple worldwide technological inventions attempting to capture pictures in motion dating from as early as the 1830s (Science and Media Museum, 2020). These inventions include stroboscopic animation (visual illusion of motion caused by continuous rotation), stereoscopic photography (visual illusion of depth enabled by presenting two slightly different images to each eye for binocular vision), instantaneous photography (instant exposure to create snapshots, even of moving

objects), chronotography (time-lapse photography), and the electrotachyscopography (an early motion picture system consisting of a projector, a peep-box viewer and several illuminated glass photographs on a rotating wheel – Figure 2.1). These various fields gradually led to the development of more film-focused inventions such as the Kinetoscope (Figures 2.2, 2.3), an early motion-picture exhibition system created by Thomas Edison and William Dickson in 1893, that pioneered the standard for cinematic projection before video technologies. The moving-image products or 'films' enabled by these inventions were only a few seconds or minutes long and solely visual, with no synchronised sounds/dialogue or narrative components.

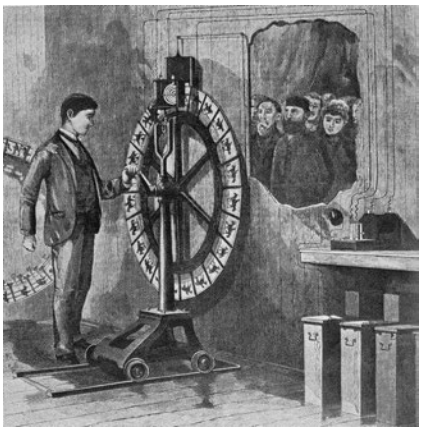

Figure 2.1. Ottomar's Anschütz's electrotachyscope (American Scientific, 1889)

Figure 2.2. The 1895 version of the Kinetophone in use (Tissandier, 1894)

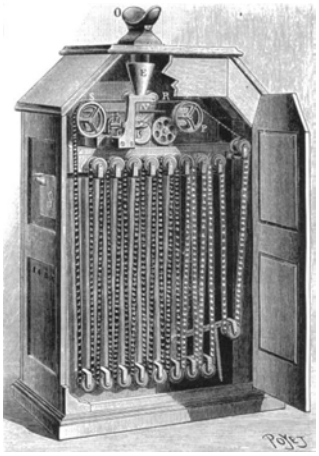

Figure 2.3. Interior view of Kinetoscope (Tissandier, 1894)

From the late 19th century, filmmakers started to introduce short and simple storylines into their films to help demonstrate how the camera could reproduce real life occurrences through actuality films or illustrated songs (Cook, 1990; Witmark & Goldberg, 1939). These advances led to the introduction of the Cinematographe – a combination of a camera, a projector and a film printer – by the Lumière Brothers in 1895. The Cinematographe is believed to be the first technology to enable regular public film screenings, commonly of around ten films (20 minutes altogether). These included documentaries and staged comedies, which yielded significant income for the film companies (Dirks, 2022).

This commercialisation of film screening practice soon fueled the rapid development of the motion picture industry in the 1900s (University of Minnesota Libraries Publishing, 2010). By the early 1910s, Europe, Russia and Scandinavia emerged as the leading film industries (Science and Media Museum, 2020). As cinemagoing became a popular paid activity, the film industries attracted substantial investments in production, distribution, marketing and exhibition. These included the construction of film studios and cinema theatres (Jones, 1998). The length of films increased and storytelling became their main appeal.

2.1.2. Peak of analogue technologies and shift to digital technologies

The considerable growth and consolidation of the film industry worldwide was made possible by continuous refinement of film technologies regarding colour, sound and aspect ratio. Prior to the successful tricolour process introduced in 1932, colours were manually added to black-and-white films using techniques such as hand colouring, toning, stenciling, tinting, and other costly and time-consuming methods including the Kinemacolor and Technicolour processes (Kramer, 2016; Read, 2009; Snoyman, 2017). Synchronised sounds such as dialogue and music were first added to the moving pictures using phonographic cylinders around the 1920s (Science and Media Museum, 2020).

The first standard aspect ratio of film was perforated 35mm film (width-to-height of the picture is 1.33:1) popularised by Thomas Edison in the Kinetoscope in the 1900s. In 1932 it was changed to 1.37:1 to accommodate optical sound technology (i.e., sound recordings stored on transparent film instead of separately on discs) (Hellerman, 2019; Science and Media Museum, 2020). In the 1930s and 1940s, the 'Golden Age of Hollywood' for the American film industry, almost every feature film had synchronised sound and some were in full colour (Robinson, 1994). Cinemagoing became an essential part of ordinary people's lifestyle, commanding super theatres with massive auditoriums with over 3000 seats and over 30 million cinema tickets sold weekly (University of Minnesota Libraries Publishing, 2010; Science and Media Museum, 2020).

The advent of television during the 1950s created serious competition for cinema. The immersive experience of widescreen cinema was heightened by adjusting to the larger aspect ratios of 2.59:1, 2.35:1 or 1.66:1 (Hellerman, 2019), and this

helped sustain public interest in the cinema for a short time. However, as film technologies progressed into portable and digital forms, home theatres became more common and cinema sales gradually shrank over the next three decades, well into the late 2000s (Bordwell, 2012; Science and Media Museum, 2020). Despite grand attempts at rescuing the dwindling industry with multiplex cinemas and 3D features, the shift to digital filmmaking, subsequent computer-based editing processes, and television and streaming technologies for film distribution has continued to steadily make analogue film technologies obsolete (Bordwell, 2012). Film viewing now can afford to be a much more personal and private activity than it used to be.

2.1.3. Ideological developments of film

Ideology is an 'imaginary misrecognition of the subject's relation to their real conditions of existence' (Althusser translated in Pearson & Simpson, 2005, p. 346). This imaginary misrecognition can be in the form of: (1) class or race-oriented belief systems; (2) illusory belief systems that contradict the true or scientific understanding of a topic; and (3) general interpretation of ideas and meanings (Williams, in Stamp, 2000). It is a common assertion among film theorists that when viewers passively consume a film, they either knowingly or unknowingly accept the 'misrecognition' presented to them in the film as if it was reality, which enables them to fully engage or identify with the story and enjoy the film (Stamp, 2000).

Although film did not always have recognisable narratives, the first ones that did – including black-and-white and silent productions dating back to the 1890s – carried political ideologies, subtexts and agendas in their representations. For example, the French silent film series *The Dreyfus Affair* (1899), consisting of 11 short films by Georges Méliès, reconstructed real political events involving espionage,

treason, suicide and murder. *The Dickson Experimental Sound Film* produced in 1894 for the Kinetophone was possibly the first film on homosexuality (Russo, 1981, 1987; DeFreitas, 2006). Film adaptations of famous novels such as Sherlock Holmes were also early popular productions, which borrowed fiction and storytelling to discuss a wide range of social topics and issues of the day (Kuhn & Westwell, 2020).

Due to early films' obvious and close association with frivolous pastimes of moviegoing and the entertainment industries, public attention was not immediately drawn to the social commentary and propaganda powers of film representations. Authorial intentions, or the power to 'speak' to the public both textually and contextually (Phillips, 2005), were not actively scrutinised or openly discussed, but rather lurked behind the entertainment facade. However, ideologies in film also are attached to the technologies that enable film production and distribution. As digital editing processes have made film production less expensive and cumbersome, terrestrial/satellite TV and on-demand services made film distribution more convenient and instant, more attention is now paid to analysing and understanding film ideologies (i.e., what is the film actually saying to us?).

Film falls into the broader context of video and media technologies that allow seamless and realistic presentation of visuals, sounds and texts to tell a story and convey a message. As we become increasingly surrounded by media representations, to be able to understand the message or to get the message across successfully has serious implications for our perspectives and decision-making. These abilities require a complex 'toolbox' of knowledge and skills about these audio-visual and narrative sources of information (Simon, 2009). This toolbox is the main rationale behind the discursive research field of media education, answering the questions of why media

education is necessary for both students and educators, and how educators should proceed with it (Buckingham, 2010, 2019; Fraser & Wardle, 2013).

2.2. Affective dimension of film

Recent decades have witnessed a rapid growth of film productions and subscriptions to film downloading and streaming services. Despite technological changes, the main purpose of public film consumption remains entertainment-focused, thus satisfying various emotional needs including boredom or stress (Wang & Ji, 2015). Businesses seeking to benefit from this emotional consumption of film demand objective tools that can identify and categorise the specific emotions that films are likely to evoke in viewers. Armed with this knowledge, services can match consumers to suitable content more effectively (e.g., Hanjalic & Xu, 2005; Soleymani et al., 2011; Wang et al., 2019; Wang & Ji, 2015). This is referred to as video Affective Content Analysis (ACA).

In the context of this research, although the emotional dimension of FF/TV representations plays a significant role in educators' choice to include them for student engagement (Jerrentrup et al., 2018; Kresse & Watland, 2016; Marquis et al., 2020; Peker et al., 2021), it can potentially undermine studets' cognitive abilities if not carefully integrated into instruction and learning activities (e.g., Barnett et al., 2006; Butler et al., 2009; Fleischer, 2018; Madsen, 2014; Myers & Abd-El-Khalick, 2016). Therefore, a more in-depth understanding of how affective content in FF/TV influences the audience's emotions and subsequently their critical thinking would assist educators in analysing and assessing the suitability of FF/TV content for teaching.

2.2.1. Direct and indirect approaches to film/video Affective Content Analysis (ACA)

There are two common approaches towards the goal of developing an objective video ACA tool, one directly from the audio-visual features of the film and one indirectly

from the audience's evoked emotional states upon viewing the film (Wang et al., 2019). The direct/explicit approach analyses the affective content based on the expected emotion (i.e., the emotions that film producers intend to evoke in their audience), while the indirect/implicit approach focuses on analyses based on the emotion and feelings that the audience actually report feeling upon viewing the film (Hanjalic & Xu, 2005). Nack et al. (2001) devised the algorithmic study of Computational Media Aesthetics (CMA) that aims to determine the relationship between the audio-visual elements in films and audiences' evoked emotional states based on the conventions that regulate the techniques of filmmaking (i.e., film literacy) such as cinematography, mise-en-scène, and editing; filmmakers can choose to follow or break the rules of film grammar (subsequently satisfying or challenging the audience's expectations) to convey meanings and messages. Based on the results of CMA analysis, researchers have been able to effectively match the audio-visual features with the emotional states of the audience (Hanjalic & Xu, 2005).

Figure 2.4 illustrates the key elements of each ACA approach. The process consists of analysing the emotional descriptors, the film/video content from the video database (i.e., stimulus), users' spontaneous non-verbal responses (i.e., evoked emotional responses), and their interconnected relationships (Wang & Xang, 2010). The emotional descriptors are identified based on certain theoretical emotional categories aiming to comprehensively represent viewers' subjective evaluations and emotional responses of the films' affective content. The film content consists of the audio-visual features that are used for storytelling in its narrative content. The viewers' spontaneous non-verbal responses can include both their physiological and behavioral responses upon viewing the film content. The pathway leading from the film content

to the emotional descriptors illustrates the direct ACA approach, while the pathway from viewers' spontaneous non-verbal response to the emotional descriptors denotes the indirect ACA approach.

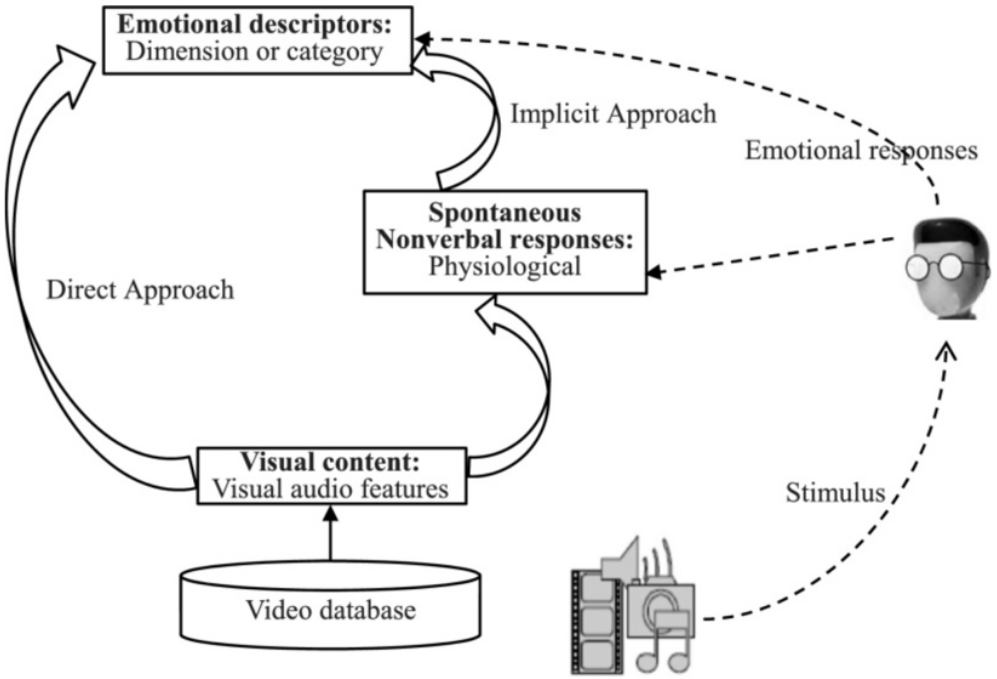

Figure 2.4. Components of two major approaches to affective content analysis (Wang & Ji, 2015)

2.2.1.1. Emotional descriptors: Discrete approach and dimensional approach

Defining and pinning down emotions remains a vexed issue, and there is little consensus amongst scholars on how this should be done (Pessoa, 2008; Plass & Kaplan, 2016). In general, though, emotions are usually assessed and measured in a discrete or a dimensional way.

Scholars who subscribe to the discrete approach claim that there is a list of fundamental emotions that can be identified; however, there is little agreement over what specific emotions belong to that list. The most widely cited list was proposed by Ekman (1999) who included happiness, sadness, surprise, disgust, anger, and fear (Irie et al., 2010; Sun & Yu, 2007; Teixeira et al., 2012; Yazdani et al., 2009). Over time,

other emotions have been added, such as amusement (Arifin & Cheung, 2008), excitement (Watanapa et al., 2008), horror (Money & Agius, 2009; Zhao et al., 2011) and boredom (Zhao et al., 2011).

The dimensional approach perceives emotions as having multiple dimensions that seamlessly and continuously transition from one space to the next. Similar to the discrete approach, advocates of the dimensional approach have different views about naming the dimensions. Wundt's (1905) influential work identifies the dimensions of arousal, valence and dominance. Arousal signals the initial activation of an emotion characterised by excitement, or an increase in a person's physiological activity in moving from a passive to active state. Valence is the dimension against which the quality (e.g., good or bad, pleasant or unpleasant, pleasure or displeasure) of the emotion is measured. Dominance measures the dominant (action or reaction-inducing) or submissive (tending to be internalised) nature of the emotion, but this dimension is difficult to determine, and is thus often omitted in the variations within the dimensional approach. There are variations within the dimensional approach to measuring emotion, such as using different sets of labels (e.g., natural-temporal-energetic dimensions – Canini et al., 2013) or dividing the dimensions into more categories (e.g., positive and negative valence, high and low arousal – Koelstra & Patras, 2013; Soleymani et al., 2012; Wang et al., 2019) or simply using continuous dimensional descriptors of emotion (e.g., Cui et al., 2013; Hatti et al., 2011).

Russell's (1980, 2003) dimensional model of emotion is a nuanced and comprehensive way to articulate the complexities of measuring emotion as it integrates both discrete and dimensional approaches (Figure 2.5). It simplifies the dimensions to valence (experienced on a spectrum between pleasure and displeasure)

and arousal (experienced on a spectrum between activation and deactivation). Then it incorporates a discrete list of individually identified emotions into the dimensional space. For example, the emotions of elation or happiness occur when a person is experiencing medium arousal towards activation and high valence towards pleasure; the emotions of serenity or contentment occur when arousal is medium towards deactivation and valence is high towards pleasure.

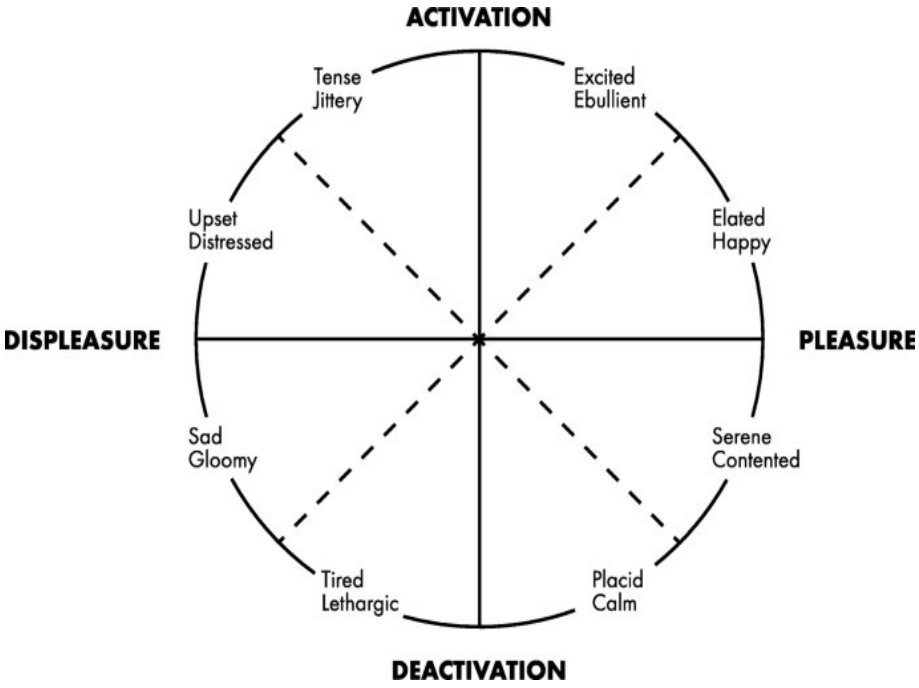

Figure 2.5. Russell's dimensional model of emotions (2003)

2.2.1.2. Audio-visual features of film/video content

Film or video content consists of audio-visual features, so the affective content can be assessed based on the visual data and auditory data. Within the visual data domain, the features that can be manipulated to influence the audience's emotions include tempo, motion, shot, lighting and colour (Wang & Ji, 2015). Within the auditory data domain, speech-related, music-related and environmental sounds are the main controllable sources to communicate emotions to the audience (Lartillot, 2011; Scherer, 2003). Since multiple studies in cinematography and psychological research

have demonstrated the relationship between audio-visual cues and the affective film content (Hanjalic & Xu, 2005; Kang, 2003; Rasheed et al., 2005; Wang & Cheong, 2006; Wang & Ji, 2015), cinematic principles and psychological findings are key to understanding how visual and auditory features are used to characterize the affective dimension of film content.

Visual Features

The visual elements in film that are most connected to inducing emotions include tempo, motion, shot, lighting, and color.

Tempo, motion and shot

Tempo in film refers to the quantity of camera movement and subject movement, or the quantity of motion shown, in each shot and between shots (Plantinga & Smith, 1999). Tempo can be adjusted by manipulating the shot duration (i.e., long vs. short), shot transition (e.g., cut, fade, dissolve, wipe), motion intensity (i.e., smoothness of frame transition), motion dynamics (e.g., shot type, shot pace, camera and object relational movement), camera distance and visual excitement to inject a variety of emotions accordingly (Adams et al., 2000; Canini et al., 2013; Cui et al., 2013; Irie et al., 2010; Wang & Cheong, 2006; Xu et al., 2013; Zhang et al., 2010). For instance, a dolly zoom shot or a zolly shot (in which the camera is dollied back and forth from the object while simultaneously zooming in the opposite direction so that the size of the object always remains the same in the frame), can create an overwhelming sense of uneasiness and uncertainty about the future event (Liang et al., 2020). Generally, a high level of motion or tempo intensity on screen correlates with a high level of arousal evoked in the audience (Detenber et al., 1998; Hanjalic & Xu, 2005; Simons et al., 1999). Shorter shots and rapid shot transitions result in a high tempo for action or

plot development and therefore can cause stress or excitement (high arousal) in the audience, while longer shots convey a lower tempo associated with slower and more relaxed emotions (low arousal) (Choroś, 2009; Teixeira et al., 2012; Wang & Cheong, 2006).

Lighting

Lighting in film is a powerful cinematic tool that controls the spectral composition of light and the contrast between light and dark. It can significantly affect the appearance of all scene elements as well as the dominant mood of the scene (Cainini et al., 2012; Teixeira et al., 2013). Depending on the overall light level and proportion of shadow area (Wang & Cheong, 2006), there are two main lighting techniques – high-key and low-key lighting – that can be used to convey the scene's mood. High-key lighting is essentially used to soften the contrast between light and dark and make everything visible, creating a bright and warm atmosphere and generating pleasant or joyous feelings (low arousal, positive valence). Low-key lighting, typically seen in horror films, employs a range of techniques such as shadow play, dim lighting or dark environments to generate ominous, mysterious, intriguing, scary, sad, or suspenseful scenes (high arousal, negative valence) (Bordwell et al., 1997; Keast, 2014; Wang & Cheong, 2006; Zettl, 2013).

Colour

When color became possible in film, it also became a significant cinematic contributor to communicating emotions to the audience. The brightness of colour is closely related to valence, while colour saturation is linked to arousal. The combination of these two qualities is called the 'colour energy', which can be manipulated to influence valence and arousal (Valdez & Mehrabian, 1994). Similar to lighting, high colour energy can

induce more positive moods, whereas grey frames convey more negative feelings. A wide range of other colour-related features, such as colour intensity, colour weight, colour heat/temperature, colour layout and colour activity (Canini et al., 2013; Kang, 2003; Sun & Yu, 2007; Teixeira et al., 2012; Yazdani et al., 2011; Zhang et al., 2010), are often included in analyses of film affective content.

Audio Features

Although film is often characterised by its visual features, some studies suggest that its auditory data may provide more information regarding affective content (e.g., Wang & Cheong, 2006). Audio or acoustic features in film often consist of speech, music and environmental sounds (Bachu et al., 2008; Lu et al., 2001; Radmard et al., 2011).

Speech

Due to the predominance of speech in characterising a video's emotion as well as extensive research in speech emotion recognition, much work has been invested in speech feature extraction. Studies investigating psycho-physiological phenomena such as vocal muscle movements, air intake, vocal inflections, vocal energy (i.e., loudness), voice quality, stress and intonation patterns, and modulation or pitch characteristics change with emotions (Watanapa et al., 2008; Williams & Stevens, 1981). These speech features serve different roles in providing information about associated emotions. Pitch is a reliable tool for detecting emotion (Xu et al., 2913) and speed and loudness of speech are good indicators of emotions' meaning (Scherer & Zentner, 2001). In general, loudness and speed are related to arousal levels, while other features such as inflection and pitch relate to valence (Hanjalic & Xu, 2005; Picard, 2000).

Music and environmental sounds

Studies from a number of fields such as psychology, informatics, multimedia and music research have strongly supported the relationship between music and emotion (Eerola and Vuoskoski, 2013; Yang & Chen, 2012; Zhang et al., 2010). Musical features such as tempo (fast vs. slow rhythm – Fernández-Sotos et al., 2016), tonality (major vs. minor mode – Husain et al., 2002), timbre (bright vs. dull tone – Gabrielsson & Lindström, 2010), dynamics (loudness/volume – Gabrielsson & Lindström, 2010), and pitch (frequency of musical notes – Illie & Thompson, 2006) are used by song writers and chosen by filmmakers to evoke specific? emotions in the audience (Juslin & Sloboda, 2001; Lartillot, 2011; Liu et al., 2003; Zhang et al., 2010).

2.2.2. Personalisation in film ACA

So far, the discussion of how audio-visual features in film ACA is made possible by the unrealistic assumption that all viewers have generic or universal emotional reactions to affective content in film. In reality, the opposite is true (Wang et al., 2019). Appraisal theory (Roseman, 1984; Scherer, 2005) reveals that emotional reactions are formed according to individuals' personal subjective judgement of affective stimuli presented to them. People also have different levels of emotional regulation that affect their emotional expression and thus presentation of emotion in response to affective content (Wang et al., 2019; Wang & Ji, 2015).

In the context of pedagogies involving FF/TV, especially when affective content is included, a separate discussion on emotion in relation to human learning or cognitive processing is helpful in bridging the gap between what emotions educators intend to evoke in learners (i.e., expected emotion) and what different individual learners may respond to FF/TV affective content (i.e., actual emotion).

2.2.3. Emotion and cognitive processing

Early theories about emotion (James, 1884; Lange, 1885) explored the relationship between emotion and neurophysiology, which created a foundation for later theorists to investigate the role of cognition in naming emotions (Schachter & Singer, 1962) and in processing emotions (Lazarus, 1991). Despite a long history of affective neuroscience research, however, scientists are yet to pinpoint the neural basis of human emotions (Plass & Kalyuga, 2019). Traditional neuroscience studies related to emotions suggested that the amygdala, hypothalamus, cingulate cortex, primary frontal cortex, and to a lesser extent the thalamus and hippocampus (Figure 2.6), are involved in the neural processing of emotion (Dalgleish, 2004). Essentially, there are two major pathways through which different types of emotion are processed in the brain. The slower pathway is from the thalamus via the cortex to the amygdala; the faster pathway is directly from the thalamus to the amygdala. The 'stop 'at the cortex in the slower pathway is believed to be where cognition is activated, hence this is the preferred pathway for learning and schema formation. In contrast, the faster pathway is used in life-threatening situations in which there is not enough time for a conscious evaluation of the stimulus in order to form a reaction (Cunha et al., 2010).

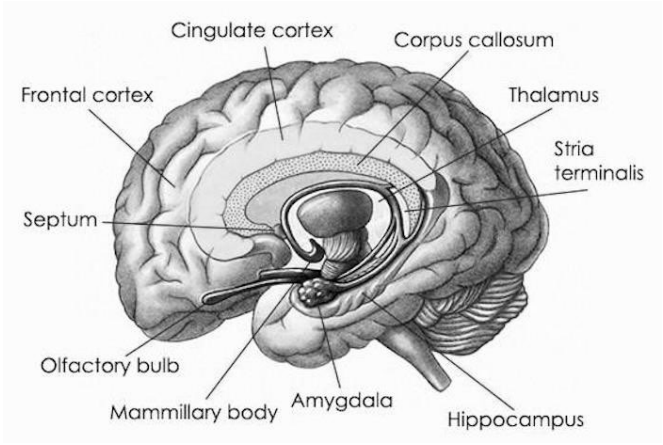

Figure 2.6. Brain regions associated with schema formation (Creative commons)

Underlying this hypothesis of emotion-processing pathways is the assumption that there are regions of the brain dealing with cognition and emotion separately; however, this is contested by another school of thought that argues such separation is impossible given the complex, interconnected brain networks (Damasio, 1994; Pessoa, 2008). This school of thought posits that rational thoughts include emotional inputs and vice versa because both cognitive and affective regions are activated simultaneously (LeDoux & Brown, 2017). This means emotions may not be an original part of the subcortical regions such as the amygdala but are instead a by-product of the cognitive processing that takes place in the cortical system (LeDoux & Brown, 2017). This is turn supports Russel's (2003) hypothesis that emotional reactions are psychologically constructed, instead of being biologically or socially determined. This line of reasoning explains the ebb and flow of our dynamic emotional episodes, and supports the interconnectedness of cognition and emotion, which has important implications for learning and instruction in relation to affective content (Hawkins, 2017; Plass & Kalyuga, 2019).

2.2.3.1. Emotional design for learning

Many current studies of 'emotional design' have explored how educators can generate positive emotions in the learning environment to facilitate higher learning outcomes or more effective acquisition of knowledge and skills, without imposing additional processing onto students' cognitive load (e.g., Heidig et al., 2015; Homer et al., 2018; Loderer et al., 2019; Mayer & Estrella, 2014; Plass & Kaplan, 2016; Um et al., 2012). Design elements that have been found to achieve that goal include round or face-like shapes, warm colours and increased music tempo (Loderer et al., 2019; Park et al., 2015a, 2015b; Um et al., 2012). A smaller number of studies, mostly in medical

education, have investigated the links between emotional states emerging directly from learning materials and activities and student performance (e.g., Fraser et al., 2014). They found that students experiencing negative emotions, such as stress, powerlessness and nervousness from a patient's death, did experience higher cognitive load and lower quality learning outcomes. However, such negative emotions contributed to the development of empathy required for many disciplines and professions (Blasco & Moreto, 2012; Happel-Parkins & Esposito, 2015; Marcus & Stoddard, 2007).

These findings can help explain the role of affective content in FF/TV for learning in that emotions, especially those with high arousal and low valence, could cause a higher cognitive load and thus more time-consuming knowledge acquisition – students need to process the affect and the information. However, this can result in deeper learning, because processing emotions activates several brain regions (Jukić, 2019).

2.3. Media and Education

Although film has its own unique trajectory in terms of technological and ideological developments – including its significant element of emotion – the discussion of film in education is often integrated into that of media education more broadly. It is generally agreed that learners need to be educated about media in order to become informed consumers and responsible creators of media representations (Buckingham, 2019; Hobbs, 2020; Kellner, 2020; Kellner & Share, 2019; Ku et al., 2019; Mirra et al., 2021; Share et al., 2019; Tagg & Seargeant, 2021). Instead, the conversation is focused on determining how much media education is necessary and how it can provide guidance yet respect the diversity in learners' agency; this is especially important with regard to

the participatory media culture of 'Web 2.0' or Media 2.0 (social media, photo and video sharing, blogging, online gaming, and other user-generated content).

As opposed to Media 1.0 (analogue media, cinema, television and other top-down 'mass' media), Media 2.0 has been often celebrated as a crossing point at which media reception transitions from hierarchical regulation and restriction to democratisation, liberation and empowerment of the people (Burkingham, 2010; Gauntlett, 2007). Some authors even go so far as to suggest that learners are now tech-savvy 'digital natives' (Prensky, 2001) or media and visually literate 'homo zappiens' (Veen & Vrakking, 2006) who require no instruction, can multitask effectively, learn more from hands-on content creation and distribution rather than from their teachers, and may even teach older generations about technology (see, for example: Clark & Ernst, 2009; Rosen, 2007; Rowlands et al., 2008; Gardner & Davis, 2013; Marateo & Ferris, 2007; Selwyn, 2009; Skiba & Barton, 2006). Conversely, educators who do not participate in the Media 2.0 culture themselves are also thought to eventually lose the 'right to teach' (Gauntlett, 2007; Ito et al., 2008). This perspective, that subscribes to the 'Californian ideology' (Barbrook & Cameron, 1996), therefore calls for an entire shift in research and pedagogy to address the fundamentally new and different capabilities that media 2.0 technologies are offering to formal education (Teräs et al., 2011).

However, a more critical look at the statistics about youth participation in new media reveals a very uneven distribution of that participation, in which only a small fraction of socially elite students actually have the means and skills to partake in these 'empowering' activities (Auchard, 2007; Hargittai & Walejko, 2008; Lenhart et al., 2007; Warschauer, 2003). Moreover, an overwhelming number of empirical studies

have definitively refuted the overgeneralised claims about current students' transmedia skills, multiliteracies and general digital abilities (Kirschner & Bruyckere, 2017; Romero et al., 2013; Wang et al., 2014). Rather, higher web-savviness correlates to higher financial and educational backgrounds (Hargittai & Hinnant, 2008; Hargittai, 2010), which further supports the reality of 'digital divides' (Buckingham, 2010; Jenkins et al., 2006). The unhelpful polarisations of Media 1.0 vs. Media 2.0 or digital natives vs. non-natives has also widened the gap of 'digital divides' in policy-making practices such as the proliferation of new courses and qualifications advertised to prepare 'low-achievers' for the future tech-driven workplace, while highly-ranked universities continued to select students based on top-down examination results (Buckingham, 2010; Cohen, 1990; Dijk, 2009; Ross, 2003).

Some suggest the goal of media education is narrowing the 'participation gap' towards more equal student participation in all media ecosystems, not only regarding access to technology, but – more importantly – regarding the relevant learning and training (Hargittai & Hinnant, 2008; Hargittai, 2010; Hargittai & Walejko, 2008). This means that more attention should be directed to critically assessing how the new opportunities and challenges that both new and older media technologies are affecting student learning and manifesting in education policy-making (Burkingham, 2010; Kirschner & Bruyckere, 2017). This then in turn should translate to developing guidance and resources to address the various media and cultural literacies (e.g., knowledge, skills, attitudes) that students now require to become active and critical participants in media analysis (theory) and creation (practice) (Burkingham, 2010; Jenkins et al., 2006).

On the spectrum between media theory and practice, film in education

occupies the domain in which media analytical abilities are applied to learning disciplinary knowledge and skills that may involve film production, depending on the stated learning outcomes (Chambers, 2019; Jorm et al., 2019). Film education in this context, therefore, refers to the learning and teaching of different literacies required for film analysis, judgment and evaluation, as well as for the application of those literacies to achieving disciplinary learning outcomes (Achugar & Tardio, 2020). Despite sharing the broad objectives of media education such as raising awareness of media literacies and enabling meaningful integration of media technologies into education, specific characteristics unique to film as an art form are repurposed into instructional materials (Chambers et al., 2018). These characteristics include the narrative, audio-visual, affective, mass-produced and consumed, entertainment-oriented (or fictional, as opposed to non-edited objective recording of events) forms of media representation (Chambers et al., 2018; Jorm et al., 2019).

2.4. FF/TV in university teaching

In the contemporary context of the 'digital university', where intersecting new technologies shape the landscape of teaching and learning (Peters & Jandrić, 2018), lecturers are increasingly expected to innovate and mediatise their pedagogies to showcase a more inclusive 'new communication order' of literacy (Daniels et al., 2020; Snyder, 2001), and to draw on the high consumption of mixed media by many student populations (Fraser, 2018; Mayes et al., 2011). Towards these ends, institutions are increasingly encouraged to provide academic development for lecturers in the domain of integrating media technologies into teaching (Altbach et al., 2019).

However, there appears to be a mismatch between how universities, and academics themselves, respond to these trends. On the one hand, universities seem

more interested in risk management in areas such as copyright infringement and academic dishonesty (Buckley & Cowap, 2013; Le Heron, 2001; Sagnak & Baran, 2020), rather than the pedagogies integral to using media technologies. Universities in general seem to have provided only limited support to lecturers in harnessing the educational and social implications of media technologies (Goodfellow & Lea, 2013). Instead of investing in long-term sustainable training opportunities and resources to lift the digital competency of existing lecturers, universities tend to hire casuals and 'third space professionals' to fill in short-term roles (Smith & Guthrie, 2020; Whitchurch, 2015). On the other hand, many academics appear reluctant to learn to use the new tools, especially without institutional commitment and support (Birch & Burnett, 2009; Sánchez-Prieto et al., 2019; Veletsianos et al., 2013). Others who welcome the tech-driven changes by integrating multimedia such as FF/TV into their teaching have been largely left to themselves to experiment and develop their pedagogy via self-taught methods (Chadha, 2020; Hemmings et al., 2010).

Amid all these trends, FF/TV have emerged as a popular candidate for practising technology-enhanced teaching thanks to their relevant and relatable, rich and multimodal, multidisciplinary, and technologically accessible characteristics (Andrist et al., 2014; Holland, 2014; Lorenzo-Lledó et al., 2020; Marquis et al., 2020). Compared to in the 1950s when the medium of film was mostly recognised within the formal discipline of film studies (Kuhn, 2019), the parallel world of film today (Sigler & Albandoz, 2014) is relatively commonplace in the classroom context across a wide array of disciplines, fueled by the requirement for student engagement and satisfaction (e.g., Argynbayev et al., 2014; Dune et al., 2016; Jerrentrup et al., 2018; Kresse & Watland, 2016; Marquis et al., 2020; Peker et al., 2021). Examples include

medical education (Cambra-Badii et al., 2021; Gonçalves et al., 2021; Recupero et al., 2021); sociology (Collett et al., 2010; Livingston, 2004); math (Beltrán-Pellicer et al., 2018; Peker et al., 2021; Reiser, 2015); language teaching (Birulés-Muntané & Soto-Faraco, 2016; Thaler, 2014; Viebrock, 2016); history (Knickerbocker, 2014; Marcus & Stoddard, 2009; Stoddard & Marcus, 2010); chemistry (Pekdag & Le Maréchal, 2010; Wink, 2011); biology (Holland, 1946); economics (Diaz Vidal et al., 2020; Leet & Houser, 2003; Sexton, 2006); political science (Cristine et al., 2017; Holland, 2014; Swimelar, 2013); business and management (Bay & Felton, 2012; Black et al., 2019; Kresse & Watland, 2016; O'Boyle & Sàdona, 2014); law (Grubba, 2020; Levey, 2015; O'Malley, 2011); geography (Algeo, 2007; Madsen, 2014; Sigler & Albandoz, 2014); religion (Thoma, 2015; Yamada, 2019); architecture (Bergera, 2018; Mumcu, 2020); and music (Lum, 2009).

Within these disciplines, lecturers seem to use FF/TV to pursue various teaching and learning topics and goals. Some examples include ethics (Blasco et al., 2018; Searight, 2020); empathy (Blasco & Moreto, 2012; Happel-Parkins & Esposito, 2015; Marcus & Stoddard, 2007); media literacies (Holland, 2014; Huczynski & Buchanan, 2004; Sigler &Albandoz, 2014); critical/analytical/synthesing thinking skills and deep learning (Bright, 2015; Olson et al., 2016; Wilson et al., 2017); research methods (Cremer et al., 2012; Tan & Yiu-Chung, 2004); intercultural understanding (Pandey & Ardichvili, 2015; Rajendram & Govindarajoo, 2016); reading and writing skills (Barnes, 2006; Madhavi & Vijaya, 2016; Pelton, 2013); and profession-specific skills (Ber & Alroy, 2002; Lumlertgul et al., 2009).

Although FF/TV's provides versatility and interdisciplinarity there is the challenge of systematically sharing and organising all relevant knowledge about

teaching with FF/TV, as each discipline or subject would likely bring up different perspectives about methods and their encounters with issues and problems (Beltrán-Pellicer et al., 2018). Faced with prevalent skepticism about using popular culture in the classroom from some institutions, students and lecturers (Broughton, 2008; Marquis et al., 2020; Sealey 2008), most literature on the topic therefore portrays FF/TV use in university teaching as largely driven by individuals, experiment-based, improvised and self-assessed with minimal guidance or support (Andrist et al., 2014; Marquis et al., 2020; Peacock et al., 2018). Regardless, the rich and interdisciplinary wealth of knowledge accumulated from these self-reported studies still holds substantial value for research that seeks to understand the role of FF/TV in higher education. To build a foundation to guide the development of this research, the following sections are dedicated to reviewing, categorising and discussing the merits, challenges and pedagogy of university teaching with FF/TV.

2.4.1. Merits of using FF/TV in teaching

FF/TV have been reported to contribute to several aspects of teaching and learning quality. These can be categorised into: (1) student engagement; (2) content visualisation/illustration; (3) skills training; and (4) model for film production.

2.4.1.1. Student engagement

FF/TV have been found to intrigue and engage students through compelling storytelling that effectively appeals to their senses and emotions, helping them open up more easily to discussions and enabling deep learning in later stages (Bluestone, 2000; Briggs, 2011; Burton, 2008; Donnelly, 2014; Duducu & Chapman, 2018; Fleischer, 2018; Greenbaum, 1999; Swimelar, 2013; Thomas, 1992; Waalkes, 2003). Consistent integration of FF/TV into class resources and activities may also motivate student

diligence in attending and/or preparing for class (Dune et al., 2016; Lorenzo-Lledó et al., 2020; O'Boyle & Sandona, 2014; Simpson & Kaussler, 2009; Smith, 2009).

As opposed to viewing FF/TV individually, the communal activity of viewing FF/TV in class has been found to reduce participation anxiety and group domination, thus promoting more equal student participation and improving group cohesion (Anderson, 1992; Fleischer, 2018; Leet & Houser, 2003; Masters, 2005; Smith, 2009). Including FF/TV in learning materials has been found to make stressful and cognitively demanding subjects, such as mathematics (Peker et al., 2021) or theory writing (Pelton, 2013), more approachable or at least less intimidating for students (e.g., Bright, 2015; Calcagno, 2015; Madsen, 2014). In these contexts, the presence of FF/TV was found to help students feel more positive about the subject, enable more active engagement with other learning activities, and improve their performance in assessments. Additionally, integrating FF/TV into learning activities has also been suggested to create a 'safe zone' for exploring 'out there' issues (Fieschi et al., 2015) and an inclusive environment in which a variety of learning needs or preferences are accommodated (e.g., Bluestone, 2000; Brown et al., 2017; Cabaniss, 2011; Clinchy, 1995; Enns, 1993; Fleischer, 2018; Luccasen & Thomas, 2010); this appears to be especially the case for learners who are new to the subject/discipline and for at-risk learners by providing a familiar or accessible entry point (Madsen, 2014; Travis, 2016; Vetrie, 2004).

In general, integrating FF/TV in classroom teaching enhances student engagement by adding positive qualities such as affective content for emotional engagement and removing negative qualities such as learning anxieties. The majority of studies on FF/TV in teaching over the decades, irrespective of the quality or

effectiveness of the associated instructional design, report high levels of student satisfaction and enjoyment of the course (e.g., Argynbayev et al., 2014; Fails, 1988; Jerrentrup et al., 2018; Kresse & Watland, 2016; Marquis et al., 2020; Pandey, 2012; Peker et al., 2021; Smith, 1982)

2.4.1.2. Content visualisation

In the classroom setting, FF/TV can help students visualise abstract concepts such as intercultural understanding or discipline-specific ideologies, like human rights or sustainability, as well as demonstrate real-life issues such as medical conditions or social attitudes that are otherwise difficult to express verbally or showcase physically (Clemens & Hamakawa, 2017; Dąbrowski, 2016; Fleischer, 2018; Grubba, 2020; Jozwiak, 2015; Kanellopoulou et al., 2019). FF/TV 's plots and subplots are generally effective in integrating multiple perspectives or dimensions of a topic to demonstrate the underlying nuances and complexities (Anderson, 1992; Corbitt, 1998; Flemming et al., 1990; Karasik et al., 2014; Marshall, 2003; Mead & Scharmann, 1994; O'Boyle & Sandona, 2014; Ruggiero, 1996; Smith, 2009; Tisdell & Thompson, 2007). Similarly, FF/TV can be valuable for providing a broader context connecting social, cultural, political or historical backgrounds of an issue (Arroio & Farías, 2011; Bluestone, 2000; Kanellopoulou et al., 2019), or introducing unfamiliar subjects or changes in an appealing way (Aoki & dos Santos, 2020; Faidley, 2021; Marshall, 2003; Valeriano, 2013).

FF/TV can explore issues that belong to different disciplines, because storylines can stretch over different domains of life, from professional to personal, involving different characters from various backgrounds. They thus make good materials for interdisciplinary courses or approaches (Arroio, 2007; Leet & Houser, 2003). Character-

driven FF/TV can provide good opportunities for case studies thanks to detailed and elaborate representations (e.g., Arroio, 2007; Bluestone, 2000; Cozine, 2015; Jerrentrup et al., 2018; Karasik et al., 2014; O'Boyle & Sandona, 2014; Yamada, 2019). For example, Jerrentrup and colleagues (2018) described using the television series *House MD* to teach medical students about diagnosing rare diseases. The diagnostic talents of the main character were used to illustrate diagnostic and clinical skills in an interesting way, whereas his personality quirks were analysed to invite students to reflect on their own behavior as clinicians and their interpersonal skills in dealing with colleagues and patients.

2.4.1.3. Skills training

FF/TV have been found to hold high pedagogical values in activating a wide range of cognitive processes. They are considered good resources for forming lasting memories (Craik & Lockhart, 1972; di Palma, 2009; Donnelly, 2014; Karasik et al., 2014; Masters, 2005; Mathews et al., 2012; Smith, 2009) as well as developing higher order skills such as critical and analytical thinking, creativity in problem-solving, decision-making, perspective-taking, analytical thinking, risk-taking, scenario-coping and observation (Bay & Felton, 2012; Bluestone, 2000; Djamaa, 2018; Dowd, 1999; Karasik et al., 2014; Leet & Houser, 2003; Marquis et al., 2020; Pan et al., 2020; Smith, 2009; Tan & Ko, 2004; Verdis et al., 2021). Integrating FF/TV into teaching has also been found helpful in developing multiliteracies such as visual literacy, film literacy and media literacy in students (Bonsignori, 2018; Masters, 2005; O'Boyle & Sandona, 2014; Smith, 2009; Viebrock, 2016) and enabling interdisciplinary learning that transcends the boundaries between academic fields (Leet & Houser, 2003; Flemming et al., 1990; Yeates et al., 2011). Many teachers are interested in FF/TV's ability to effectively teach students

about ethical issues, cultivate empathy and strengthen their sense of morality alongside knowledge and skills acquisition (Berger & Pratt, 1998; Bluestone, 2000; Donnelly, 2014; Marshall, 2003; Masters, 2005; O'Boyle & Sandona, 2014).

These skills, abilities, competencies and literacies then enable a deeper and more nuanced understanding of the subject matter compared to written or printed texts (Anderson, 1992; Bay & Felton, 2012; Bonjour, 2018; Leet & Houser, 2003; Smith, 2005; Smith, 2009). Such understanding contributes to challenging students' ideologies, shaping their perceptions of the targeted issues and developing their general worldviews, as well as fostering their professional agency, resilience and self-directed learning (Anderson, 1992; Fisher, 1992; Flemming et al., 1990; García-Acosta et al., 2019; Loewen, 1991; Pan et al., 2020; Trede & Flowers, 2020). Since FF/TV representations resemble real scenarios detached from the classroom setting, they aid students in transferring newly acquired knowledge and skills into practice (Argynbayev et al., 2019; Black et al., 2019; Sternberg, 1987; Umanath et al., 2012).

2.4.1.4. Model for media analysis and video/film production

Many lecturers use FF/TV to model good filmmaking techniques for students even outside the disciplines of film studies, media studies and screen production courses to create videos or films as part of their assessment (Dune et al., 2016; Hu et al., 2011; Pearson, 1978; Perry, 2018; Puspawati et al., 2021; Verran, 1992). Besides discipline-specific knowledge and skills, lecturers often aim to develop media and visually literate individuals through providing students with hands-on experience in a more thorough comprehension and appreciation of film production, a more critical approach to interpreting FF/TV and other media representations, and marketable filmmaking skills (Perry, 2018; Puspawati et al., 2021). Despite encountering obstacles in terms of time,

facilities and resources, self-confidence and teamwork in the production process, students have reported finding the learning experience fun and instructive (Dune et al., 2016).

2.4.2. Challenges of using FF/TV in teaching

Alongside their merits as instructional materials, many challenges have been reported regarding FF/TV integration into teaching. These can be categorised into: (1) negative impacts of FF/TV attributes on teaching and learning; (2) barriers to sourcing and preparing FF/TV for teaching; and (3) general skepticism and inadequate institutional provision of resources for lecturers.

2.4.2.1. Detrimental effects of FF/TV attributes on teaching and learning

Many authors report, or warn against, problems that arise mostly from some inherent qualities of FF/TV. Most audio-visual components of FF/TV are constructed and skilfully manipulated by producers to convey a particular message and elicit certain emotions to the targeted audience (Wang et al., 2019; Wang & Ji, 2015). While there are many educational merits to how FF/TV are created and consumed, their representations do not often prioritise verifiable facts, which consequently can reinforce detrimental stereotypes, misrepresentations and spread misinformation if consumed without critical guidance or prior knowledge of both film grammar and the subject matter (Barnett et al., 2006; Butler, 2009; Kuzma & Haney, 2001; Madsen, 2014). FF/TV narratives with the assistance of affective content enabled by auditory and visual effects can sometimes be too compelling and powerful for the audience to step back and discern their inaccuracies, weak arguments, hidden agendas, simplifications, distortions, fabrications or half-truths and biases (Aikenhead, 1988; Barnett et al., 2006; Butler et al., 2009; Fleischer, 2018; Myers & Abd-El-Khalick, 2016; Reis & Galvao,

2004). When this happens, viewers (i.e., students) who consume FF/TV content passively (or are allowed to do so by their instructors) would likely abandon or at least loosen their critical thinking and accept the FF/TV's ideologies (Stamp, 2000). They can therefore form lasting memories of misconceptions due to the impact of audio-visual and affective content on memory construction (Craik & Lockhart, 1972; di Palma, 2009; Donnelly, 2014; Karasik et al., 2014; Myers & Abd-El-Khalick, 2016; Rantzen & Markham, 1992). FF/TV representations without proper guidance can confuse or misguide students, leading to the retention of misinformation.

Student populations are becoming increasingly diverse and more easily triggered by unguided consumption of FF/TV content outside the classroom (Gerbner et al, 2002; Schwan & Ildirar, 2010), potentially linking to not only misconception but also self-harm (Kriegel et al., 2021; Niederkrotenthaler et al., 2021; Sinyor et al., 2019; Sugg et al., 2019). Therefore, in the classroom setting, FF/TV representations are likely to not only evoke, but also provoke strong emotions and reactions from students that may not be always predictable or preventable; this negative emotional overload can then cause an aversion to learning (Bluestone, 2000; Bassham & Nardone, 1997; Karasik et al., 2014; Masters, 2005; Swimelar, 2013). Social sensitivities and anxieties (Hawes et al., 2020) and recognition of personal trauma mean lecturers must carefully select appropriate learning materials; risk management strategies such as providing trigger warnings and alternative options are necessary (Halberstam, 2017; Horton, 2017; Kadleck & Holsinger, 2018; Kubala, 2020; Searight, 2020).

Furthermore, the number of subtexts in FF/TV content can easily distract students from the academic issues directly connected to the learning goals if not effectively guided by instruction (Fleischer, 2018; Hutton & Mak, 2014; Swimelar,

2013). Ineffective use of FF/TV has been found to dissuade students from understanding the true significance of the subject matter (Swimelar, 2013). Conversely, multiple studies have suggested that contemporary students' ready access to media technologies and regular consumption of media representations such as FF/TV do not necessarily equate to high levels of visual literacy, media literacy or film literacy as labels like 'digital natives' suggest (Fleischer, 2018; Hutton & Mak, 2014; Kędra , 2018; Kirschner & Bruyckere, 2017; Lee & Lo, 2014; Membrives et al., 2016; Romero et al., 2013; Wang et al., 2014), nor are they true for the majority of students (Auchard, 2007; Fleischer, 2018; Hargittai, 2010; Hargittai & Hinnant, 2008; Hargittai & Walejko, 2008; Kędra , 2018; Kirschner & Bruyckere, 2017). Although students' personal experience and prior knowledge can be valuable reservoirs of learning resources (Merriam et al., 2007; Olson et al; 2016), the majority of researchers highly recommend overt communication of learning goals related to FF/TV use, explicit instruction regarding fundamental concepts about dealing with audio-visual and affective information (i.e., cinematography and film grammar), as well as opportunities to practice FF/TV analysis upon learning those concepts before exposing students to FF/TV (Engert & Spencer, 2009; Kabooha, 2016; Membrives et al., 2016; Pollard, 2001; Sigler & Albandoz, 2014).

2.4.2.2. Barriers to sourcing and preparing FF/TV for teaching

The most commonly reported barriers to lecturers' using FF/TV for teaching include the effort and time required for both sourcing and preparing FF/TV (Anderson, 1992; Bluestone, 2000; Karasik et al., 2014; Marquis et al., 2020; Masters, 2005; McAllister, 2015; Smith, 2009; Swimelar, 2013). There are multiple pedagogical and ethical concerns that lecturers need to carefully consider and address for the FF/TV

integration to be effective. For example, the accessibility or availability of FF/TV items in terms of copyright regulations; their content relevance and the optimal length or screening techniques that achieve stated learning outcomes and respect the curriculum constraints (Marquis et al., 2020; Sigler & Albandoz, 2014; Stoddard & Marcus, 2010); their appropriateness in regard to students' academic and socio-cultural backgrounds (di Palma, 2009; Hutton & Mak, 2014; Karasik et al., 2014).

2.4.2.3. Skepticism vs. inadequate institutional provision of resources for lecturers

Many studies document skepticism and resistance from institutions, students and lecturers against acknowledging audio-visual representations as serious or formal instructional materials due to their primary association with the entertainment industries (e.g., Broughton, 2008; Mackie & Norton, 2006; Madsen, 2014; Marquis et al., 2020; Peacock et al., 2018; Sealey, 2008; Swimelar, 2013; Travis, 2016). At the same time, university induction programs for new lecturers typically do not cover the pedagogical use of multimedia, and academic development resources tend to neglect any teaching-focused guidance and training opportunities related to the use of FF/TV in teaching (e.g., Andrist et al., 2014; Ansell, 2002; Donnelly, 2014; Engert & Spencer, 2009; Marquis et al., 2020; Peacock et al., 2018).

It is difficult to unravel whether the skepticism about the value of FF/TV materials or the limited knowledge about how to use them effectively is the main issue. In the field of medical education and health sciences, Membrives and colleagues (2016) observed that lecturers did not have access to any methods of assessment to evaluate the effectiveness of their FF/TV use, so relied on their own subjective evaluation. Ansell (2002) also self-evaluated course outcomes and concluded that lecturers should never rely on FF/TV alone without providing sufficient explicit

instruction alongside other supplementary materials surrounding FF/TV screening. Similarly, upon experimenting with inaccuracy-detecting exercises (i.e., having students demonstrate their ability to point out the inaccuracies in FF/TV representations compared to a more factually reliable source such as a textbook) to monitor students' understanding of historical films, Umanath and colleagues (2012) found that these exercises were only effective under certain controlled learning conditions. Myers and Abd-El-Khalick (2016) observed that lecturers tended to fail to account for their own personal biases in relation to student-generated ideas or presumptions about science when they used sci-fi films to teach science and epistemology (Gregg, 1999; Valeriano, 2008).

2.4.3. Pedagogical methods of using FF/TV in teaching

The key corollary to viewing FF/TV's educational merits and challenges side by side is that choosing to use FF/TV in teaching is not enough for achieving learning outcomes. FF/TV must be carefully chosen and skillfully introduced into the learning content via clear, explicit instruction and objectives (Ansell, 2002; Clark, 1977; di Palma, 2009; Gold & Revill 1996; Engert & Spencer, 2009; Kabooha, 2016; Kuzma & Haney, 2001; Pollard, 2001; Straddon et al., 2002; Sigler & Albandoz, 2014). In other words, the effectiveness of FF/TV integration in teaching and learning almost entirely relies on the quality of instruction and the pedagogy. Reviewing a range of empirical studies across disciplines in which pedagogies associated with FF/TV were reported, five major themes were identified related to practical aspects of teaching with FF/TV. These include FF/TV screening methods, providing guidance for students, implementing learning activities, and collecting and analysing teaching evaluations to improve the use of FF/TV.

2.4.3.1. Selecting and screening FF/TV

FF/TV selection criteria differ from one course to the next, or even within the same context over time, depending on various factors related to the curriculum, the lecturer, the students the learning space, and where the class takes place. Among different key criteria for selecting FF/TV for teaching, researchers often cite course content relevance, course objectives, students' age and cultural backgrounds, students' familiarity with the FF/TV (i.e., popularity, box office rankings), accuracy of FF/TV content to a relevant reference point, engaging qualities of the FF/TV content, and other ethical and legal issues (Hyde & Fife, 2015; Mathews et al., 2012; Metzger, 2007; Myers & Abd-El-Khalick, 2016). In general, most studies recommended clarifying specific criteria for FF/TV selection prior to searching for suitable material so that lecturers can make clear, transparent, consistent and time-saving decisions about what to include, and subsequently, how to prepare it for teaching (Jozwiak et al., 2015; Searight, 2020; Stoddard & Marcus, 2010; Thaler, 2017).

When it comes to the main activity of screening FF/TV content to students as part of learning activities, several different approaches have been identified. The approach reported in earlier studies was to use entire feature films or television episodes in class (e.g., Anderson, 1992; Flemming et al., 1990; Higgins, 1997; Koren, 1993; Leet & Houser, 2003; Moskovich & Sharf, 2012). However, recent technological advances have enabled video editing tools that lecturers can use to easily trim FF/TV into shorter clips ranging from seconds to minutes, create scene montages, or even further manipulate the auditory or visual features of the clips to accommodate a variety of teaching and learning needs (e.g., Argynbayev et al., 2014; Bonsignori, 2018; Kanellopoulou et al., 2019; Kowalski & Conn, 2017; Levey, 2015; Loschky et al., 2015;

Swimelar, 2013; Wiggen, 2019). Others use trailers (e.g., Hamel, 2012; Setianingrum et al., 2021) or short films (e.g., Bergera, 2018; Sundquist, 2010; Thaler, 2016; 2017; Trede & Flowers, 2020).

Apart from length, a few studies described the manner in which FF/TV were shown to students. For example, Demerath (1981) suggested using only the first third of the films for establishing accurate background for courses in sociology. Bonsignori (2018) recommended a more thorough film-viewing experience in which the film clip is shown in its entirety first, then smaller sections of the same clip are replayed to focus on different aspects of the lesson, and then the full clip again. While some authors reported showing FF/TV without interruptions to save time and preserve the viewing experience for students (Anderson, 1992; Ansell, 2002; Flemming et al., 1990; Leet & Houser, 2003; Masters, 2005), others recommended using regular pauses for several purposes such as to provide explanation, point out something important, allow students time to take notes or pose a question (e.g., Dabyshire & Baker, 2011). However, those who described showing FF/TV without interruptions tended to report problems with student learning such as passive consumption or retention of inaccurate information; these concerns can be addressed by breaking up the viewing flow (Ansell, 2002).

Little attention was paid in the literature to the aspect of classroom setup when screening FF/TV. A few studies suggested that creating a theatre-like environment for FF/TV screening would have a positive impact on student learning (Masters, 2005; Leet & Houser, 2003) and smaller class sizes might be beneficial for student learning and therefore result in higher grades (Valeriano, 2013).

2.4.3.2. Providing guidance, facilitating learning activities, monitoring progress

The majority of reports indicate that lecturers provide students with additional guidance to assist them with processing the FF/TV content. Regular lectures were reported to take place either before or after film showing to supplement student learning, often accompanied with written texts and/or other resources (Djamaa, 2018; Smith, 2009). Some authors emphasised the need to introduce the specific background of each example of FF/TV used in a course and their general connection with the course content to properly contextualise in the course, and to remind students of the learning objectives in the activity of FF/TV viewing (Fleischer, 2018; Bonsignori, 2018; Pickard et al., 2008; Masters, 2005; Marcus, 2005; Leet & Houser, 2003). Several authors recommended explicitly teaching students about cinematography, basic film grammar, and film analysis skills so that they could approach the FF/TV representations critically and in close proximity to their exposure to the FF/TV content (e.g., Ansell, 2002; Bonsignori, 2018; Djamaa, 2018; Leet & Houser, 2003; Procter & Adler, 1991). Bonsignori (2018) also recommended providing specific guidelines on how to take productive notes during film viewing.

Apart from such FF/TV orientation, a variety of learning tools such as guiding questions, worksheets, questionnaires, or prompts also supplied guidance for students (Fleischer, 2018; Bonsignori, 2018; Procter & Adler, 1991; Marcus, 2005; Simpson & Kaussler, 2009; Marcus & Stoddard, 2009; 2010). These are considered as useful options to guide students in their learning processes with FF/TV, focus them on the most important aspect of film viewing towards stated learning outcomes, as well as monitoring their understanding of instruction in relation to their interpretations of the FF/TV content (Bonsignori, 2018; Leet & Houser, 2003; Masters, 2005; Moskovich &

Sharf, 2012). In addition to these text-based tools, several studies also endorsed more active and multimodal approaches to pair with film viewing such as simulations, role plays and video games to reenact key scenarios (Brandle, 2020; Gokcek & Howard, 2013; Simpson & Kaussler, 2009; Sunderland et al., 2009).

As an integral part of facilitating learning activities or tasks using these learning tools, different types of discussion (pair, group, whole class) framed around the FF/TV content were favoured by many lecturers as a multifunctional and mutually beneficial way to conduct a lecture that includes FF/TV (Anderson, 1992; Blasco et al., 2018; Bonsignori, 2018; Kresse & Watland, 2016; Lum, 2009; Marcus, 2005; Masters, 2005; Moskovich & Sharf, 2012). Such discussions provide students with the opportunity to share their ideas and experiences, engage in conversations with each other and the lecturer, ask questions, develop a range of cognitive skills and demonstrate their understanding of their learning process (e.g., Andrist et al., 2014; Calcagno, 2015; Myers & Abd-El-Khalick, 2016; Pelton, 2013). At the same time, lecturers have the opportunity to observe, respond and monitor student learning and engagement as they take place in real time (Fleischer, 2018; O'Boyle & Sandona, 2014; Wilson et al., 2017).

Collaborative group work, student journals, essay writing and film/video production appeared to be common methods for achieving learning objectives, but with higher stakes for students (e.g., Blumer, 2010; Leet & Houser, 2003; Marcus, 2005; Masters, 2005; Pelton, 2013; Procter & Adler, 1991; Rajendram & Govindarajoo, 2016; Shapiro & Rucker, 2004; Smith, 2009). Similar to discussion activities, group work or projects facilitate a range of critical thinking and social skills that the use of FF/TV originally is planned to achieve (Goldstein, 2010; Moe et al., 2016; Tipton & Tiemann,

1993). Student journals can be an effective method for motivating deep reflection on students' learning; if this is done soon after film viewing, disciplinary knowledge is effectively integrated with the audio-visual information presented (Marcus, 2005; Rajendram & Govindarajoo, 2016). Essay writing, in which students are expected to integrate meaningful theory and practice (i.e., their reflections, their learned knowledge and skills, and their own personal interests), then organise the newly integrated knowledge into writing (Baratta & Jones, 2008; Pelton, 2013) is also useful. Film or video production can be the audio-visual version of essay writing in that it uses the same rationale, but students are expected to perform it in a film/video medium, which arguably enables a more aligned assessment to the learning outcomes and materials employed (e.g., Dune et al., 2016; Hu et al., 2011; Pearson, 1978; Perry, 2018; Puspawati et al., 2021).

Several authors describe in detail the activities they use and how to administer them. For instance, Bonsignori (2018) used various text completion exercises for listening comprehension and a True/False comprehension exercise upon final viewing of full clips for confirming accuracy of note-taking. Marcus (2005) suggests showing students images from the film to scan their reactions as a pre-film activity, and then requiring students to keep a journal while viewing to 'allow students to process their intellectual and emotional reactions to the films'. Marcus & Stoddard (2009) describe what they call 'perspective activities' where students 'chart or record the various perspectives in a table' while viewing the film, then do a jigsaw afterwards with their peers to share information and compare different perspectives.

Bridging individual tasks and group discussion, Proctor and Adler (1991) suggest students develop discussion questions and answers that link the film with learned

theories. Fleischer (2018) recommends allowing plenty of time and space for group discussion, using techniques such as structured and free-floating questions to encourage students to 'speak directly to each other' about common themes. Anderson (1992) advocates exploiting the catalysing role of FF/TV in class discussion by developing two distinct types of discussion. The first type requires students to discuss how accurately course content is demonstrated in the films, while the second asks students to analyze and evaluate the psychological effects the films have on their own positions.

Looking beyond the individual practices, the overall lack of concrete evidence about how pedagogies with FF/TV work has been identified as problematic. Darbyshire & Baker (2011) highlighted the importance of researching teaching methods involving FF/TV and sharing the results systematically among all teachers. Membrives and colleagues (2016) addressed the need for better teaching tools and more empirical research done to determine actual learning outcomes instead of perceived ones. Donnelly (2014) called for creating and delivering more targeted training agendas on how to integrate FF/TV into disciplinary teaching to improve teachers' competence in repurposing FF/TV for teaching.

Overall, teachers from various disciplines have clearly recognised the relevance and benefits of using FF/TV in the context of education and they have been experimenting with multiple ways to refresh the learning experience for students while minimising the media's damaging side-effects. While it might be impossible to completely eliminate these side-effects because they stem from the very same qualities that make FF/TV an engaging educational choice in the first place, there are ways to address the problems identified in the literature.

2.4.3.3. Collecting and analysing teaching evaluations to improve FF/TV use

While reflecting on individual experimenting is a valid foundation for pedagogy development, lecturers need an effective system for collecting and using evaluations from various sources to improve their practice. The literature on teaching evaluations regarding FF/TV use mostly reports on self-reflection, observation of students' reactions during class, student performance in assessment tasks, and informal ad hoc conversations with students (Anderson, 1992; Ansell, 2002; Bluestone, 2000; Le & Lo, 2014). Studies have questioned the validity of evaluations gathered from these sources due to the gap between planned and implemented teaching/learning activities (Noben et al., 2020; Schneider et al., 2017; Stes et al., 2010). Regarding formal student evaluation of teaching (SET) standardised surveys, little was mentioned in these studies about teaching with FF/TV, because they typically do not include questions to evaluate the use of technology or multimedia (Ballantyne et al., 2000; Jian, 2019). SET surveys generally have been found unhelpful in evaluating innovative practices, experiments and developments in teaching (Ghedin & Acquario, 2008; Smith, 2008; Kember, 2003), nor are they effective in capturing the complexities underlying student learning experiences (Benton & Cashin, 2014).

The call for alternatives to the present practice of teaching evaluations has brought more attention to students' ability to identify new parameters of good practice. Students are generally found to be more motivated to provide feedback if they can see and understand how their evaluations impact teachers' improvements in teaching, course content and format (Chen and Hoshower, 2003). Students also hold relatively similar views on what constitutes effective teaching regardless of the discipline (Kember & Leung, 2011). However, most students are not trained in applying

ratings nor psychometrics (Shevlin et al., 2010), nor are they informed of how exactly their responses in SET surveys are used (Kember & Leung, 2011). Hence, they are not in the best position to provide consistently meaningful and reliable feedback (Chen & Hoshower, 2003). These observations point to the need for a more contextualised approach to standardised SET methods or more personalised and less structured approaches to collecting student feedback.

Built upon this research background, chapters 3, 4, and 5 proceed to establish a theoretical foundation for the thesis regarding three aspects of teaching with FF/TV: visual literacy theory and film literacy theory, learning theories (Cognitive Load Theory, Dual Coding Theory, Cognitive Theory of Multimedia Learning), and teaching theories (TPACK, Four Quadrant model of teaching evaluation, Active Learning Cycle).

CHAPTER 3

VISUAL LITERACY THEORY AND FILM LITERACY MODEL

Visual literacy and film literacy emerged from Chapter 2 among the skills that lecturers seek to help students develop through learning with FF/TV (Bonsignori, 2018; Masters, 2005; O'Boyle & Sandona, 2014) and that studies have found to require explicit teaching and learning (Fleischer, 2018; Kędra, 2018; Kirschner & Bruyckere, 2017). An in-depth and integrated exploration of these two theories helps explain the engaging qualities and educational potential of visual information, as well as how educators should approach materials such as FF/TV in their teaching.

3.1. Visual Literacy (VL)

3.1.1. The definition inconsistency

Visual literacy (VL) deals with the variety of cognitive skills utilised when working with visual information such as photographs, illustrations or moving images (e.g., videos and films), and articulates how these skills can be effectively taught and learned. However, there is not one single widely accepted definition of VL (Avgerinou & Pettersson, 2011; Braden, 1996; Kędra, 2018; Pettersson, 2020a). Nevertheless, credit is consistently paid to John Debes (1969) for coining the concept. In his original proposal, Debes emphasised that VL does not necessarily focus solely on the visuals (such as pictures and symbols), but on 'a group of vision competencies' integral to 'other sensory experiences' beyond seeing (p. 26).

More recent developments have enriched the concept by mediating debates into a collective and comprehensive understanding of the various dimensions of VL (Pettersson, 2011). For example, some scholars perceived VL as a natural ability that comes with human vision, and thus dismissed the notion that teaching and learning of

VL would achieve any cognitive benefits in the way that learning a new verbal language would do (Messaris, 1994). However, while the basic content of visuals may appear universal and natural, interpretation of visuals can heavily rely on personal lived experiences from political, socio-cultural, religious, economic and educational backgrounds that 'taught' or conditioned an individual what to 'see' or perceive in a visual (Berthoz, 2010; Singer, 2010; Avgerinou, 2001b; Avgerinou & Pettersson, 2011). In other words, visuals do not have universal rules for interpretation like other specialised languages such as mathematical symbols or musical notes. Rather, they 'attempt equivalence with reality' (Avgerinou & Pettersson, 2011) as they mirror what they represent and thus have the power to directly facilitate viewing, thinking, imagining, visualising, inferring and constructing meaning (i.e., cognitive processes) and evoke feelings, attitudes, sensations, emotions (i.e., affective messages) similar to what real-life experiences do.

One debate explores whether VL is a group of learned competencies (Debes, 1969; Fransecky & Debes, 1972; Hansen, 1989; Paquin, 1999; Seels, 1994), learned abilities (Avgerinou, 2003; Braden & Hortin, 1982; Felten, 2008; Heinich et al., 1982; Hortin, 1984; Schiller, 1987) or learned skills (Avgerinou, 2001; Kedra, 2018). Most studies appeared vague when listing the specific definitions of 'competences', 'abilities' or 'skills' (Arslan & Nalinci, 2014), allowing some leeway for researchers to choose the 'best' for applying VL in their own context (Martín Erro et al., 2022; Pettersson, 2020a). There have been suggestions to favour 'competence' as an umbrella term covering both 'ability' and 'skill' for VL (The European Commission, 2015; Martín Erro et al., 2022). However, a closer look at the rationale behind these three terms reveals less a disagreement in definitions and more a demonstration of

how versatile and adaptable the concept can be when represented in different contexts.

3.1.2. Journey to a theory of visual literacy (VLT)

Over the years, researchers have generally accepted that defining VL is a 'mad-tea party' (Avgerinou, 2003). Some even abandoned the concept of VL altogether in search of a more concrete foundation for designing human communication (Elkins, 2003; Machin, 2007). Most researchers moved on to the new mission of developing a theory of visual literacy when trying to capture the essence of VL, such as what makes a learner visually literate and from there deducting the key elements that make up VL or the learning goals for acquiring VL (e.g., Avgerinou & Pettersson, 2020; Braden & Hortin, 1982; Felten, 2008; Seels, 1994). For example, Felten (2008) emphasised that a visually literate person must be able to construct meaning from the visuals they encounter. Some scholars connected VL with 21st-century learning and teaching requirements to highlight the ability to both interpret and create information from multiple visual sources (McKenzie, 2008; Hattwig et al., 2013). Avgerinou and Pettersson (2020, p. 443) proposed that a visually literate person can effectively: (1) interpret visuals created for intentional communication; (2) plan visuals and how to use them in intentional communication; (3) create visuals for intentional communication; and (4) integrate visual information and verbal information for intentional communication.

Filtering through these multiple attempts at theorising VL, Avgerinou and Pettersson (2011) identified three key similarities among them. The first similarity suggests that the interdisciplinary nature of VL is deeply rooted in art, biology, philosophy, linguistics and psychology, which explains why VL as we understand it

today encompasses many established fields of research such as communication, education, religion, technology and social studies (Pettersson, 2020a). The second similarity suggests that visual thinking, visual learning/teaching, visual perception and visual communication are the main parameters against which VL can be measured and assessed. The third similarity is an allusion to the existence of a rhetorically and socially constructed visual language separate from the verbal language in human communication (Avgerinou, 2009; Avgerinou & Pettersson, 2011; Barry, 1994; Barthes, 1977; Dondis, 1973; Dwyer, 1972; Pettersson, 2020b; Seels, 1994; Sewell, 1994), whose acquisition must be taught and learned instead of a natural ability that comes with the sense of vision (Gerber et al., 1995; Kedra, 2018; Kress & van Leeuwen, 2006; Pettersson, 2020b). However, there is still no agreement on what terms best describe this visual languague, indicating the challenge of verbally capturing something non-verbal, something 'evolving and intuitive and [that] has different meanings to different people' (Sosa, 2009, p. 55).

Built upon these similarities or 'points of convergence' among the various definitions and theories proposed by their fellow researchers, Avgerinou and Pettersson (2011) pinpointed five core components of VLT: visual language, visual thinking, visual learning, visual communication and visual perception (Figure 3.1). All these five components are fields of research in their own right. Bringing them together in this VLT therefore signifies a complex and interdisciplinary undertaking (Avgerinou & Pettersson, 2011; Pettersson, 2020b).

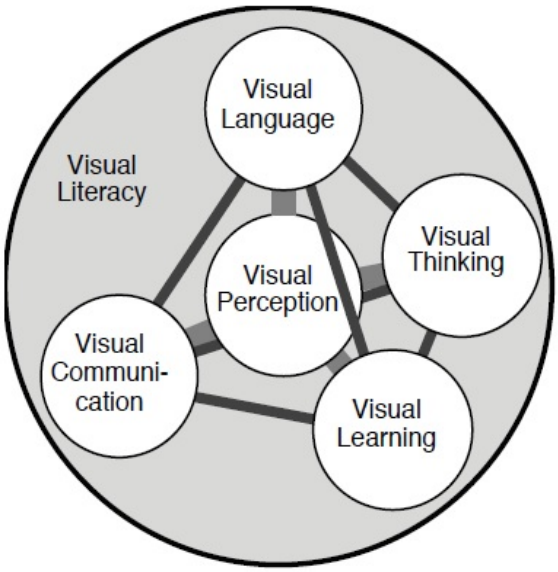

Figure 3.1. The components of the VL theory (Avgerinou and Pettersson, 2011)

3.1.2.1. Visual communication (VC)

Visual communication (VC) is integral to traditional and modern technologies and thus emerged independently within many different research fields (Moriaty, 1996). The key overlapping elements of VC definitions include 'human', 'visuals', 'communicate', 'express ideas', 'convey meanings' (Wileman, 1980; Seels, 1994). These 'visuals' include static images, soundless moving images, animations, films, television and video (Pettersson, 2020b).

Static images used for VC were categorised by Levin (1987) into five types: decorative visuals (ornaments that do not contribute to the main meaning of the text); representational visuals (such as visual illustrations or videos that provide a visible form for abstract concepts); organisational visuals (such as diagrams, graphs or tables that are used to organise information); interpretational visuals (such as legends or arrows on maps to enhance the text's readability); and transformational visuals (mnemonics used to store information in long-term memory). These types of static visuals demonstrate the functions that visuals are capable of performing (see

Pettersson, 2020b, pp. 13-33), and are generalised as 'communicating' functions in VC definitions.

When it comes to moving images, the number of functions increases. Even with simpler forms of dynamic visual representations such as animation, there is much more control over the visuals (such as changing speed, close-ups, voice-over narration) to enable more sophisticated perception or adjust to viewers' or learners' pace (Hasler et al., 2007; Münzer, 2015). Other forms of moving image, such as feature films and television series that bear greater resemblance to reality and utilise powerful cinematography techniques, add further affective elements to the functions of visuals (Gibson, 1979; Rowntree, 1990; Schwan & Ildirar, 2010). These audio-visual representations can trigger viewers' emotions or influence their attitudes (Brown, 2016; Cornell et al., 1985; Kimball & Hawkins, 2008; Kostelnick & Roberts, 2010; Zakia, 1985), resulting in high levels of engagement with the content, which in turn translates to higher cognitive activities (Tversky et al., 2002).

The inherent versatility of visual communication makes it challenging to pin down or clarify the meanings of visuals outside their specific contexts (Müller et al., 2012). This versatility is implied in Dondis' (1973) discussion of contradictory pairs of techniques of designing visual communication (e.g., balance–instability, simplicity–complexity) that are equally valid depending on the intentional purpose of the communication. Hall's (1980) audience reception theory adds another layer, demonstrating just how fluid visual communication can be in the non-linear process of encoding and decoding. Hall (1980) argues that, while there are relatively universal ways to *encode* a message, the *meaning* of the message still depends greatly on the relationship between the reader (decoder) and the message. Many studies have

supported this observation, pointing to cultural influences and individuals' frames of references (Griffin et al., 1995; Kovalik, 2005; Moriaty & Rohe, 1992; Singer, 2010). For that reason, there is usually a difference between the intended and the perceived messsage in visual communication (Pettersson, 1985), which requires the encoder or the user of visuals (e.g., educators) to be as explicit as possible to reduce unintended communication. In the context of education, this is often thought to be achieved through explicit instruction; exactly how explicit, though, is another question underlying several fields of research such as multimedia learning (Chapter 4).

3.1.2.2. Visual perception (VP)

Visual perception (VP) involves many factors, from the environment and from the perceiver (Kubovy et al., 2013). Environmental factors include the circumstances and manner in which visuals are presented to the viewer or perceiver (e.g., in a classroom or private setting; projected on a large screen or on a personal device). The inherent characteristics of the perceiver include their sensory experience of the visual information, the role of past experiences in forming their frame of reference, and their cognitive processes that analyse the information along dual pathways of verbal language and visual language (Barry, 2002).

Visuals do not have a linear sequence to guide our interpretation like text, therefore individual perceivers view the elements in varying order. This can be a crucial factor influencing an individual's process of decoding a visual, and thus their perception of the whole visual (Faber et al., 2020; Pettersson, 2020b). Studies of eye movements found that when people 'study 'a visual, they tend to focus on the most striking elements (Harel et al., 2007; Itti & Koch, 2000, 2001); the visual cues that provide semantic information to help them navigate the rest (Henderson & Hayes,

2017, 2018; Henderson & Hollingworth, 1999), or on the elements that are most relevant to the assigned task associated with the visual (Land & Hayhoe, 2001; Land & Lee, 1994; Yarbus, 1967).

The specific visual elements that fit into these categories may differ from one person to another, depending on their personal frames of references (i.e., what they are cognitively and culturally prepared to 'see' – Scheiter et al., 2018; Yarbus, 1967). An example would be individuals' reading habits learned from their native language's rules (e.g., most Western languages move from left to right horizontally, most Semitic languages start from right to left horizontally, some Asian languages start right to left vertically). Once they have scanned the entire image in their own sequence, if there is missing information, the brain will fill in with pre-existing knowledge to form a logical interpretation of the image (Pettersson, 2020b). Due to this highly diverse process of decoding visuals, VP almost always differs from one individual to the next and can change over time for any given individual.

3.1.2.3. Visual thinking (VT)

Visual thinking (VT) and its outcomes – visual thoughts – are 'visual representations that arise when we think' (Pettersson, 2020b, p. 154). VT has become a serious topic of research since Rudolf Arnheim's (1943, 1969, 1974) philosophical exploration of the idea of VT in the Western world. He defined VT as a process of harmonising perception and conception based on the ability to see visual shapes. Others, such as Ruch and Zimbardo (1971), built upon his works, suggesting that the basic form of VT is the manipulation of symbols that represent real elements of the inner and outer worlds; these mental images form knowledge of our surroundings. Wileman (1980) defined VT

as an organisation of mental images around compositions of shapes, colours and textures. Perceiving VT in terms of skills, McKim (1980a, 1980b) saw it as the interactions among seeing, imagining and building concrete images via drawing or painting.

In our media-saturated societies, complex computer-graphic renditions of images, both still and moving, have been found highly capable of making lasting impressions, and capturing viewers'/perceivers' interest by conveying sophisticated, creative, convincing and engaging messages (Barry, 1998; Franceschelli & Galipò, 2020; Rieger et al., 2020). For example, advertising takes advantage of affective and narrative depiction of commodities and services to 'teach' consumers what abstract concepts such as happiness, desire, success or patriotism 'look' like (Green, 2000; Large, 2014; Lefler, 2014; Pettersson, 2020b). Such use of visuals operates on the expectation that viewers would abandon their critical thinking and reasoning to be carried away with the 'soft sells and emotional appeals' (Pettersson, 2020b, p. 156). Similar observations have been made regarding FF/TV pushing agendas, except that FF/TV provides much longer exposure and stronger plot devices over simple visuals (Aikenhead, 1988; Barnett et al., 2006; Butler et al., 2009; Fleischer, 2018; Myers & Abd-El-Khalick, 2016; Reis & Galvao, 2004).

3.1.2.4. Visual learning (VLe)

In recent years, the unprecedented rise of audio-visual materials being massively consumed by students (Courtois et al., 2014; Schwan & Ildirar, 2010), coupled with the trend of incorporating these materials into teaching, has facilitated more robust research into the pedagogical use of visual media and its effects on student learning. Regardless of the subject, what we learn is intertwined with what we already

remember (i.e., the formation of schemas) (Markov & Kennedy, 2013; Paivio, 1983; 1995; Sweegers et al., 2015). Visual memory is superior to verbal memory in terms of durability of schema formation and memorability (Branch & Bloom, 1995; Paivio, 1983), and the advantages of visual memory combined with verbal memory are well documented (Adams & Chambers, 1962; Haber & Myers, 1982; Paivio, 1995; Magnussen, 2001).

However, visual learning (VLe) and, by extension, visual education, has often been treated as inferior to the learning of the traditional skills of reading, writing and arithmethic (Patterson, 1962; Pettersson, 2020b; Spencer, 1991). Teachers often have limited competency in integrating visuals in their teaching (Bader, 2019), because it has not been regarded as valuable to their pedagogy. To reverse this lack of understanding, scholars have been calling for more attention and resources to improve students' VLe at schools (Coleman & Dantzler, 2016; Elmiana, 2019; Griffin, 2008; Hanson, 1988; Morgan, 2014), in colleges and universities (Abas, 2019; Alter, 2018; Brumberger & Northcut, 2016; Elkins, 2007; Esdale & Robinson, 1982; Felten, 2008; Kedra, 2018; Susiyawati & Treagust, 2021; Whiteside, 1985) and also in professions such as pre-service teacher training (Alpan, 2015; Sadik, 2009).

As discussed in the Chapter 2, various challenges as well as detrimental practices have been identified in lecturers' attempts to integrate FF/TV into teaching (e.g., Marquis et al., 2020; Swimelar, 2013). Addressing the problems of integrating 'visual' and 'learning' requires a comprehensive and interdisciplinary understanding of both knowledge domains, and also the application of learning theories that pertain to both domains. Dual Coding theory, Cognitive Load theory, Cognitive Theory of Multimedia Learning and their applied learning effects appear to be the most

appropriate theories for this task (Mayer, 2002; Mayer et al., 1995; Paivio, 1971; 1983; 1995). More in-depth discussion of these theories is provided in the next chapter.

3.1.2.5. Visual language (VLa)

The concept of a visual language (VLa) is among the few elements that VL scholars have agreed in their definitions of VL. VLa is perceived as a fully developed language system with visual grammar, syntax and vocabulary just like a verbal language system (Avgerinou, 2001a, 2001b, 2009; Braden, 1994; Dondis, 1973; Moore & Dwyer, 1994; Pettersson, 1989, 1993; Seels, 1994). VLa mobilises a range of complex cognitive skills such as visual thinking, visual reading/decoding/interpreting, and writing/encoding/creating (Kedra, 2018; Bowen, 2017; Westraadt, 2016; Mnguni et al., 2016; Arneson & Offerdahl, 2018). Similar to verbal languages, the basics of these VLa skills can be systematically taught to improve a person's VL. In a discipline-based context, a more specialised or advanced level of VLa integral to the disciplinary knowledge and skills (comparable to verbal terminology or jargon in different fields) can be provided to assist students with multimodal learning.

The majority of VL researchers consider Visual Language (VLa) as the key element underlying all the other VLT elements for it enables thinking, learning, communication, and perception of visual information. Also, unlike verbal languages or other rigid languages such as math symbols or music notes, VLa does not have a linear interpretational sequence (i.e., a fixed sequence to read/interpret). The concept of time within VLa is still a key matter in determining how a visual is interpreted, but it is more fluid and can be 'bent' to fit into a certain narrative intended by the encoder. For example, there are multiple ways in cinema to express the passage of time, moving forward into the future and backward into the past in relation to the present moment

on screen, or even a mix of both directions. 'Time' in the context of static images also refers to the length of time the viewers' eyes set on each element or section of the image.

This fluidity of time is a key indicator of VLa's multi-dimensional existence, which is clearly reflected in Pettersson's (2020b, p. 86) three-dimensional model of VLa. He used the same visual as that of VLT and replaced the five VL components with (1) content, (2) execution, (3) context, (4) format and (5) perception. The first four elements refer to how a visual is structured and presented to viewers, all of which in turn influence their perception and guide their intepretation of the visual (Figure 3.2).

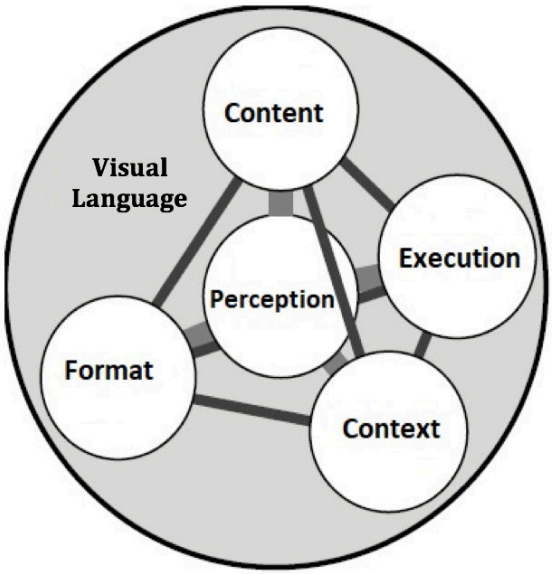

Figure 3.2. Components of visual language (Pettersson, 2020b)

The content component of VLa refers to all the information that make up an image's characteristics. This can include the degree of realism, the amount of detail, depicted objects, time and space, genre (e.g., action, violence, drama, humour), captions and metaphors. Sometimes applied to still images but more often to moving images, the content can also involve motion, sounds (e.g., music, speech, sound effects), atmosphere and emotions. Variables in all this information can also be used as

parameters to judge the quality of an image such as its readability, credibility, relevance and age-appropriateness.

Execution refers to the rendering of images in terms of their forms and styles, right down to the micro level such as dots, lines, pixels, combinations of colours (hue, saturation, shadow, highlight), light/brightness, sharpness, shape, size, depth, perspective, composition (organisation, balance, focal points) and amount of editing. There are also more generalised categories of visual types (e.g., photos, drawings, digital images) and genres (e.g., comedy, action, drama) that define their execution. In moving images, motion-related elements such as pace, speed change, zooming in and out, intercutting and visual and sound effects also play an important role in the graphic execution.

VLa has an internal and external context. The internal or inner context consists of all the content and execution factors described above, their relation with each other and their relation with any verbal information included. The external or outer context of a visual refers to the environment, circumstances and manner in which it is presented to viewers, which contribute to how it 'communicates' and facilitates interpretation from the viewers. For example, the external context of VLa includes whether a viewer encounters a visual in their own home alone, or in a public space among their peers or strangers; or whether there is a mediator/narrator who guides the encounter or the explanation is in closed captions.

Format refers to the platform through which a visual is presented, which is a combination of internal and external context. Still images can be printed on paper (e.g., glossy, matte), or projected on a screen (e.g., computer screen, fabric, wall space). Moving images such as films can be watched on TV or computer screens via

cable, VCR, DVD or streaming services. These factors are integral to the internal context of VLa. As in the discussion of external context, the environment in which one interacts with the visuals (e.g., individually or in groups, with or without guidance) significantly impacts interpretation. The choice of format can influence our perception of the visual's qualities according to our intentions, purposes and backgrounds.

The perception of VLa is formed through the individually unique and complex organisation of cognitive and affective processes of visual information that is influenced by both the environment and the perceiver themselves.

Applying this understanding of VLa in the context of teaching and learning, Avgerinou and Pettersson (2011) summarised six interconnected principles of VLa that educators need to understand when approaching and integrating visuals in their instruction. These principles are: (1) Visual language exists; (2) Visual language, just as human experience, is holistic depending on each individual's frames of reference; (3) Visual language must be learned to comprehend both its cognitive and affective functions; (4) Visual language may improve learning when used effectively in instruction; (5) Visual language is not universal; and (6) Visual language may often require verbal support to reduce the gap between intended and perceived messages. These principles are to be considered in conjunction with the VL objectives mentioned above (Avgerinou & Pettersson, 2020, p. 443).

3.1.3. VL and teaching with FF/TV

Given the complex and multidimensional nature of VL, learners need proper guidance to understand and navigate through the factors – internal and external – that influence their individual interpretation of visual information. The scholarship of teaching and learning VL, therefore, is less about introducing VLa as one new language system, and

more about raising learners' awareness about the possibility of diverse ways of interpreting visual information, and teaching them how to recognise and reconcile the different interpretations. However, many educators teaching with FF/TV have found that their students were not sufficiently competent in media literacy, despite their high exposure to media technologies (Fleischer, 2018; Lee & Lo, 2014; Marcus, 2009; Shapiro and Rucker, 2004; Smith, 2009; Umanath et al., 2012). Likewise, many VL researchers found that contemporary generations of media users are not as visually literate as they are given credit for (Brumberger, 2011; Emanuel & Challons-Lipton, 2014; Kedra, 2018; Metros & Woolsey, 2006; Pettersson, 2018).

To address the gap between VL objectives (Avgerinou & Pettersson, 2020) and current students' VL competence, VL researchers are calling for visual literacy to be regarded as equal to alphabetic literacy and included in curricula in all academic disciplines (Kedra, 2018; Elkins, 2008; Metros & Woolsey, 2006). Simultaneously, the need for formal training about using media technologies such as FF/TV in teaching may also be growing (Donnelly, 2014; Engert and Spencer, 2009; Marquis et al., 2020; Swimelar, 2013).

3.2. Film Literacy

Among the numerous types of visuals, film is being increasingly consumed by contemporary students and consistently found to influence their knowledge and beliefs about the world around them (Gerbner et al, 2002; Schwan & Ildirar, 2010). Despite sharing some characteristics with other forms of visuals, film operates in a world similar to yet separate from reality, and thus requires a different skillset to interpret its meanings. The acquisition of this skillset is often referred to as the development of film literacy. A film literate person typically understands the language

of film, or the conventions that regulate filmmaking techniques and symbolism (i.e., film grammar), and can use that understanding to analyse film or produce film. The following sections explore the components of film literacy, a guiding model for film literacy development, and the associated theory of viewer response.

3.2.1. Film Literacy (FL): Learning the language of film

Much of the rationale for developing an understanding and competency for Film Literacy (FL), or Screening Literacy as it is called in most European research contexts (Burn & Reid, 2012), is similar to that for VL, except it has a more refined focus on the medium of film in its various forms (such as FF/TV). FL also shares with VL the difficulty of identifying a single definition to encompass all the different roles that film plays across academic disciplines. Forsdale and Forsdale (1966, p. 11) suggested examining 'film illiteracy' first to understand what FL is not. They explained film illiteracy as the inability to:

(1) recognise the 'objects, people, places and action' shown on screen either with or without artistic compositions;
(2) comprehend the 'whole action portrayed in film' even with some familiarity with parts of the film;
(3) understand that film is not reality;
(4) understand basic cinematography;
(5) recognise or possess any awareness of or interest in the 'scenes, people, objects, events' which are not already part of their knowledge.

Film illiteracy means that viewers do not have the 'key to the code', emphasising that fluency in film language requires 'acquaintance with its code' (Forsdale & Forsdale, 1966, pp. 9-10; Hobbs et al., 1988; Messaris, 1994); that is, film language needs to be

learnt. The concept of film language can be considered equivalent to film grammar, or the conventions that regulate filmmaking techniques, as previously discussed in Chapter 2. Ruesch and Kees (1956, p. 12) identified the key difference between 'the code' of film language (or 'analogic codification') and the code of the verbal language or numerical system (i.e., digital codification). Analogic codification provides only a relative representation of the targeted object, event or idea through a 'series of symbols', while digital codification provides a direct indication of their targeted entities. More recent studies specify that prior knowledge about 'the code' of film (such as cinematography) is required for viewers to fully comprehend both the 'formal film structure' (i.e., introduction, conflict-climax, resolution) and the structure of constituent events within the entire film plot, through which subtexts and implied meanings are conveyed (Schwan & Ildirar, 2010, p. 975).

After establishing that FL requires learning of 'the code' of film (which is often discussed in conjunction with VLa – Foster, 1979; Greenfield, 1984; Hobbs, 1998), Forsdale and Forsdale (1966, p. 14) defined FL as a ladder, whose bottom rungs involve very basic knowledge about film that is enough for consuming film as entertainment, while the top rungs consist of more advanced abilities 'to "read" the more subtle meanings of what is being seen, to place a film properly within its genre, and to evaluate it sensitively within that genre'. A film-literate person would be able to (and want to) experience a range of film genres and productions as they move up the ladder of FL. Forsdale and Forsdale (1966) also predicted that when FL is eventually recognised in the official 'range of literacy' that requires direct instruction across disciplines, the ladder would become 'both wider and taller'. They also warned that, as film becomes more accessible and commonplace both in and outside education, and

both film technology and film content become more complex, more pressing challenges of dealing with film would surface. It is therefore an established understanding that film education is important to successful integration of film representations in education.

Over time, there have been new and more nuanced developments regarding the focus of FL in education. These include more attention to film production as one of the desirable skills of FL. For example, the British Film Institute (2013) proposed a definition of FL as:

> the level of understanding of a film, the ability to be conscious and curious in the choice of films; the competence to critically watch a film and to analyse its content, cinematography and technical aspects; and the ability to manipulate its language and technical resources in creative moving image production. (p. 3)

This definition indicates an awareness that film is a complex medium with potential for teaching and learning, and that a comprehensive assessment of FL relies on interconnected knowledge domains and skills in both film analysis and production (Paran & Duncan, 2018).

Rather than a mere definition, several attempts have emerged from the field of language teaching to develop practical frameworks or models to guide educators and learners in acquiring FL. Again, similar to that of VL, these models often involve breaking the concept down to specific domains of knowledge and skills corresponding with the demands of the discipline. For example, Eken (2003) proposed a framework to conceptualise FL into four dimensions: literary aspects (e.g., narrative, characters); dramatic aspects (e.g., acting); cinematic aspects (e.g., camera angles, camera positions, sound, lighting); and language aspects (e.g., vocabulary). Decke-Cornill and Luca (2007), as translated and reviewed in Viebrock (2016), perceived film literacy as

intertwined with VL, having at least four groups of competences: perceptive, aesthetic and critical, intercultural, and communicative. Perceptive competences focus on the visual and multimodal skills that VL offers, fostering students' perception of both disciplinary knowledge and knowledge about film, which then informs their aesthetic appreciation (treating film as art) and critical attitude (treating film as a learning medium). Intercultural competencies refer to the the development of cultural intelligence via reflecting on one's own culture in relation to what is portrayed in film representations. Communicative competencies, particularly relevant to the teaching of language and culture, refer to the communication skills that film can help learners develop native-like speech.

Considering all the evolving and interdisciplinary complexities of film in education, this research identifies film literacy as the critical awareness and active learning of the language of film in one's interpretation, usage and creation of film content. To further explore the constituent factors of FL awareness and language (i.e., what is necessary to learn), this research mobilises the model of film literacy proposed by Thaler (2014).

3.2.2. Thaler's model of film literacy (FLM)

Thaler's (2014) model of FL stands out as a broad yet comprehensive way to organise the different domains within the concept of FL that can be applied to all disciplines. The conceptualisation of Thaler's FL model (FLM) is rooted in Byram's (1997) seminal work on the Intercultural Communicative Competence (ICC) model. Up to the introduction of ICC, the respected convention of language teaching had been aiming to reproduce the native-like yet culture-deaf qualities in language learners. Instead of perpetuating that convention, ICC acknowledges the diverse intercultural qualities in

language learners and thus promotes a language teaching practice that cultivates those qualities to develop interculturally competent language users (Hoff, 2020). The ICC model categorises these qualities into four domains:

- Knowledge of the self and others, of individual and societal interaction (*savoir*)
- Skills, including skills of interpreting and relating (*savoir comprendre*) and skills of discovering and/or interacting (*savoir apprendre/faire*)
- Attitudes towards valuing others and reflecting on oneself (*savoir être*)
- Political disposition to act upon the knowledge or education gained from critically assessing information in relation to one's own and other cultures and countries (*savoirs' engager*)

Since its introduction, the ICC model has significantly influenced both research and pedagogical practice within and beyond language learning (e.g., Ayon, 2016; Benavides, 2019; Wilberschied, 2015). Because of this widespread application, many critiques have emerged against ICC's political and idealising tendency towards culture, identity and country alongside other ideological limitations. These critical discussions led to ongoing disputes over how ICC should be modified or extended to achieve a more balanced and inclusive understanding of intercultural education (Dervin, 2016; Hoff, 2020; Holliday, 2011; Matsuo, 2012; Risager, 2018; Van Maele & Messelink, 2019). Among the proposed changes (see Hoff, 2020 for a detailed review), one suggestion was to pay more attention to the role of modern media technologies that have been increasingly used in designing and communicating cultural content, thus complicating the previously simpler components of intercultural communication and education (Orsini-Jones & Lee, 2018). This arrives at a conclusion that explicit teaching

and learning of multimodal layers of meaning embedded in language should be promoted to avoid miscommunication, misinterpretation and misunderstanding (Benavides, 2019; Kress, 2010; Skulstad, 2018). Once again, the conversation reiterates the shifting literacy paradigm from the traditional literacies of reading, writing and arithmetic to multiliteracies (The New London Group, 1996) and multimedia learning and teaching (Porto et al., 2017). So even though travelling a slightly different path, scholars in the field of language/culture teaching have arrived at the same conclusion as VL scholars about the significance – and risks – of multimedia technologies in contemporary pedagogies.

Thaler (2014) fashioned the first three ICC domains – knowledge, skills and attitudes – into the backbone of his FLM and incorporated the concept of intercultural awareness into the attitudinal domain. Having its roots in such a far-reaching model of ICC, the foundation for Thaler's FL model is theoretically grounded. Practically, Thaler's publications (2008, 2014, 2016, 2017, 2018, 2019) on English language and literature teaching involved a range of different media such as short films, music videos, advertisements and flash fiction. Ideas from these works are intertwined into the conceptualisation of FLM, which supports its high level of generalisability beyond language/literature/culture teaching regarding the pedagogical use of FF/TV in disciplinary teaching. As Figure 3.3 illustrates, the FL model includes:

(1) the theoretical domain of knowledge about film: film history, film theories, film genres and cinematic techniques (cinematography);

(2) the practical domain of film analysis skills (i.e., listening comprehension, visual literacy, cinematic terminology) and film production skills (i.e., hands-on operating skills and creative processes); and

(3) the emotion-cognition domain of attitudes, which integrates Viewer Response Theory (see 3.2.3) to explore holistic perception or film enjoyment, critical judgment and intercultural awareness.

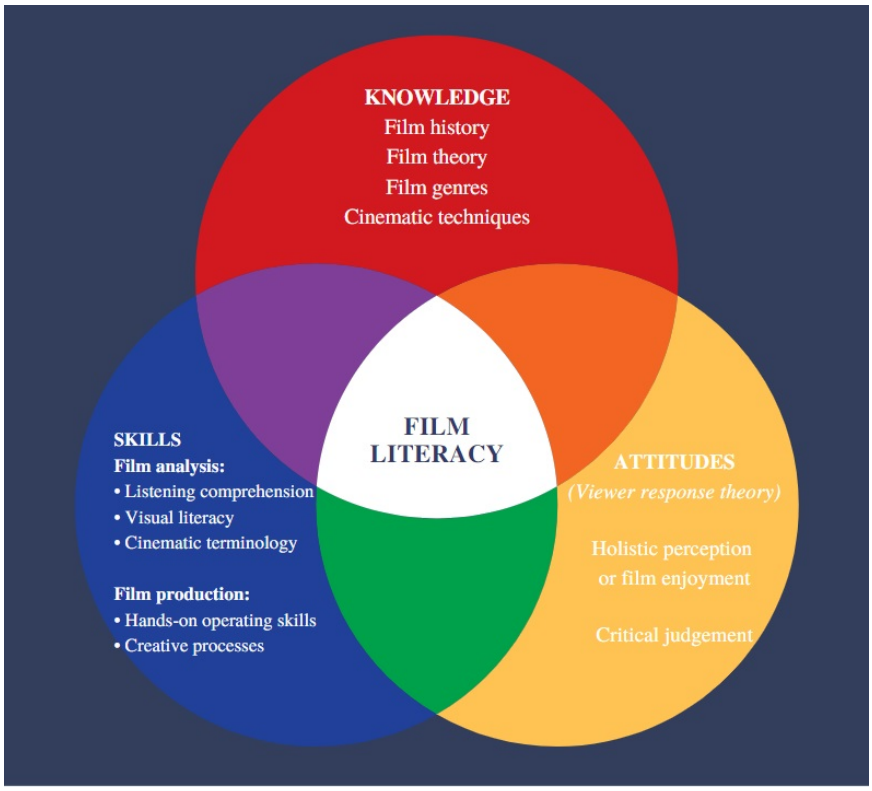

Figure 3.3. Thaler's (2014) model of film literacy

Among the FL model's components, film analysis and film production skills require further differentiation to identify the specific elements to assist the design of data collection instruments (i.e., the parameters of evaluating educators' familiarity with film literacy). According to Henseler and colleagues (2011, as translated and cited in Viebrock, 2016), film is a multimodal and multidisciplinary art form in itself, which intertwines three dimensions: modes of narration, modes of dramatic representation, and cinematographic or aesthetic techniques. The narrative dimension involves elements of the story plot (e.g., exposition, climax, twists, denouement) and that of characters (e.g., traits, relationships, motives), alongside recurring themes or motifs,

space and time, as well as character constellations to demonstrate what role each character plays. The dramatic dimension focuses on different aspects of the actors (e.g., performing quality, image or credibility, body language, gestures, facial expressions, make-up and costumes) and on the particularities of the film set (e.g., shooting locations, props, lighting, colour schemes and mise-en-scène). The cinematographic dimension, as the name suggests, covers the processes of filmmaking and editing, which involves both operating skills of both filming equipment and film editing computer software.

3.2.3. Viewer Response Theory (VRT)

Viewer Response Theory (VRT) is an adaptation of Roseblatt's (1938, 1960, 1969, 1978) highly influential Reader Response Theory (RRT) (Viebrock, 2016). RRT asserts that reading is a 'transactional' and 'dynamic' relationship between the reader and the text, which gives rise to meaningful interpretations that are subjective, creative and unique to each reader's personal experience (Graves et al., 2011; Larson, 2009; Rosenblatt, 1938; Woodruff & Griffin, 2017). RRT also argues that readers' emotional appreciation and the critical judgement of the literary work are always intertwined, never isolated from each other (Shook, 2019). Therefore, according to RRT, the teaching and learning of creative works from a certain disciplinary perspective should aim at striking the balance between 'efferent' (only for extracting information) and 'aesthetic' (immersive, enjoyable experience) reading (Rosenblatt, 1960). To achieve this, learners should be allowed space to process information, to critically and thoughtfully reflect on their meaning-making outcomes before being influenced by others' interpretations (Rosenblatt, 1960; Woodruff & Griffin, 2017).

Extending RRT to the audio-visual texts of FF/TV, VRT recognises three roles the

viewer plays in the learning or meaning-making process involving FF/TV. Firstly, viewers (i.e., learners) would naturally notice gaps or incongruencies in the narrative or representation, and then fill them in or make sense of them based on their own prior experiences or knowledge about FF/TV. These perceived gaps can arise from several factors. For example, the FF/TV plot itself may not fit into the usual expectation of the viewers' socio-cultural background; the portrayed occurrences may not be realistic or possible; or the sequence of events appears abrupt after trimming/editing. It is usually during this process of meaning-making that viewers respond emotionally to the FF/TV content, which plays an important part in their initial engagement with the materials (film enjoyment) and motivation to pursue it more deeply (learning). Educators are therefore encouraged to embrace these emotional responses by assisting students in rationalising and integrating their emotions into the overall attitude formation (holistic perception).

After this initial meaning-making process, viewers will critically analyse, interpret and evaluate the story and characters to form a 'critical judgement' of the content. This role requires the competent level of knowledge and skills described in VL and FL, which vary depending on the disciplinary context. Guidance and instruction from educators can ensure learners are well prepared to carry out this role. The third role involves a process of reflection by viewers about the ways in which FF/TV influence their perception toward a particular topic or issue, so that their retention of knowledge is balanced among internal and external factors.

3.3. Conclusion

The fact that FF/TV and visual information in general can be manipulated in so many ways to push agendas and influence viewers' perceptions necessitates the fostering of

visual intelligence in students (Barry, 1998; 2002; 2020), rather than taking this intelligence for granted. Educators who choose to adopt multimodal materials for teaching are responsible for breaking the passive consumption cycle, raising awareness and training students in the necessary VL skills. Towards this end, a comprehensive understanding of the current literature on learning and teaching theories is crucial to identify the optimal ways in which VL and FL can be integrated into pedagogies by lecturers.

CHAPTER 4

LEARNING THEORIES AND THEIR APPLIED EFFECTS

Following the insights into how FF/TV would fit well into the contemporary landscape of university learning and teaching discussed in Chapters 2 and 3, it is necessary to understand the ongoing conversations within that landscape to identify what pedagogical issues FF/TV integration can practically address. One issue which FF/TV can address effectively is better and longer-lasting information retention (di Palma, 2009; Donnelly, 2014; Karasik et al., 2014; Masters, 2005; Mathews et al., 2012). In Visual Literacy, this is referred to as the superiority of visual memory in forming schemas in the long-term memory (Adams & Chambers, 1962; Haber & Myers, 1982; Paivio, 1995; Magnussen, 2001). Beyond knowledge retention, FF/TV are thought to assist the training of multiple high-level thinking skills for students due to their multimodal characteristics (Bonsignori, 2018; Donnelly, 2014; Fleischer, 2018; Karasik et al., 2014). To better understand the rationale behind these claims, this chapter explores a range of learning theories grounded in cognitive science and educational psychology – Cognitive Load Theory, Dual Learning Theory and the Cognitive Theory of Multimedia – alongside their applied effects. These theories were selected for their relevant and complementary scope regarding humans' cognitive processing of information, especially information presented in various modalities in the context of learning, as well as their robust evidence-based background.

4.1. Cognitive Load Theory (CLT)

Cognitive Load Theory (CLT) identifies a person's capacity for learning. It emerged from a five-decade-long research body on working memory theories and models (Sepp et al., 2019) across multiple disciplines. This section reviews the research developments

on working memory that led to the conceptualisation of 'cognitive load' in CLT, then discusses the significance of CLT in this thesis including the more recent addition of motivation and emotion factors within CLT.

4.1.1. Research developments on working memory (WM)

The concept of working memory (WM) was constructed through a series of WM models proposed by Atkinson and Shiffrin (1968), Baddeley (eBaddeley & Hitch, 1974; Baddeley, 1986, 2000, 2003), and Cowan (1988, 1995, 2001). These WM models generally attempted to explain the cognitive processes that take place inside the human brain when we utilise existing and newly provided knowledge while we process all the information required to perform a task (Sepp et al., 2019). However, this WM is quite limited in terms of how much information it can hold and for how long (Adams et al., 2018; Cowan, 2001; Martin, 2018).

Atkinson and Shiffrin (1968) proposed a human information processing model which divides the mechanism into three memory components: sensory memory, working memory and long-term memory (Figure 4.1). Human senses receive incoming information from the surrounding external environments, where the most important impressions are registered by sensory memory then transferred to the WM (or short-term store/short-term memory) while the rest is discarded. The WM then processes this information transferred from sensory memory to determine what else needs to be discarded and what to encode into the established structures of knowledge in the long-term memory (schemas). The long-term memory can be considered as a person's knowledge base, from which information can be easily retrieved back into the working memory to help process new information (i.e., rehearsal) when needed. This WM model highlights the distinction between the passive reception of information by our

senses and the active processing mechanism that we operate consciously to make sense of the selected information (i.e., thinking). This distinction is crucial in opening up subsequent discussions about learning: we need to know what types of information are recognised as pertinent by each individual's memory systems, and thus how instructional design can construct the 'incoming information' for optimal processing.

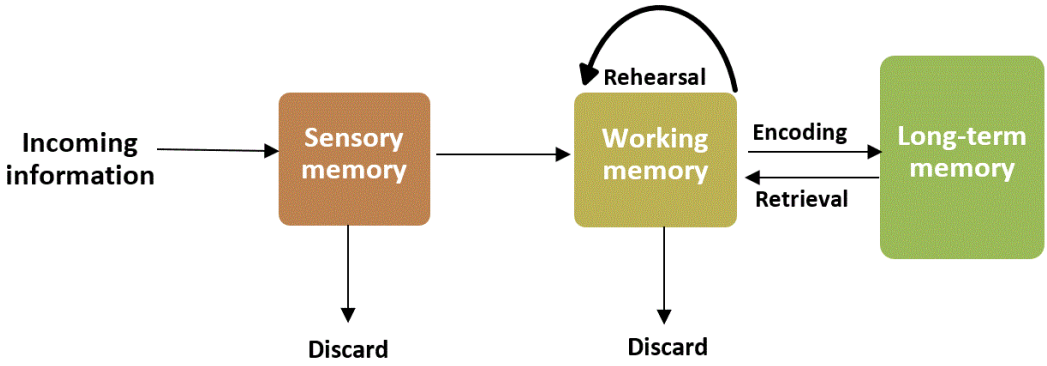

Figure 4.1. The human information processing model adapted from Atkinson and Shiffrin (1968)

Another important feature of the WM models is the modality-based categorisation of information when processed by human memory systems. Since information from the external environment as perceived by different senses belong to different modalities (e.g., verbal, visual, auditory, spatial), the models also try to account for different processing channels in the memory systems. For example, Baddeley (2000) developed a more sophisticated model of WM (Figure 4.2) based on the one proposed by Baddeley and Hitch (1974), that reframes the WM less as a limited short-term storage and more as a multifunctional system that integrates information across various sensory inputs before encoding to the long-term memory. In this model, each modality-specific channel of information has an independent WM system. Namely, the 'phonological loop' is where auditory information (sound, speech) is processed; the 'visuospatial sketchpad' is where visual and spatial information is processed; the

'episodic buffer' is where all four modalities of information are united into full representations of knowledge to be encoded into the long-term memory for schema-formation (Baddeley, 2000). All of these subsystems are supported by the parent system labelled 'Central Executive'.

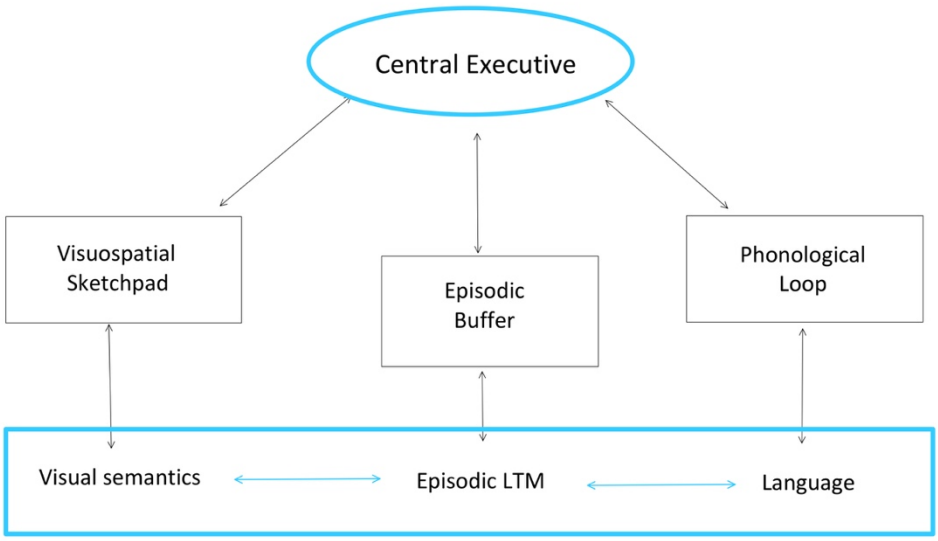

Figure 4.2. Adapted from Baddeley's model of working memory (2000)

Exploring how different modalities can be processed in WM, Cowan (1988) employs the concept of 'attention' to explain the sequence and timing of mental selection or removal of stimuli. Rather than separating WM systems for different modalities as in Baddeley's models, Cowan suggested that one single central processing system is responsible for all modalities of information, and that it draws on the focus of the person's attention. This attention resource, dependent on the WM itself, is limited in its basic storage capacity (the amount of information it can hold for processing without aids such as chunking or rehearsal), duration (attention span, or how long it can hold control the focus), and the control of such attention in shifting and adjusting among different cognitive processes (Conway et al., 2005; Cowan, 2000, 2001, 2010; Kane et al., 2001). Cowan (1995; 1999) thus associated WM with temporary storage and

processing of information, and also direct interaction with that information. Together, storage, processing and interaction produce an appropriate reaction either immediately (as in instinctive responses) or upon intentional focus of attention to activate relevant schemas (as in performing cognitive learning tasks).

Still subscribing to this hypothesis of attentional focus as operating WM, Unsworth and Engle (2007) postulated that a person's WM capacity is determined by two concurrent processes: selecting (and dismissing) of task-relevant information, and simultaneously integrating provided stimuli and existing schemas in a task-oriented manner, regardless of the modality of the information. Across all the processes and regardless of the modalities from which information is derived, the distribution of attention differs significantly depending on the individual's existing schemas (i.e., previous experience, expertise), available WM load, and the nature or complexity of the targeted task (Engle, 2002; Halford et al., 1998; Unsworth & Engle, 2007).

In general, WM models disseminated by Atkinson and Shiffrin, Baddeley and Cowan, as well as other researchers' interpretations and elaborations on these models, directly influenced the conceptualisation of CLT. The influence can be observed in CLT's key assumptions about WM's characteristics, WM's functions for different modalities of information, the broader information processing systems in which it operates, and the role of attentional focus in navigating information processing for learning purposes.

4.1.2. Cognitive Load Theory (CLT) and its educational significance

Conceptualised in the 1980s by John Sweller and team, Cognitive Load Theory (CLT) emerged from an educational psychology domain with the main objective to utilise empirical findings about WM to inform teaching and learning strategies (Sweller 1988;

Sweller & Chandler 1991; Sweller et al. 1998; Sweller et al., 2011). Theoretically, CLT is founded on the long-standing assumptions about human's limited WM and the schema-forming long-term memory (i.e., learning) (Atkinson & Shiffrin, 1968; Baddeley, 1986, 2000; Cowan, 2001, 2010; McVee et al., 2005; Miyake & Shah, 1999). CLT posits that 'cognitive load' – equivalent to WM load – receives and processes new information from sensory inputs and constructs knowledge from that information. Some of this new knowledge is then formed into schemas and stored permanently in the long-term memory which can be later retrieved to help process new information (Sweller, 2011, 2020). Figure 4.3 provides a basic representation of the human cognitive architecture in which CLT operates.

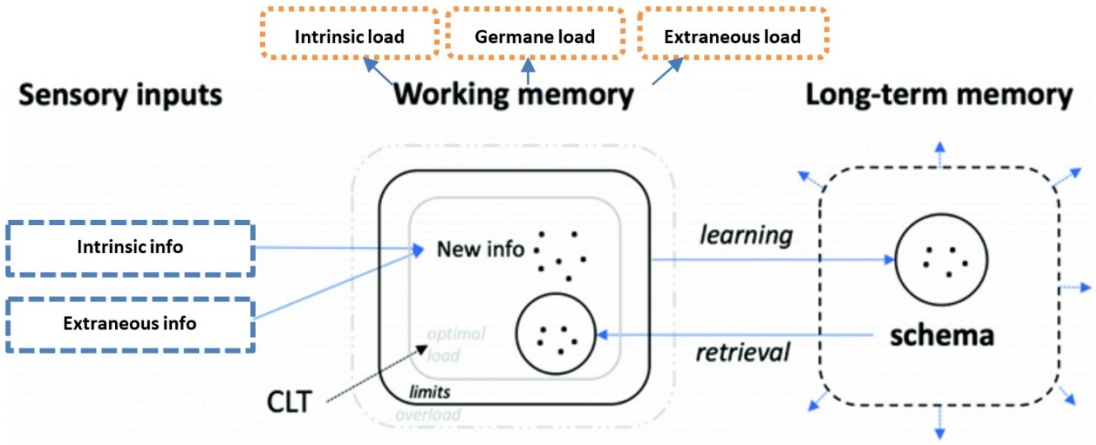

Figure 4.3. A representation of Cognitive Load Theory in relation to working memory and schema formation

4.1.2.1. Types of cognitive load

Rather than categorising information based on their modalities (e.g., visual, auditory, spatial), CLT distinguishes information as helpful or unhelpful to the specific requirements of a learning task. Accordingly, CLT describes the cognitive load as having three different interconnected parts: intrinsic/productive load, germane load and extraneous/unproductive load (Kester et al., 2010).

Intrinsic load relates to the elements of information that are helpful to the task

at hand and activates and recalls relevant schemas from the long-term memory to help process the new information. Studies also suggest that intrinsic load is activated through 'good' content of instruction design that can pair effectively with learners' prior knowledge (see, for example, Kalyuga 2011; Sweller 2010). The germane load assists this process by identifying helpful elements from the content and format of the associated instruction to reduce element interactivity (i.e., the complexities among different interacting information elements – Sweller, 1994) and liberate more WM resources to focus on completing the learning task (Gerjets & Scheiter, 2003; Leppink et al., 2014; Orru & Longo, 2019; Young et al., 2015). The extraneous load is unhelpful information in the content and format of learning materials that impacts on the capacity available for the productive processes (Sweller, 1988, 2010). Instructional design seeks to eliminate extraneous load because it is considered detrimental to the schema formation in long-term memory (Paas & Van Merriënboer, 1994; Orru & Longo, 2019; Young et al., 2015).

Since intrinsic, germane and extraneous cognitive loads all function within the limited capacity and duration of the working memory load (van Merriënboer & Sweller, 2005), high levels of cognitive processing required to deal with extraneous load will reduce the capacity to acquire helpful schemas for learning. However, more sophisticated understanding about the extraneous load as connected to negative yet productive emotions has been suggested in more recent studies (Knörzer et al., 2016).

4.1.2.2. Measuring cognitive load

Miller (1956) estimated that 'seven plus or minus two' pieces of information is the limit WM can process at any given moment and that individuals can hold that information without rehearsal for 20–30 seconds (Adams et al., 2018). These units of

information are often ‘measured’ or assessed based on their internal factors (e.g., element interactivity, amount, modality) and external factors (e.g., learners’ previous experience or expertise, associated instruction, learning environment). No one has yet produced a comprehensive list of factors that influence cognitive load (Longo & Leva, 2017; Orru & Longo, 2019).

This idea of measuring cognitive load leads to recognition of the ‘cognitive overload’ phenomenon, which occurs when the amount of interacting information exceeds the WM’s storage and duration capacity. The overwhelming nature of cognitive overload typically leads to the loss of information from the WM, hindering learners’ ability to fully understand instruction and thus preventing their successful task completion.

Another important factor that impacts cognitive load is learners’ previous experience or expertise (novice, intermediate or advanced). This relates to the frequency and type of instructional guidance (e.g., step-by-step worked example demonstration or general guidance) required to optimise a learner’s cognitive load. Without prior guidance or provision of relevant knowledge, novice learners struggle to perform a learning task and rely on sub-optimal methods such as experimenting or means-ends analysis (Ayres 1993; Ayres & Sweller, 1990). On the other hand, too much guidance tends to burden more experienced or advanced learners as they still have to process unneeded information or repetition of what is already in their long-term memory (Feldon, 2007; Gobet, 1998; Ericsson & Kintsch, 1995; Sweller, 1988).

CLT as an instructional theory essentially aims to articulate a foundation that accounts for as many impact factors (e.g., element interactivity, learners’ expertise) as possible to assist the development of effective pedagogical interventions and

procedures to optimise WM's capacity for learning, and avoid cognitive overload in learning contexts (Paas & van Merriënboer, 2020; Sweller, 2018a, 2020).

4.1.3. Motivation and emotion perspectives in CLT

Although general assumptions about learning often tend to include non-cognitive processes such as mental effort or motivation (Cennamo 1993; Salomon 1984; Plass & Kaplan, 2015), the majority of CLT studies have only highlighted the relationships among the cognitive-focused concepts discussed above: WM capacity, schema formation, types of information, element interactivity, learners' expertise and subsequent learning processes.

The non-cognitive aspects of learning such as motivation and the associated emotions are considered necessary forerunners of the cognitive learning process, but most CLT researchers tend to cast those as the learner's virtues rather than a factor impacting on cognitive load (Feldon et al., 2019; Paas et al., 2005; van Merriënboer & Sweller, 2005). In recent years, the motivational and emotional dimensions of learning have attracted more interest, being regarded as precursors, parallel processes and as outcomes of cognitive load (Feldon et al., 2019). Several integrated learning theories and models have emerged out of the literature of educational psychology, where CLT is linked with the motivational and emotional dimensions of learning. Cognitive-Affective Theory of Learning with Media (Moreno, 2006; 2010; Moreno & Mayer, 2007; Park et al., 2014) and the Integrated Model of Cognitive-Affective Learning with Media (Plass & Kaplan, 2016) are notable in their direct attempts to incorporate affective states into the design and delivery of instruction. At the base of these theories and models are different yet overlapping approaches, the evolutionary approach and the concentration-intensity approach.

4.1.3.1. Evolutionary approach

In recent studies, scholars in CLT have adopted an evolutionary approach to expand the understanding of human cognitive architecture. They concurrently consider human cognition and other biological/evolutionary information processing systems to identify similarities and differences in their key traits and working principles (Plass & Kalyuga, 2019; Paas & Sweller, 2012; Sweller, 2018). The main distinction between humans and other animals in their ability to transmit, receive and process information is motivation (Geary, 2007; Plass & Kalyuga, 2019). Except for the basic evolutionary skills such as speaking and walking (i.e., primary knowledge) that can be learned naturally and implicitly, human learners need a sense of motivation that is a blend between self-interest and socially acceptable conventions to guide them towards learning domain-specific knowledge and skills. This is particularly required for learning in organised educational settings (Eccles & Wigfield, 2002; Likourezos & Kalyuga, 2017; Plass & Kalyuga, 2019; Wigfield & Eccles, 2000).

Similar understanding can be observed from the literature around Self-Determination Theory (SDT – Ryan & Deci, 2017) and its related concepts of intrinsic and extrinsic motivation. SDT assumes that people have inherent tendencies to pursue actions that bring them self-growth and self-development such as the kind of learning, social integration and connection with others that offer them joy and satisfaction (Ryan & Deci, 2020). These are described as intrinsic motivation. However, the proactive tendencies that form people's motivation towards learning are not automatic or entirely informed by their own interests, but are strongly influenced by externally determined values and standards, that is, extrinsic motivation (Ryan & Deci, 2020).

Intrinsic motivation has been demonstrated to play an important role in predicting students' performance in formal education (Froiland & Worrell, 2016; Gnambs & Hanfstingl, 2016; Taylor et al., 2014). Related studies across countries and learning contexts have also found that intrinsic motivation experienced by students tends to reduce over time (Lepper et al., 2005; Gillet et al., 2012; Scherrer & Preckel, 2019), suggesting that formal education has not provided sufficiently supportive learning environments for accommodating students' learning needs (Ryan & Deci, 2020). Likewise, several empirical studies related to CLT have also documented the parallel between changes in motivational beliefs and changes in functioning levels of cognitive load (Feldon et al., 2018, 2019; Likourezos & Kalyuga, 2017).

4.1.3.2. Concentration-intensity approach

Motivation and emotion within the realm of CLT can also be approached from a concentration-intensity perspective of learning (Kalyuga, 2015; Kalyuga & Singh, 2016). Cognitive load, according to this approach, is perceived as the intensity of concentration/focus/attention that cognitive processes require to achieve a specific goal within the 'time-scale' of the WM operation. Time-scale refers to the duration of focus (time) that the cognitive load needs to process the necessary information within the WM's limited storage capacity (scale) to achieve the goal. This time-scale ideally matches the limited storage and limited duration of the WM.

The concentration-intensity approach directly accounts for the limitations of the cognitive load or the WM as the key factors impacting levels of motivation (and changes in emotions) on a single operation over a short interval (Plass & Kalyuga, 2019). For simple to medium-difficulty tasks that can be satisfied within the WM's limits, there is little to no need on the learner's part to adjust their attention

distribution. However, for more complex learning tasks that involve multiple modalities, the time-scale is often shortened for each task to allow the attention to shift faster among different pieces of information. Conversely, for most tasks, the time-scale of an operation would likely be extended (still within the WM's limits) if the task is within the learner's expertise. This is because relevant schemas from their long-term memory would be retrieved back into the WM to process the new information (Plass & Kalyuga, 2019). This phenomenon is addressed in the literature as the long-term working memory phenomenon (Ericsson & Kintsch, 1995), the skilled memory effect (Ericsson & Staszewski, 1989) or the knowledge encapsulation effect (Rikers et al., 2000). It also accounts for the episodic buffer in which 'old' and 'new' information are integrated to form new schemas that Baddeley (2000) added to the WM model discussed above.

Therefore, to determine how different cognitive operations make demands on the WM (which in turn influence learner motivation), one needs to consider the level of complexity of the task (i.e., element interactivity) – or the level of concentration intensity demanded of learners to successfully process the task – and learners' previous knowledge or experience (i.e., their level of expertise). Since learning effectiveness can be significantly enhanced or hindered depending on how these factors interplay, researchers have experimented with managing time-scale to optimise learning motivation (Brünken et al., 2010; Fraser et al., 2015; Knörzer et al., 2016). Examples of common techniques include integrating information sources presented in various modalities instead of just one (e.g., an integration of images, videos or audios instead of only reading texts); or excluding potentially overloading extraneous details from the learning materials.

4.1.3.3. Emotions and CLT

The correlation between emotions and learning effectiveness is complex and learner specific. In the context of CLT, emotions that are involved in forming and changing motivation over time are often categorised as positive or negative emotions.

Positive emotions are generally viewed as an integral part of motivation and thus a contributing factor to optimising intrinsic load (Erez & Isen, 2002; Isen & Reeve, 2005; Pekrun, 2006; Pekrun & Linnenbrink-Garcia, 2012). Studies have found positive emotions to function as a booster to working memory by enabling more creativity and pro-social behaviors, utilising more cognitive resources and aiding executive processes (Fredrickson, 2001; Isen et al., 1987; Lewis and Critchley, 2003). Positive emotions also act as effective retrieval cues to recall information from long-term memory (Ericsson & Kintsch, 1995; Laird et al., 1982). In contrast, negative emotions may use up available working memory, leading to weaker recall power, fewer creative processes and lower quality learning outcomes (Curci et al., 2013; Plancher et al., 2018; Zlomuzica et al., 2016).

Studies on negative academic emotions have largely focused on stress, anxiety, frustration and boredom (Poropat, 2009; 2014; Seipp, 1991; Zeidner, 1998). The dominant view is that negative emotions, and sometimes positive emotions too (Oaksford et al., 1996; Pekrun & Linnenbrink-Garcia, 2012), can over-burden the extraneous load and reduce the WM capacity to handle the main task, leading to reduced effectiveness and performance (e.g., Beilock et al., 2004; Brand et al., 2007; D'Mello & Graesser, 2012; Fraser et al., 2015; Pekrun & Linnenbrink-Garcia, 2012). That said, within learning contexts in which emotions are part of the intended learning outcomes (e.g., learning the skill of delivering bad news to patients in medical

education), processing and regulating negative emotions then become unavoidable and are therefore associated with the intrinsic cognitive load (Fraser et al., 2014, 2015). Additionally, some studies have also suggested that certain types of negative emotions such as confusion may actually boost learners' mental effort and enable deep learning (D'Mello et al., 2014; Knörzer et al., 2016), or at least facilitate collaborations and increase learning (Stark et al., 2018a, 2018b). This can be explained by learners shifting their attention to learning activities to improve their mood or their performance in order to avoid or recover from negative academic results (Bless & Fiedler, 2006; Knörzer et al., 2016; Lyubomirsky et al., 2011; Pekrun & Linnenbrink-Garcia, 2012; Wang et al., 2021).

In relation to memory retention, empirical findings from cognitive neuroscience found that memories heightened by emotion generally take longer to be forgotten (Sharot et al., 2004); emotional activation at any time during learning (i.e., before, during, shortly after) can enhance memory retention and retrieval (McGaugh, 2018). Negative emotional stimuli do engage more neural activity from visuosensory regions of the brain than positive emotional stimuli (Dev et al., 2022; Thakral et al., 2022), but memories created with negative stimuli are harder to retrieve later (Thakral et al., 2022).

The discussion of CLT so far positions the processing of multimodal information within the scope of the working memory capacity as well as various interpretations on how to best navigate the cognitive load or attention through manipulating information presentation, motivation and emotion. The following section on Dual Coding Theory focuses specifically on instructional designs that apply the understanding of how the brain encodes information from various modalities differently to optimise learning

effectiveness.

4.2. Dual Coding Theory (DCT)

Dual Coding Theory (DCT), similar to Visual Theory, asserts that knowledge acquisition is superior when the dual communication modes of visual and verbal are activated and employed. This is because every different sensorimotor modality (e.g., words, still images, moving images, auditory materials) activates a different part of the brain via a distinct neural pathway, regardless of being accessed perceptually, verbally or cross-modally (Cuevas, 2016; Paivio, 2014; Patterson et al., 2007; Welcome et al., 2011). More recent empirical research in fields such as neuroscience and educational psychology have also suggested that a separate neural channel is responsible for processing emotion as a source of information in similar ways to linguistic and visual information (Goetz et al., 2007; Paivio, 2007, 2013; Plass & Kalyuga, 2019).

One of the most common reasons for using FF/TV in teaching has been identified as the advantage of illustrating and visualising both abstract concepts (e.g., 'empathy', 'beauty') and concrete concepts (e.g., 'computer', 'classroom') (Fleischer, 2018; Karasik et al., 2014; O'Boyle & Sandona, 2014). The cognitive processes involved in analysing and schema-forming of these two types of concepts are distinctly different. Many cognitive and neuroimaging studies related to DCT have investigated this topic through a range of measures including functional magnetic resonance imaging (fMRI), repetitive transcranial magnetic stimulation (rTMS), positron emission tomography (PET) and electroencephalogram (EEG). At first glance, abstract concepts lack a clear point of reference that can be experienced or verified by human senses (Harpaintner et al., 2020; Pavio, 1986), which makes amodal theories of cognition (i.e., theories that follow the premise that information is present across different senses

without a modality) a suitable starting point to understand them (Harpaintner et al., 2020; Mahon & Caramazza, 2008). Empirical evidence collected via amodal theories suggest that all verifiable sensory input experienced via the human senses (e.g., auditory, visual, tactile) while learning abstract concepts (or conceptual knowledge) tend to be mostly absorbed into the construction of an abstract schema stored in the long-term memory (Hoffman et al., 2012; Kiefer & Pulvermüller, 2012; Mahon, 2015a, 2015b; Rogers et al., 2014).

Consider the learning of the abstract concept 'empathy', for example. Learners typically may acquire an understanding of empathy via various stimuli such as reading a textbook definition, listening to a story, watching a movie, or experiencing a social situation that demonstrates empathy. These initial experiences will be processed and integrated to form a general understanding of the concept. The specific concrete examples of empathy provided by said stimuli will become integral yet blurry parts of their final knowledge, or schema, of what empathy means.

However, if we examine this line of reasoning from a grounded cognition approach (i.e., theories that regard perception as modality-specific such as DCT, or regard perception as multimodal), the conclusion remains the same, except that a grounded cognition theory would allow closer investigation of specific stimuli for learning abstract concepts. This draws from recent hybrid frameworks in which amodal, modality-specific and multimodal approaches are all considered together (Fernandino et al., 2016; Garagnani & Pulvermuller, 2016; Kiefer & Pulvermüller, 2012; Patterson & Ralph, 2016; Popp et al., 2019; Ralph et al., 2017). Therefore, although DCT (Paivio, 1986) does not predict the necessity of modalities other than verbal information (i.e., language) in the learning of abstract concepts (Harpaintner et al.,

2020), DCT is still helpful to our discussion of FF/TV in teaching.

If we accept that the formation of abstract concepts in human cognition does depend on initial learning of a range of concrete concepts, DCT can still be understood to support a multimodal approach to teaching concrete concepts that in turn lead to the abstract learning. Back to our 'empathy' example, learners may not fully understand what 'empathy' means unless they can solidify what they have learned from provided/experienced/encountered concrete examples (e.g., a story, a movie, a roleplay, a real-life situation) to guide them through identifying what makes up the various aspects of the concept of 'empathy'.

In learning concrete examples, DCT dictates that educators should present relevant stimuli in several modalities so that students have more data sources to draw from, thus utilising both brain hemispheres to process information and avoiding cognitive overload; this in turn allows a more accurate and long-lasting understanding of abstract concepts. This supports the use of FF/TV's audio-visual representations to aid student learning of conceptual knowledge. Moreover, the acquisition of conceptual knowledge highly depends on previous individual sensory and motor experience throughout a person's life up to the point of acquisition (Harpaintner et al., 2020; Kiefer & Pulvermüller, 2012; Trumpp & Kiefer, 2018; Willems et al., 2010). This helps explain why students tend to have slightly different understandings of abstract concepts despite learning from the same materials, or that they might arrive at different interpretations of the same FF/TV viewing.

4.3. Applied learning effects of CLT and DCT: Merits and limitations

'Applied learning effect' is a term used to describe a practical effect or a principle that can be applied to relevant learning contexts to improve the quality of learning. There

are many applied learning effects that have been generated from the hypotheses of Cognitive Load Theory and Dual Coding Theory grounded in empirical research. For the purpose of framing the current research on FF/TV use in teaching, only the effects most relevant to multimodal technology-assisted learning are included here. These are: worked example effect, expertise reverse effect, redundancy effect, split attention effect, modality effect, and multimedia learning effects.

4.3.1. Worked example effect and expertise reversal effect

4.3.1.1. Worked example effect

Understanding of the worked example effect emerged from assumptions about the limited capacity and duration of human cognitive load explained by WM models (Atkinson & Shiffrin, 1968; Baddeley, 1986, 2000; Cowan, 2001, 2010; Peterson & Peterson, 1959) and CLT (Paas & van Merriënboer, 2020; Sweller et al., 2011). It has been proposed and extensively researched for its practical usefulness in assisting new learners to familiarise themselves with a specific task domain (Cooper & Sweller, 1987; Glogger-Frey et al., 2015; Renkl, 2013, 2014; Sweller & Cooper, 1985). The idea is that educators provide a worked example, which is a 'step-by-step demonstration of how to perform a task or solve a problem', so that students can observe a practical demonstration to learn the necessary knowledge and skills, which can then be applied to a different task or problem (Clark et al., 2006, p. 190). Use of worked examples has been robustly tested against other forms of instructional approach, such as problem-solving or problem-exploring methods, and convincingly demonstrated to be effective in reducing learners' cognitive load for learning new knowledge and subsequently increasing their test performance (Chen et al., 2018; Kalyuga, 2007; Reisslein et al., 2006; Van Gog & Rummel, 2010).

Besides learners' level of expertise (i.e., novice vs. advanced learners), the effectiveness of worked examples depends on self-explanation and element interactivity.

Self-explanation refers to the articulations or artefacts that learners produce when they explain what they learned from the materials (e.g., the worked examples) to themselves (Chi et al., 1989). The seminal work by Chi and colleagues (1989) found that learners who integrated their prior knowledge and/or the broader disciplinary principles into their worked example when revising tended to perform better on tests than those who restricted their example study to mere paraphrasing or rote memorisation. This means that the more well-integrated self-explanations a learner can produce, the more inferences they can generate beyond the worked examples, the more deeply they are engaged in the learning process, the sooner they can begin to learn independently from the examples, and therefore the more they benefit from the worked example effect (Bitchler et al., 2022; Chi & Wylie, 2014; Rittle-Johnson et al., 2017; Renkl, 1997; Roy & Chi, 2005; Sweller et al., 2019). These observations describe the mechanism of self-explainion, which requires learners to pay more attention to the structural aspect of the examples (as opposed to their superficial features), helping them to identify the recurring patterns and recognise the core principles, so that they can start making generalisations and transfer that knowledge into new contexts of problem-solving (Adams et al., 2014; Bitchler et al., 2022; Renkl, 2014; van Gog & Rummel, 2010). Other than self-explanatory statements, self-explanation can also take the form of different activities that generate inferences (Rittle-Johnson et al., 2017) such as identifying true/false statements or explaining correct statements.

Element interactivity refers to the interconnected components within learning

material that need to be processed together within the learner's cognitive load (Chen et al., 2018; Sweller et al., 2011). It therefore measures the difficulty of learning materials, or the relationship between the nature of the material and the learners' expertise level. While research data on qualitative materials appear limited, multiple studies using math problems have suggested that a higher level of element interactivity in learning material would require a higher level of guidance (e.g., worked examples), whereas learning from material with a low level of element interactivity would be more effective with low guidance (e.g., problem-solving) (Ayres, 2006; Blayney et al., 2010; Chen et al., 2015).

4.3.1.2. Expertise reversal effect

When teaching more advanced or experienced learners, CLT recommends considering the 'expertise reversal effect'. After learners have already acquired the necessary knowledge for problem-solving or performing a skill in their long-term memory from worked examples via their intrinsic load (and thus become more advanced/experienced/knowledgeable), they no longer require the same level of detailed guidance from these examples. If worked examples are still presented to these learners, it will increase their extraneous load and ability to process and reconcile this repeated information with their stored schemas, resulting in increased cognitive load and decreased learning effectiveness (Chen et al., 2018; Kalyuga, 2007; Kalyuga & Renkl, 2010; Sweller et al., 2011). Therefore, when learner expertise is high, using worked examples not only has little to no benefit, but may even have reversed or detrimental effects on learning (Chen et al., 2017; Nievelstein & Boshuizen, 2013).

Some studies have inquired into the middle space between the worked example effect and the expertise reversal effect, suggesting that the transition

between these two stages in learner cognition is in fact gradual (Chen et al., 2018). Learners do not switch from a novice learner to an advanced one after a certain number of worked examples; rather, their understanding and expertise mature gradually over time. Instruction therefore should also reflect this gradual process by recognising when the transition begins and adjusting the instruction level accordingly. This transition is termed 'fading worked example effect', during which completion tasks may be suitable to provide a mixture of example-styled guidance and problem-solving exercises to help learners apply their knowledge and/or practise their skill (Van Merriënboer et al, 2003). These completion tasks should still be presented in the same sequence of steps as the worked examples so that learners can reinforce their familiarity with the proper course of actions, while the level of guidance can be gradually decreased and learner independence increased (Renkl et al., 2000). This fading guidance strategy has been tested to improve instructional efficiency in comparison to the traditional switch between full-on worked examples and problem-solving approach in both classroom and lab learning contexts (Renkl et al., 2002). More specifically, Reisslein and colleagues (2006) experimented with immediate, fast and slow paces of fading. They found that the most advanced learners (i.e., experts) learned best from immediate and fast fading instructional design, while new learners (i.e., novices) learned more from a slow pace in which explicit instruction is required for the most difficult steps (i.e., steps with high levels of element interactivity) of the procedure.

There was also evidence that suggested individual learner's 'shifting ability', a cognitive function that allows us to shift smoothly from performing one task to another, may impact the effectiveness of worked examples. Learners with higher

shifting ability tend to benefit less from worked examples than those with lower shifting ability (Bichler et al., 2020; Schwaighofer et al., 2016).

4.3.1.3. Worked examples and expertise reversal effects in FF/TV teaching

In the case of teaching a specific skill, educators need dual worked examples to demonstrate to students how to acquire the targeted skill. For example, if teaching argumentation in essay writing, the instructor would need an essay topic and an example of how to make convincing arguments on that topic (e.g., Hefter et al., 2014; Schworm & Renkl, 2007). In terms of using FF/TV to teach, lecturers need to recognise the high levels of element interactivity within their various modalities (e.g., auditory, visual, narrative, verbal, affective) and the cinematic effects that seamlessly blend those modalities together on screen. The challenging issue with FF/TV, as discussed in Chapter 2, is that viewers in a casual or entertainment-seeking environment are usually unaware of this high element of interactivity (i.e., passive consumption). When transferring such FF/TV content into the classroom context, lecturers therefore need to cognitively prepare students based on the stated or intended learning goals prior to FF/TV exposure.

In particular, educators would require double and often triple worked examples if there are additional skills required beyond film analysis. These involve: (1) the specific manner in which FF/TV representations are presented (e.g., full length vs. short clips, regular pauses vs. no interruptions); (2) step-by-step instruction on how to analyse the representation using cinematography, film grammar and discipline-specific content knowledge; and (3) clear explanation on how the additional skill(s) such as critical-thinking, perspective-taking or empathy can be actively learned from the film analysis process.

For learners who are unfamiliar with learning domain-specific knowledge (i.e., any discipline outside film or media studies) through FF/TV representations, the worked example effect indicates the need for explicit instruction on the basic concepts of cinematography and film grammar, and step-by-step demonstration of how to apply these concepts in analysing an FF/TV representation. Lecturers should observe the worked example effect when introducing FF/TV concepts and monitor the expertise reverse effect by adjusting the level of details and specificity in instruction to match students' developing expertise in order to minimise the unnecessary cognitive load in processing already-known information.

4.3.2. Split attention effect, modality effect and redundancy effect

The split attention, modality and redundancy effects all deal with the presentation or inclusion of multiple sources of information in learning materials such as worked examples or task instructions.

4.3.2.1. Split attention effect

Split attention effect is concerned with information sources that have logical relations with one another, and therefore are unintelligible unless they are simultaneously processed. In technology-assisted learning contexts, the most common cause of such unproductive split attention is when the co-dependent information sources are shown on different pages, screens or slides (Ayres & Sweller, 2005; 2014; Cerniak et al., 2009; Kester et al., 2005; Sepp et al., 2019). With respect to the use of FF/TV, sound, visual and sometimes subtitles are joint sources of content that need to be presented together to be intelligible. In these cases, the split attention effect dictates that they should be presented in close proximity or physically integrated. This way, learners do not have to hold semi-intelligible information in their limited working memory for very

long before reaching the remaining elements to understand the whole content (Chandler & Sweller, 1992; Kalyuga et al., 1999). Instead, they can focus their attention on processing all of the input with minimal effort spent on bridging the distance between them, which – according to CLT – can improve intelligibility, reduce element interactivity on extraneous load and boost learning effectiveness (Cerniak et al., 2009; Kester et al., 2005; Tarmizi & Sweller, 1988).

4.3.2.2. Modality effect

Related to the split attention effect, the modality effect becomes relevant when multiple sources of information presented in different modalities (e.g., visual, auditory, text) need to be processed together to improve intelligibility (Ayres & Sweller, 2005; Mayer & Moreno, 1998; Rummer et al., 2010; Sweller, 2020). Based on the theoretical assumptions of CLT, DCT, the working memory model (Baddeley, 2000) and empirical evidence, the modality effect recommends dual-modal (e.g., audio-visual materials), rather than mono-modal presentations of information to achieve optimal learning outcomes (Ginns, 2005; Kühl et al., 2011; Liu et al., 2021; Low & Sweller, 2014; Moreno & Mayer, 1999; Noetel et al., 2021; Tindall-Ford et al., 1997). The key idea is to manipulate the inherent limitations of the working memory by utilising multiple information processing channels that complement each other to avoid cognitive overload on one channel (Brünken et al., 2004; Liu et al., 2019; Reinwein, 2012). Closely related to the spatial contiguity effect in the Cognitive Theory of Multimedia Learning (see section 4.4), the modality effect has been tested and confirmed in a range of multimedia learning environments (e.g., animation, simulation and sensory modalities – She & Chen, 2009; dual-task methodology – Brünken et al., 2004; computer animation – Moreno & Mayer, 1999; graphic representations and narrations

– Leahy & Sweller, 2016) across disciplines such as geometry, botany, and history (as reviewed by Ginns, 2005).

Transient information is another important consideration when observing the modality effect. Transient information refers to information-delivery sources in which explanatory information disappears before learners can properly process it. Examples of transient information include spoken text, animated infographics, manipulation instructions when learning with computer simulation, and very long videos. Transient information sources are characterised by their impermanent nature; they are not easily paused, traced back, repeated, verified or revisited as compared to more permanent sources such as written text (Singh et al., 2012).

From a CLT perspective, transient presentation is considered laborious on a learner's cognitive load because it typically requires learners to hold and process important information in their working memory while having to deal with the next task of a different modality (Leahy & Sweller, 2016; Liu et al., 2020; Singh et al., 2012; Wong et al., 2012). The detrimental effects of transient information can be overcome by modifying or reproducing these sources into traceable materials to allow self-paced learning (Ginns, 2005; Reinwein, 2012; Tabbers et al., 2004), or by segmentation of information into more manageable chunks to reduce cognitive load (Leahy & Sweller, 2016; Singh et al., 2012). The discussion on transient information has implications for the use of full-length or long excerpts of feature films or TV episodes, which contain multimodal information presented in a rather fluid and transient manner.

4.3.2.3. Redundancy effect

While the split attention effect and modality effect deal with inseparable multimodal information sources, the redundancy effect is observed when those information

sources are comprehensible in isolation from each other. For example, when an educator reads out loud what is already written on their presentation slides, the relationship between sound and vision is repetitive and demanding extraneous load to process the same information twice in two different models, and possibly to match the reading speed of individual students to that of the lecturer, making the process redundant. In contrast, when visuals in FF/TV are accompanied by sound (i.e., speech, music, environmental sounds), their relationship is complementary as they each offer different information for the audience to interpret the content being presented to them. The redundancy effect suggests that when learners have to deal with redundant information, their processing capability is slowed down compared to when they are provided with just enough non-repetitive information (Chandler & Sweller, 1991; 1996; Kalyuga et al. 1999; Kalyuga et al., 2004; Liu et al., 2012; Mayer, 2017).

CLT recognises a range of circumstances in which redundancy is problematic. Aside from overlapping information being presented in different modalities (e.g., text, diagram, spoken words), unnecessary or irrelevant information such as background noise and music in general can also be distracting and thus hinders the learning process (Sweller, 2020). The proliferation of learning technologies from a CLT perspective has increased the redundancy effect on learning and reduced the pedagogical effectiveness of technologies due to the temptation of including 'seductive details' (Garner et al., 1989) from technologically novel sources of information such as videos, narrations, sound effects or animations to stimulate student engagement (Baker et al., 2018; Harp & Mayer, 1998; Liu et al., 2021; Sundararajan & Adesope, 2020; Sweller, 2020). This phenomenon has been addressed in depth in the discussion of the coherence effect (see 4.4.1.3) to emphasise the need

for educators' attention to making explicit connections between details included in learning materials and the intended learning outcomes or goals.

4.3.3. Contemporary empirical evidence of learning effects

In general, the learning effects discussed above operate on the key assumption that higher levels of cognitive load will result in lower learning effectiveness due to the limitations of our working memory. The main goal of these effects therefore is to inform educators of how to design instruction that provides the optimal amount of information in the optimal manner. The key advice extracted from the traditional understanding of learning effects has been to include only those necessary elements in a relatively simple and straightforward presentation to avoid cognitive overload.

However, researchers have recently come to question the simplicity of controlled testing environments compared to the complex real-life media-saturated and unpredictable learning environment encountered by today's students (Skulmowski & Xu, 2022). More recent findings in multimedia, interactive and online learning environments have increasingly identified exceptions to the learning effects described above, thus raising concerns about the validity and widespread application of these learning effects in contemporary diverse classroom contexts (e.g., Bateman et al., 2010; Ginns et al., 2020; Seufert et al., 2017; Skulmowski & Rey, 2020a, 2020b, 2021). For example, researchers have found that high levels of interactivity (and hence high cognitive load) can be significantly effective in inducing learner interest and engagement (Mayer & Johnson, 2008; Pedra et al., 2015; Skulmowski & Xu, 2022; Yue et al., 2013), while medium levels can be more beneficial to learning performance, learning outcomes and long-term recall without overworking the working memory (Bateman et al., 2010; Skulmowski & Rey, 2018). One possible interpretation of why a

moderate level of extraneous visual detail or redundant 'embellishments' may actually be more beneficial to learning rather than none is because they engage motivation and emotion (Plass & Kalyuga, 2019). The idea is that educators can intentionally embellish the learning environment with elements that – albeit irrelevant and redundant pedagogically – can elicit positive emotions to increase learner motivation and cognitive engagement in the learning process (Brom et al., 2018; Mayer & Estrella, 2014; Plass et al., 2014). Therefore, it is now being argued that adding a small to medium amount of redundant, irrelevant or completely decorative details (such as background music, warm colours, comforting visualisations like baby-like faces, or happy stories) can indirectly enhance learning (Skulmowski & Xu, 2022).

That said, in media-inclusive learning environments, there is very little consensus regarding which level of interactivity and extraneous detail is optimal for learning due to the vast number of variables in each learning context (Carney & Levin, 2002; Homer & Plass, 2014; Kalet et al., 2012). On the spectrum of element interactivity, the lowest interactive level typically refers to switching between two modes of learning such as playing and pausing a video, and the highest refers to the state of constant changes based on each learner's action/decision-making such as operating in a virtual reality setting. Responding to this highly contextualised nature of element activity and extraneous details, researchers have proposed the method of cost-and-benefit analysis to manage cognitive load and potentially inform educators on a case-by-case basis about how much interactivity is best for their context (Kalyuga & Singh, 2016; Markransky et al., 2019; Skulmowski et al., 2016). Upon such analysis, a similar level of element interactivity is also recommended for assessments to measure the relationship between interactivity and learning outcomes more accurately

(Hollender et al., 2010; Skulmowski & Rey, 2020a).

Studies on the learning effects within contemporary technology-assisted learning environments have also caused a reconsideration of the assumed impact of realism on learning. Cognitive load theorists often assume that realistic details in visual information tend to require a higher extraneous load because they make the visualisation harder for students to discern (Berney et al., 2015; Brucker et al., 2014; Scheiter et al., 2009; Skulmowski & Rey, 2018b). Those who follow the traditional CLT approach therefore would often opt for simplified visualisations such as icons or symbols, rather than photographs, to avoid overworking students' cognitive load (Huk, 2006; Renkl & Scheiter, 2017). However, the currently popular use of FF/TV, computer simulations, schematic visualisations, video games, and virtual reality learning environments in education speaks volumes about realism's potential pedagogical merits of engagement, retention and high performance (Goldstone & Son, 2005; Nebel et al., 2020; Skulmowski & Rey, 2020b, 2021).

This co-existence of improved learning outcomes and increased cognitive load contradicts the fundamental assumption of CLT (also known as the 'realism paradox'). Some researchers use the disfluency effect to explain this phenomenon, in which challenging learning materials can facilitate higher levels of engagement and effort investment, and thus reduce superficial processing from learners (Skulmowski & Xu, 2022). Research into the disfluency effect is still relatively limited and controversial as studies have mostly attempted to modify readability of written or printed texts to induce effort from students (Diemand-Yauman et al., 2011; Eitel et al., 2014; Seufert et al., 2017; Xie et al., 2018). Nevertheless, it does offer a possible explanation as to why lecturers can find students struggling or requiring high levels of guidance when

learning with FF/TV, while still appearing to be visibly engaged and demonstrating deep and reflective learning outcomes.

Such positive outcomes are more likely to be achieved if assessment design echoes the similar visualisations or multimodal materials used in teaching and learning, rather than a single-modal testing method (Skulmowski & Rey, 2021). Despite the potentially high extraneous load during the learning phase, the mixed results discussed so far point to the necessity of conducting a risk-benefit analysis, in line with educators' individual teaching goals, to determine whether realistic visualisations would enhance or restrict their student learning (Skulmowski & Rey, 2022).

4.4. Cognitive Theory of Multimedia Learning (CTML) and effects

Although the Cognitive Theory of Multimedia Learning (CTML) is recognised as a separate cognitive learning theory, it is often used in conjunction with DCT or CLT or both (e.g., Alemdag & Cagiltay, 2018; Cárdenas-Robledo & Peña-Ayala, 2018; Kanellopoulou et al., 2019; Plass & Kalyuga, 2019). CTML consists of a series of assumptions (i.e., dual-channel, limited-capacity, active processing) about cognition and learning with multimedia materials. The lead author in the research on CTML, Richard E. Mayer, summarised the theory: 'multimedia instructional messages that are designed in light of how the human mind works are more likely to lead to meaningful learning than those that are not so designed' (Mayer, 2014, p. 43). 'How the human mind works' refers to the assumptions derived from studies about DCT, CLT and their applied learning effects.

While CTML's focus on instruction and learning is vital in advancing our collective understanding of how CLT and DCT are applied in the classroom context, the theoretical foundation of CTML essentially combines the key concepts of DCT and CLT:

dual verbal and audio-visual channels of information reception and processing (i.e., DCT – Paivio, 1986; Baddeley, 1999) and limited duration and storage capacity of the WM load or the cognitive load (Mayer, 2005; Baddeley, 1999, 2000; Sweller, 1988, 2011). Some argue that CTML adds a third unique component of 'active processing' to highlight learner autonomy in 'selecting, organising, and integrating incoming information to construct coherent mental representations' (Mayer et al., 1995; Plass & Kalyuga, 2019; Sundararajan & Adesope, 2020). However, the individuality of learners in their learning process is addressed in the contemporary extensions of CLT to include motivational and affective factors, whose level of influence and content differ from one individual learner to another, depending on their predispositions (Sweller & Sweller, 2006, 2012). Attempts to capture and measure more accurately how varied the effect of these factors is on different learners have used eye-tracking technology research (Alemdag & Cagiltay, 2018; Hyönä, 2010; van Gog & Jarodzka, 2013).

To avoid repetition, this thesis therefore will focus on the empirical findings of CTML that inform 'good' instructional design in relation to effective multimedia integration, rather than re-explaining its evolving theoretical developments. Because of this, the component effects of CTML will be categorised alongside other applied learning effects directly derived from CLT and DCT used for analysing survey and interview data.

4.4.1. Multimedia learning effects (MLE)

This research selects six multimedia learning effects (MLE) that are complementary to the four applied learning effects derived from DCT and CLT discussed earlier. These are the spatial contiguity effect, temporal contiguity effect, signalling effect, personalisation effect, coherence effect and pre-training effect.

4.4.1.1. Spatial contiguity effect

The spatial contiguity effect is often used to counteract the split attention effect in multimedia learning (Ayres & Sweller, 2014; Johnson & Mayer, 2012; Mayer, 2001, 2005, 2009; Mayer & Fiorella, 2014; Moreno & Mayer, 1999; Sweller et al., 2011). The idea is to position multimodal yet interconnected sources of information in direct contact or close proximity to each other to increase readability and reduce extraneous cognitive load (Mayer, 2002, 2005; Mayer & Fiorella, 2014; Moreno & Mayer, 1999; Schroeder & Cenkci, 2018). This effect has been tested in a variety of learning contexts. For example, Owens and Sweller (2008) used instructional designs that spatially integrated both texts and images in music instruction; Schmidt-Weigand and colleagues (2010) tried animation-based instruction; Craig and colleagues (2015) even utilised virtual humans to assist their teaching. Generally, applying the spatial contiguity effect to designing learning materials has been found helpful in enhancing student performance in recall and transfer (Ginn, 2006).

4.4.1.2. Temporal contiguity effect

As space and time are often connected, the temporal contiguity effect is often paired with the spatial contiguity effect. Multiple meta-analyses have systematically investigated the validity of the temporal contiguity effect and found that processing interconnected information expressed in different modalities simultaneously (i.e., temporally coordinated) imposes less work on extraneous cognitive load than if presented sequentially (i.e., temporally separate; see, for example, Ginns, 2006; Mammarella et al., 2013; Mayer & Anderson, 1991; Mayer & Sims, 1994; Schüler et al., 2012). Length of time appears to be an influencing factor, since the temporal contiguity effect has also been found to occur more visibly during longer exposure to

multimodal learning conditions (Liu et al., 2022; Mayer et al., 1999).

4.4.1.3. Coherence effect

Connected to the redundancy effect discussed previously, the coherence effect was conceptualised as a response to the rich literature on the 'seductive details effect' that was proposed by Garner, Gillingham and White in 1989 (Harp & Mayer, 1998; Lehman et al., 2007; Lenzner et al., 2013; Mayer, 2019; McCrudden & Corkill 2010; Park et al., 2015a, 2015b; Rey, 2014; Sundararajan & Adesope, 2020). Seductive details are defined as additional details that are not relevant to achieving the learning goal (Harp & Mayer, 1998), yet are included in instructional materials to stimulate student situational interest (Park et al., 2015a), which is usually based on instructors' assumptions about novelty, personal relevance or aesthetics to trigger student situational interest (Hidi & Renninger, 2006). They can be in any modality such as visual, auditory or verbal (Sundararajan & Adesope, 2020) and are often found to be detrimental to learning performance in terms of transfer and recall (Rey, 2012). The coherence effect seeks to explain the coherence disruption caused by these seductive details by drawing on what we know about the limited capacity of the WM (Mayer, 2014; Sweller et al., 2011). The coherence effect proposes that including seductive details can both distract students' limited attention to focus on the main content (Chang & Choi, 2014; Lehman et al., 2007), and also seriously hinders students' ability to construct a coherent memory of the intended target knowledge (McCrudden & Corkill, 2010; Towler et al., 2008). Instructors therefore should be selective in designing their instruction and presenting learning materials in ways that account for all details contributing to optimal knowledge acquisition.

4.4.1.4. Pre-training effect

The pre-training effect claims that when multimedia information is presented, learners learn more effectively, pay more attention and engage more meaningfully with learning materials if they are primed or familiarised with prerequisite knowledge (e.g., relevant concepts, names or ideas); this frees up the cognitive load of having to deal with entirely new information (Mayer & Pilegard, 2014; Kester et al., 2004; Tsai et al., 2022; Yücel & Usluel, 2016). However, finding the right amount of guidance to achieve the optimal pre-training effect depends greatly on learners' level of expertise: novice learners would benefit more from pre-training practices than advanced/experienced learners (Kalyuga, 2007). To minimise the redundancy effect in giving instruction, more learning autonomy and meticulous planning are recommended in designing learning materials and activities for the latter group of learners, especially in complex and interactive environments (Meyer et al., 2019; Tsai et al., 2013; Yang et al., 2018).

4.4.1.5. Signalling (or cueing) effect

Similar to the spatial contiguity effect, the signalling effect is often used to reduce the intensity of the split attention effect. Signalling refers to the practice of labelling multimodal sources of information that are isolated from each other through deictic references (e.g., 'see Figure 1'), explicit labels placed close to a visual element (Schneider et al., 2018; van Gog, 2014), and colour coding (Ferrara & Butcher, 2011; Jamet et al., 2008; Kalyuga et al., 1999; Ozcelik et al., 2009) to draw learners' attention to the relationship between them. Signalled information, especially colour-coded in the case of written/printed texts, has been found to enhance retention, increase learners' attention and enable faster identification of relevant information compared to non-signalled information (Richter et al., 2016; Schneider et al., 2018; Wang et al.,

2020).

4.4.1.6. Personalisation effect

The personalisation effect focuses on the communication style used to convey instruction and/or present instructional materials. It suggests that when the style is conversational and personal, rather than formal and impersonal, learners are likely to connect more deeply and meaningfully with learning materials, leading to higher performance and better outcomes (Mayer et al., 2004, 2005). The main methods proposed to achieve this effect in previous studies include: (1) using first- and second-person constructions such as *you*, *I* and other possessive pronouns instead of the third-person perspective; and (2) making direct remarks to individual learners instead of general statements to everyone (Mayer, 2005). Specifically, empirical tests found that memory retention and knowledge transfer were improved in accordance with different levels of personalisation through modifying communication between the instructor and students (Moreno & Mayer, 2000, 2004; Mayer et al., 2004).

The personalisation effect can be interpreted as a social cue which, similar to the rationale behind the signalling/cueing effect, prompts the social sense of responsibility in learners to process and respond to the information being communicated to them directly and personally (Mayer, 2005). This sense of responsibility is often called learner interest or engagement, which has a positive correlation with performance and learning outcomes (Mayer, 2001; Wade, 1992). Even in our interactions with computers or automated communication, we are still predisposed to apply the same rules, reasons and feelings as in human-human interactions (Moreno & Mayer, 2004; Reeves & Nass, 1996).

Humans' perceptiveness towards personalised communication is evidenced in

cognitive science that proposes that when people deal with new information related to them personally, they more readily activate their relevant existing knowledge to connect to it (Moreno & Mayer, 2000) and thus their memory retention is higher (Symons & Johnson, 1997; Turco, 1996). Although this personal-relevance approach is a more generally favoured explanation by researchers than the social cue/responsibility approach, some studies have shown that information relevance can help increase learner motivation (Keller & Suzuki, 1988; Stiller & Jedlicka, 2010), which essentially connects the two approaches.

4.5. Applying the learning effects to teaching with FF/TV

With respect to FF/TV use in teaching, affective factors do appear to play a major role in conditioning student learning, which is clearly reflected in the heightened motivation observed in students by educators (Donaghy, 2019; Kidron, 2012). As discussed in Chapter 2, many educators found the strong emotional engagement that FF/TV representations have on students can be both pedagogically helpful and also challenging to navigate (Anderson, 1992; Bassham & Nardone, 1997; Bluestone, 2000; Briggs, 2011; Donnelly, 2014; Fleischer, 2018; Karasik et al., 2014; Masters, 2005). Therefore, it is well worth exploring how FF/TV's affective elements interact with a learner's cognitive load.

As recent studies critique the simplified focus of CLT and its applied learning effects, the low to medium levels of extraneous load caused by the split attention, modality or redundancy effects can in fact result in a higher level of motivation, engagement and effort investment in students, which may lead to deeper learning outcomes (Bateman et al., 2010; Pedra et al., 2015; Plass & Kalyuga, 2019; Skulmowski & Xu, 2022). Therefore, in the context of FF/TV use in teaching, where teaching goals

may be beyond simply high recall and transfer rates, educators may strategise their presentation of multimodal information sources depending on their prioritised learning outcomes. In particular, educators who use FF/TV may need to determine the optimal spatial and temporal contiguity and coherence of audial (e.g., FF/TV sound, verbal lecturing), visual (e.g., FF/TV visuals, use of screenshots), and textual (e.g., subtitles, accompanied lecture slideshows, lecture notes, worksheets) sources of information to be presented to students. Considerations about pre-training necessity, signalling and personalisation possibility are also important parts of the picture.

4.6. Conclusion

This chapter discussed recent research on Cognitive Load Theory, Dual Coding Theory and the Cognitive Theory of Multimedia Learning. These theories, alongside their applied effects, function as evidence-based guidelines for the analysis of pedagogical practices throughout different phases of the teaching cycle such as the design, delivery, reflection, redesign of materials that involve FF/TV. Such analysis aims at identifying both effective and ineffective practices through established theories of learning, with a view to making recommendations for a more empirically informed and pedagogically successful integration of FF/TV into university teaching.

CHAPTER 5

TPACK AND TEACHING EVALUATION MODELS

This chapter addresses two aspects of teaching that are relevant to improving the integration of FF/TV into education. It first reviews the theoretical and practical developments of the Technological Pedagogical And Content Knowledge (TPACK) model (Mishra & Koehler, 2006) centred around the integration of technology in teaching, against which the research will explore the technological aspect of teaching with FF/TV. The collaborative discourse embedded in the Learning By Design (LBD) approach to educators' professional development of TPACK stands out as a suitable model to consider for future training resources for educators who use FF/TV in their teaching. The chapter then introduces and discusses the dual model of assessing and implementing Teachign Evaluations (TE) (Smith, 2008). The first component is the Four Quadrant (4Q) model summarising a range of information sources for TE, which is integrated into the second component – the Active Learning Cycle (ALC). This ALC, rooted in action learning research (Revans, 1980, 1983), provides a model for analysing, interpreting and implementing the TE data collected from 4Q in order to improve teaching quality. The practical implications of this dual model for pedagogical use of FF/TV are then discussed.

5.1. Technological Pedagogical And Content Knowledge (TPACK) model

The idea that educators need a multidimensional base of knowledge for high-quality teaching has been around for many decades. Shulman (1986, 1987) pointed out that both Pedagogical Knowledge (PK) (typically gained through teacher education) and Content Knowledge (CK) (typically acquired through disciplinary training) are necessary for educators to teach in a discipline. Shulman coined the concept of Pedagogical and Content Knowledge

(PCK) to describe the professional knowledge that allows teachers to successfully transpose subject matter into student learning. In the early 2000s, many researchers considered bringing the domain of technology into this knowledge base (Angeli & Valanides, 2005; Koehler & Mishra, 2005; Niess, 2005; Pierson, 2001). Eventually three key publications helped introduce the idea of TPACK (Technological Pedagogical And Content Knowledge). Mishra and Koehler's (2006) article in *Teachers College Record*, the American Association of Colleges of Teacher Education Committee on Innovation and Technology's *Handbook of TPCK for Educators* (2008), and an editorial renaming TPCK as TPACK published in the *Journal of Digital Learning in Teacher Education* by Thompson and Mishra (2007-2008) raised awareness of the technology-enhanced professional knowledge that educators need to be able to design and implement pedagogically sound instruction that includes technology. Overall, our current understanding of TPACK is the result of 'a multigenerational process, involving the development of deeper understandings of the complex web of relationships between content, pedagogy, and technology and the contexts in which they function' (Koehler et al., 2007, p. 740).

5.1.1. TPACK in theory: Conceptualisations and interpretations

The premise of TPACK is that educators require an integrated knowledge base consisting of three domains – Content Knowledge (CK), Pedagogical Knowledge (PK) and Technological Knowledge (TK) – to design and deliver effective technology-enhanced teaching of a discipline-based subject. Beyond recognising the three domains of knowledge (PK, CK and TK), TPACK highlights the interactions among these domains, which result in four integrated subsets of professional knowledge that educators require for successful technology-enhanced disciplinary teaching (Koehler & Mishra, 2006, 2009, 2014):

- Technological Content Knowledge (TCK) refers to the common dependence of CK on technologies for representational and functional capabilities;
- Pedagogical Content Knowledge (PCK) refers to the knowledge of how to best teach disciplinary content to students through considering their interests and abilities;
- Technological Pedagogical Knowledge (TPK) refers to an awareness that technology can enable or restrain certain teaching practices;
- Technological Pedagogical and Content Knowledge (TPACK) refers to the ideal blend of educator knowledge that integrates all three basic knowledge forms to effectively address the 'complex, multifaceted and situated nature' of contemporary teaching (Koehler, 2012, tpack.org).

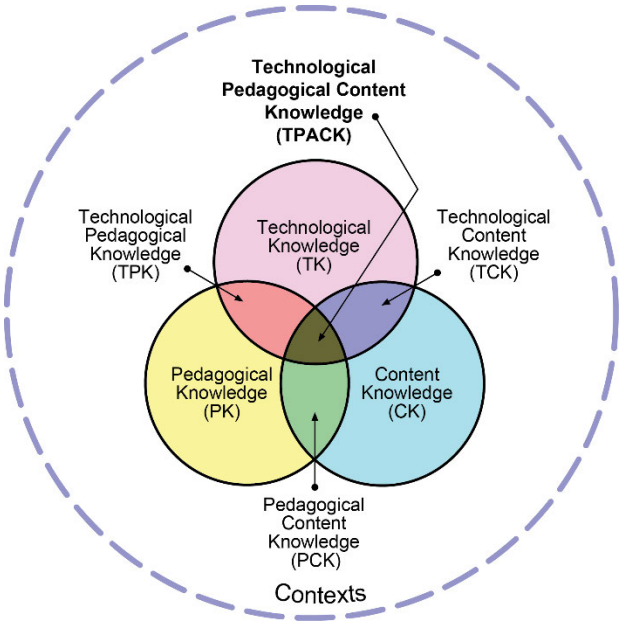

Figure 5.1. The TPACK model, © 2012 by tpack.org

Explicitly addressing elements of teaching that educators intuitively knew to be effective (Di Blas et al., 2014), TPACK quickly gained popularity after its introduction. TPACK is deemed to

be a straightforward, user-friendly way to articulate the multidimensional knowledge required for effective integration of technology and disciplinary teaching that is required across contemporary educational settings (Herring, 2016; Mishra, 2019; Yeh et al., 2021). However, TPACK's straightforwardness coupled with its strong influence on research and practice in teacher education and professional development gave rise to many different interpretations and subsequent applications (Harris & Wildman, 2019; Voogt et al., 2013). For example, some viewed TPACK as an add-on to PCK (Cox & Graham, 2009), some as a stand-alone knowledge domain (Angeli & Valanides, 2009), some as a framework to explore specific technologies (Doering & Veletsianos, 2007; Lee & Tsai, 2010), and some as a foundation for their own models (Jimoyiannis, 2010; Koh, 2019; Yeh et al., 2014). Among these variations, TPACK has also been framed as a useful component of teacher education, professional development, and pedagogical practices across teaching levels, countries, disciplines and types of technology (De Rossi & Trevisan, 2018; Harris & Hofer, 2011; Koehler et al., 2007; Nguyen & Bower, 2018; Tseng et al., 2019; Yeh et al., 2014).

5.1.2. TPACK in practice: Pathways and blind spots

One of the most common ways to implement the TPACK model is to follow the recommended pathways (signified by arrows in Figure 5.1), in which educators approach TPACK by starting with their strongest knowledge domain(s). In the context of university teaching, for example, most lecturers would likely start from CK (i.e., their disciplinary expertise), then focus on integrating it with either PK or TK to create a knowledge base (PCK or TCK) to thereafter learn the third domain of knowledge in order to reach the centre of the TPACK Venn diagram. These pathways aim to scaffold educators' design of learning materials through a more achievable process, at least compared to the daunting prospect of

integrating all three knowledge domains at once (Koehler et al., 2014).

However, the model's three entry points contain a structural weakness: if one approaches TPACK via PCK, the role of technology is obscured (most common among university lecturers - Benson & Ward, 2013; Stein et al., 2020; Stover & Veres, 2013). If one approaches TPACK via TPK, the importance of disciplinary expertise risks being side-lined; and if one approaches TPACK via TCK, pedagogical considerations are distanced (Koehler et al., 2014). Since these blind spots have been found to affect teachers in various teaching contexts (Koh, 2019; Saubern et al., 2020), researchers agree that the process of learning how to use TPACK itself needs to be broken down and scaffolded into more clearly defined frameworks (Pareto & Willermark, 2019). For example, Koh (2019) suggests providing teachers with:

(1) TPACK design heuristics (guiding questions at each step of lesson planning to remind teachers of TK);

(2) TPACK design rubrics (a rubric to evaluate the validity of lesson plans towards TPACK goals);

(3) TPACK activity types (task of labelling TPACK elements in sample activities before planning a lesson).

In addition to these tools, Koh (2020) recommends three types of individual mentoring of academic development to help teachers implement TPACK:

(1) technology modelling (targeting teachers who are strong in CK but weak in TK);

(2) pedagogical realignment (targeting teachers who are good CK and some TK); and

(3) deepening practice (targeting teachers with more advanced TPACK who wish to improve their practice further).

Jang and Chang (2016) observed that lecturers' self-evaluations regarding their competencies in TPACK knowledge domains tend to differ from evaluations found in their students' perceptions, which necessitates evaluations from other sources. Reyes et al. (2017) also warned about institutions' one-size-fits-all approaches and top-down implementation of educational technologies, which neglect the complexities of teaching and learning issues and thus constrains individual teaching practices of lecturers.

5.1.3. Collaborative discourse in TPACK development

Among the various TPACK professional development approaches, Learning By Design (LBD) has been identified as a promising method to address the weaknesses discussed above (Koehler & Mishra, 2008; Voogt et al., 2016). LBD features an 'iterative technology-mapping process' of collaboration in which educators are engaged in teams to co-design a pedagogical approach most aligned to their context regarding the main concepts in their topics, available tools, learner requirements, and pedagogical considerations (Angeli & Valanides, 2009; Yeh et al., 2021). LBD adopts the understanding of teaching as a 'design science', in which educators undergo their pedagogical development based on both theoretical investigations and empirical evidence from their own practice (Laurillard, 2013). It is also founded on the situated perspective that teachers learn best through co-designing with others who share the same goal (Borko, 2004; Putnam & Borko, 2000; Voogt et al., 2015).

Following the LBD approach, a collaborative design that includes active and 'iterative cycles of design, redesign and reflective practices' aims to transform educators from mere recipients of technologies to active and critical designers of technology-enhanced teaching knowledge (Hong et al., 2019; Voogt et al., 2015). Having been trialled and assessed by

educators in different learning settings, it has been found to effectively encourage innovative pedagogical developments (Timperley et al., 2007), facilitating mutual technological learning between early-career and experienced educators (Yeh et al., 2021), and capable of carrying a whole community of educators (as opposed to just individuals) forward in their academic development (Macdonal, 2008).

Despite these merits, forming teams among educators does not guarantee a meaningful or productive collaboration process towards LBD or advance the team members' informed development of TPACK (Pieters & Voogt, 2016; Vangrieken et al., 2015). Critical and complex collaborative discourse related to developing TPACK has been largely neglected by empirical studies on the LBD approach (Yeh et al., 2021). It is therefore advisable that LBD participants are thoroughly briefed prior to engaging in the collaborative design process, setting a common goal for the team, facilitating deep discussion and analysis, and enabling each member to reflect and share during collaboration (Yeh et al., 2021).

5.1.4. Role of TPACK in this research

In this research, the use of FF/TV in university teaching is treated as the main example of technological integration in pedagogy. FF/TV-enhanced teaching carries with it a variety of auxiliary technologies necessary for FF/TV production, FF/TV delivery or distribution, and FF/TV integration. FF/TV production technologies are relevant to the teaching of film analysis and also of film or media production skills in the classroom where applicable. FF/TV delivery or distribution technologies (e.g., DVD, download, streaming and screening) deal with the sourcing of suitable FF/TV content in line with copyright and trigger warning regulations. FF/TV integration technologies such as presentational software or interactive

student response software both within and outside online learning management systems (LMS) deal directly with the embedding of FF/TV content into instruction, learning activities and assessments for optimal learning outcomes. Following the rationale of TPACK, educators who integrate FF/TV into their teaching require adequate knowledge and skills regarding the use of these various types of technology in relation to their disciplinary expertise and teaching capabilities. Thus, Learning By Design (LBD) provides a useful guide towards exploring academic development resources that address the pedagogical use of FF/TV in disciplinary teaching.

5.2. Dual model for analysing and implementing teaching evaluations (TE)

5.2.1. Current state of TE in higher education

Following the current push in higher education to measure and enhance teaching quality for ranking metrics and other quality assurance practices (Devlin et al., 2011; Gunn & Fisk, 2013; Henard & Roseveare, 2012; Smith, 2008), more and more proposals have been made to pursue teaching excellence at universities (Broughan et al., 2018; Harrison et al., 2022). Given the complex nature of teaching and learning (Devlin et al., 2011; Greatbatch & Holland, 2016; Henard & Roseveare, 2012; Smithson, 2015), researchers rarely agree on what defines teaching excellence, to what extent the constituent factors account for high-quality teaching, nor how to adequately substantiate relevant data that claim to demonstrate teaching quality (Harrison et al., 2022). Despite the growing importance of systematic evaluation of teaching effectiveness and excellence, current tools and practices around TE continue to be critiqued as incomplete (Harrison et al., 2022; Smith, 2008).

Although course evaluations are available in both qualitative and quantitative forms, quantitative measures such as the standardised student evaluation of teaching (SET)

questionnaires are heavily favoured by institutions for their convenient administration and analysis (Erikson et al., 2016; Kember et al., 2002; Rienties, 2014; Schuck et al., 2008; Steyn et al., 2019; Theall & Franklin, 2001; Trigwell et al., 2012). Despite being perceived as an adequate means of TE by some scholars (Benton & Cashin, 2012), many studies challenge the external validity and reliability of results of these questionnaires (Chen & Hoshower, 2003; Spencer & Schmelkin, 2002; Spooren et al., 2013). Among the main criticisms, overwhelming evidence from the literature suggested that data collected from SET questionnaires are mainly used for promotion or tenure decision-making, benchmarking and summative purposes, rather than to inform teaching improvement (e.g., Chalmers & Hunt, 2016; Neumann, 2001; Smith, 2008; Smithson et al., 2015). Many researchers found no evidence of any institution-wide procedures designed for monitoring systematic implementation of instructional modifications based on the collected SET data (Huxham et al., 2008; Kember et al., 2002).

Such lack of practical consideration for teaching improvement as the key purpose of SET data explains why, despite the significant number of quantitative questions, their contribution has been considered too limited in meaningfully improving teaching quality (Blair & Valdez Noel, 2014; Shah & Nair, 2009; Slade & McConville, 2006), especially regarding innovative or technology-enhanced teaching practices (Smith, 2008). Studies also suggest that quantitative questionnaires carry an outdated presumption of a passive/submissive student role in the teaching and learning processes (Freeman & Dobbins, 2013), thus often fail to capture the nuances and complexities of contemporary teaching practices and learning diversity (Smithson, 2015). Attempts at improving the validity of quantitative SET questionnaires have been criticised for focusing too much on

methodological issues and neglecting the validity of interpretations of the questionnaire results (Royal, 2017).

The validity of using SET questionnaires as the sole or primary tool for TE is also questionable given their typically low response rates (Dommeyer et al., 2002), especially when transferred online (Avery et al., 2006), delivery of inconsistent responses. This is considered to be due to students viewing the surveys as an act of compliance rather than meaningful contribution to improving teaching quality (Ahmadi et al., 2001; Gaillard et al., 2011); students lacking knowledge in ratings and psychometrics (Davison & Price, 2009; Shevlin et al., 2010); and students lacking understanding about the importance of their responses or how those responses will be employed (Kember & Leung, 2011; Young et al., 2019). The majority of students therefore are not in the best position to provide consistently helpful and reliable feedback (Chen & Hoshower, 2003). This in turn further undermines the validity and reliability of SET questionnaire results, justifying some teachers' reluctance to take the feedback seriously (Darwin, 2017; Davison & Price, 2009; Stein et al., 2013).

In response to this problematic state of affairs, broader and more diverse data collection has been introduced. Recent studies have been pushing towards a more holistic and inclusive approach to TE that integrates a diverse range of sources of evidence to assess and measure teaching effectiveness (Alderman et al., 2014; Smith, 2008). Notable examples include qualitative measures that empower students to make more insightful contributions (Grebennikov & Shah, 2013; Scott et al., 2008; Steyn et al., 2018; Stupans et al., 2016); student group feedback that enables more collaborative and engaging discussions about teaching quality (Brandl et al., 2017; Chad, 2012; Nestel et al. 2012; Finelli et al., 2010;

Varga-Atkins et al., 2017; Veeck et al., 2016); and summative and formative peer evaluation (Bell & Cooper, 2013; Crisp, 2018; Smith, 2008). These qualitative approaches to collecting TE, however, require significantly more effort in terms of design, administration, and analysis (Brockx et al., 2012; Richardson, 2005), and there is limited research on optimising their benefits and efficiency (Grebennikov & Shah, 2013; Steyn et al., 2018; Wongsurawat, 2011). This gap has been partially addressed by the multiple attempts by researchers at proposing scalable frameworks that can: (1) connect planning, teaching, evaluation collection, evaluation analysis, and change-implementation processes; and (2) bring together the multiple feedback sources required for a comprehensive and holistic evaluation of teaching quality.

As discussed in Chapter 2, multimodal pedagogies such as those related to feature films and television series (FF/TV) have been increasingly recognised as playing an important role in boosting student engagement, student learning outcomes and enhancing teaching quality (Bonsignori, 2018; Lim & Tan, 2018). However, lecturers who practice FF/TV-enhanced teaching also reported challenges in measuring and evaluating its effectiveness; their complex and multimodal instruction is inadequately captured by the limited scope, restrictive options and teacher-centric design of current evaluation mechanisms (Membrives et al., 2016; Smith, 2008; Steyn et al., 2019).

Considering both the current findings on TE in general and those specifically related to teaching with FF/TV, this research filtered through a range of frameworks such as learner-focused evaluation cycles (Cathcart et al., 2014; Ryan, 2015; Steyn et al., 2019) to identify a suitable framework that can address the previously discussed limitations and cater to the specific needs of multimodal pedagogies. The optimal framework for this

research also requires a concrete yet generalisable mechanism for collecting-analysing-implementing evaluations while encompassing a broad scope of evaluation sources and providing specific examples to guide the analysis of participants' varied experience with FF/TV-enhanced pedagogies in various disciplines. Though occupying a humble place in the literature, the pairing of Four Quadrant (4Q) and Active Learning Cycle (ALC) models, emerging from a five-phase evaluation system designed and implemented at an Australian university by Smith (2008), has the potential to meet the research requirement.

5.2.2. Dual model for teaching evaluation (TE) collection and implementation

This research identified a dual model proposed and demonstrated by Smith (2008) that provides a framework for collecting and implementing TE from various sources. This model includes the Four Quadrant (4Q) model for evaluation quadrangulation and the Active Learning Cycle for applying analysed evaluations to other phases of teaching. The dual model is used to guide the analysis of current TE regarding FF/TV integration.

5.2.2.1. Four Quadrant model of evaluation quadrangulation

Smith's (2008) motivation was the limitations of the current TE practices as discussed above. His work recognised that any well-designed, applicable or accessible guidance in the collection and interpretation of evaluation results, if provided informally and separately from lecturers' practice, still 'relies heavily on independent engagement' and internal motivation of individual lecturers to make any contribution to teaching improvement (Smith, 2008, p. 519). Inspired by positive findings from research on student learning communities (Cox & Richlin, 2004; MacDonald, 2001; Martin et al., 2013; Tinto, 2000; Shulman & Shulman, 2004), Smith (2008) suggested shifting the focus to building learning

communities for lecturers to increase external motivation and validity, as well as formalising parts of the process to optimise the benefits of TE.

With this in mind, Smith (2008) described a five-component system of evaluation collection and implementation that was applied at an unnamed Australian university. The first component involves developing questionnaire instruments to collect student feedback and generate data, which is already an established practice at universities. The second component highlights the need for an official interpretive guide for the questionnaire data, such as Ratings Interpretation Guides (Neumann, 2000) or Criterion Referenced Interpretation (Smith et al., 2001). The third component uses the outcomes from the second to build annual reports, and – the fourth component – disseminate invitations for lecturers to participate in a local teaching staff development programme that is similar to the Building Effectiveness in Teaching through Targeted Evaluation and Review (BETTER) programme in Smith's (2008) case study. In this BETTER programme, lecturers had the option to choose among: (1) conducting one-on-one consultations with academic staff from the institution's learning and teaching (L&T) service (the Teaching Enhancement Service in Smith's (2008) case study); (2) forming a learning community based on the 4Q model; (3) attending available workshops on various topics from the L&T service; or (4) doing a combination of these activities. In any scenario, the purpose is to foster an ongoing and interactive relationship between lecturers and academic developers – the fifth component – so that lecturers benefit from personalised and integrated assistance in utilising their evaluation results for teaching improvements, and to promote holistic, reflective and comprehensive evaluation practices. The ongoing engagement facilitated by this inter-department relationship can also help inform promotion, tenure and other lecturer-focused processes in

a more accurate manner (Smith, 2008, p. 521).

Within this five-component system, Smith (2008) integrated the 4Q model and the Active Learning Cycle (Gold & Pedler, 2022), both of which are grounded in empirical research, the former related to TE and the latter to action learning (Revans, 1980, 1983). The rationale behind the 4Q model is similar to the idea of research triangulation in which multiple sources of evidence are required to adequately defend the research findings being put forward (Kember, 2003). The 4Q model posits that educators should 'quadrangulate' their findings, meaning they should draw data about the overall quality of their teaching practice from all four broad quadrants (self-reflection, student learning, student experience, peer review) of evaluation sources.

Evaluation quadrangulation therefore aims to provide a more objective and complete picture of teaching quality, such as information about what works and what needs improvement, so that educators can make more informed and specific decisions towards improving their teaching practices (Smith, 2008). The 4Q model of evaluation quadrangulation therefore emphasises the need for integrating multiple sources of evidence to validate any demonstrations of teaching effectiveness as well as plans towards teaching improvement. Upon updating more recent studies to support each source of information listed under the four quadrants (Figure 5.2), this research uses the 4Q model as a systematic guide for identifying, categorising and analysing participants' experiences with evaluating their teaching effectiveness with FF/TV.

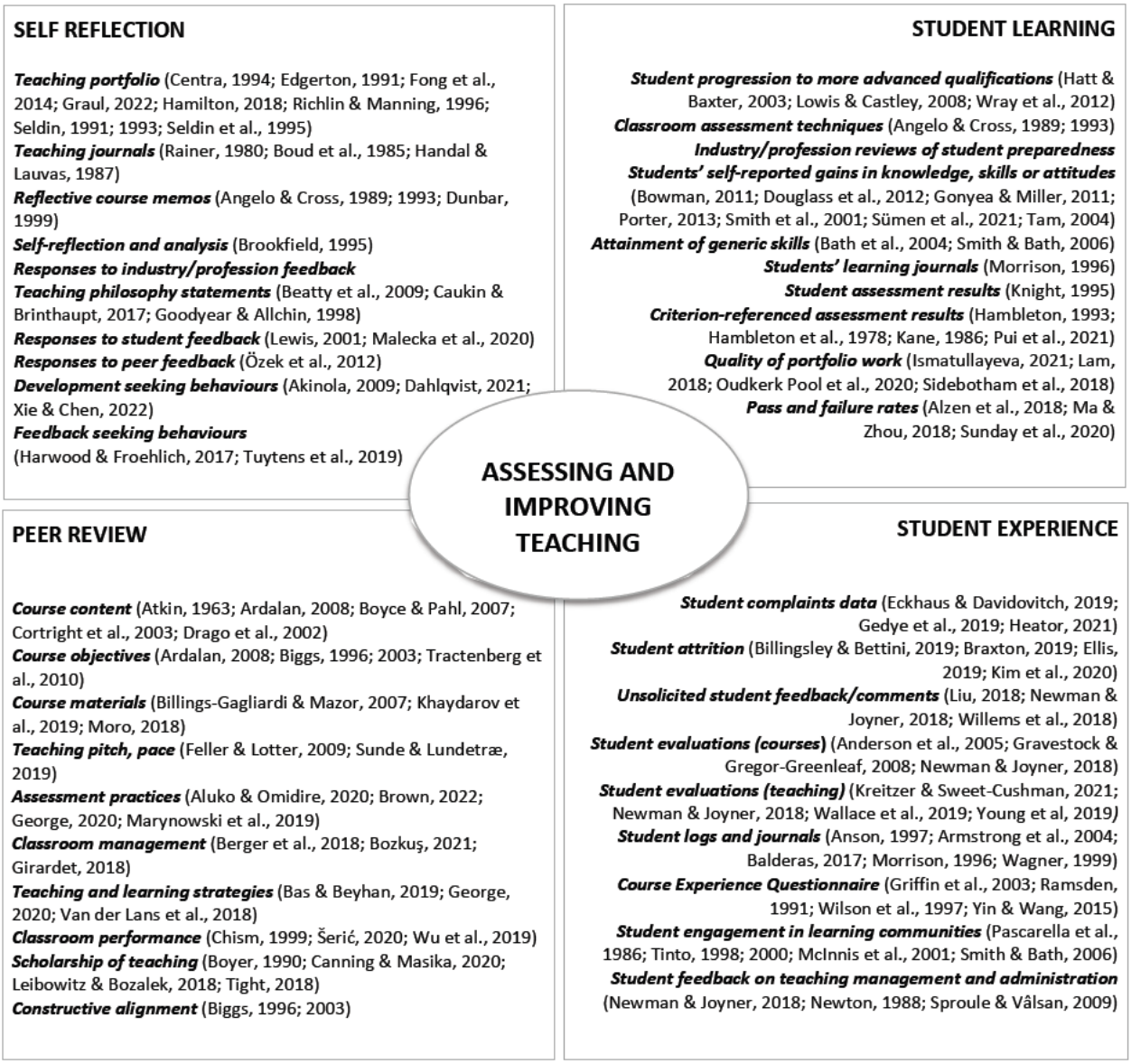

Figure 5.2. The Four Quadrant (4Q) model of teaching evaluation (Smith, 2008)

5.2.2.2. Active Learning Cycle (ALC)

Once the data about teaching effectiveness are collected from various sources based on the 4Q model, the Active Learning Cycle (ALC) provides a framework to guide the different processes in which the data are analysed and implemented to modify teaching practices. The ALC brings together the 4Q model and Action Learning research (Smith (2008) modified 'action' to 'active' for his ALC model) that is based on the seminal works by Revans (1980, 1983). The body of Action Learning research essentially argues that there is no learning

without action, that the perception or understanding of a problem or issue lies within an action-based process of ongoing learning (Aspinwal et al., 2019; Brook et al., 2020; Gold & Pedler, 2022; Pedler, 2017; Pedler et al., 2005). This reiterates the need for multiple 'iterations of action and evaluation and personal development and organisational development 'to find the optimal approach to a teaching practice (Smith, 2008, p. 528). Applications of the action learning principle are widespread across topics and contexts in and beyond higher education (Brook et al., 2020; Gold & Pedler, 2022; Kember, 2000; Lawless, 2008; Milano et al, 2015; Pedler et al., 2005). These applications are usually conducted according to the authors' interpretation of action learning principles, which typically take form as a four-step cycle (Plan, Act, Reflect, Learn), with variations of terms used depending on the context. In general, the steps of any action learning cycle are often accompanied by guiding questions such as 'What do we do now? – What are the steps' (Plan); 'What went well or not?' (Reflect); or 'Why did we succeed/fail?' (Learn) (Pedanik, 2019).

For example, van der Merwe and team (2021) reported on their successful application of the action learning cycle (Act/Reflect, Engage/Observe, Analyse/Plan) to create a collaborative platform for improving rural primary healthcare in South Africa. Paton (2001) applied the systemic version of the action learning cycle based on Kolb et al. (1974) that consists of four steps (Comprehend, Consider, Compare, Construct) within two key phases (Alert, Act) to demonstrate the complexities of learning in projects that involve deep analysis processes. Zimmer (2008) applied an interpersonal version of the action learning cycle to explore how educators can facilitate deep thinking and attentive comprehension in language learners. Gourlay (2019) supported using action learning to help develop

preservice teachers' reflectivity. Kolb and Kolb (2018) reviewed a range of applications of the experiential version of action learning (four step cycle: thinking, acting, experiencing, reflecting) and summarised eight key principles that highlight the non-linear and complex nature of experiential learning. Sanyal and Gray (2019) explored the role of a coach in facilitating action learning within learning groups. Sanyal (2019) noted that mindfulness practices might be helpful in enabling action learning because they create 'a calm, focused space for individual and collective reflections', enhance engagement and motivate participants to 'take a more pragmatic approach to addressing the work issues raised within the action learning sets' (p. 159).

As noted in these examples, there are some variations in the terms used; for example, Smith (2008) used 'Observe' instead of 'Learn' in the ALC. In the usual place for guiding questions, Smith (2008) integrated four abstract action learning steps within four main teaching processes (i.e., (Re)Design, Teaching, Evaluation, Analysis) to form the ALC, in which the 4Q model informs the 'Evaluation' process (Figure 5.3). This research appreciates the ALC's conceptualisation of teaching evaluation as an action-based learning process, as well as the pragmatic concern about low motivation for self-motivated learning. Moreover, the model suits the self-taught and action-based nature of university teaching with FF/TV in which lecturers develop their pedagogies mostly while 'doing it'. This situation is well-reflected in the scarce entry-point resources (i.e., lack of institutional or formal guidance towards pedagogy development – e.g., Donnelly, 2014) and end-point standardised SET practice does not offer much in terms of data collection, analysis, interpretation and implementation as discussed above.

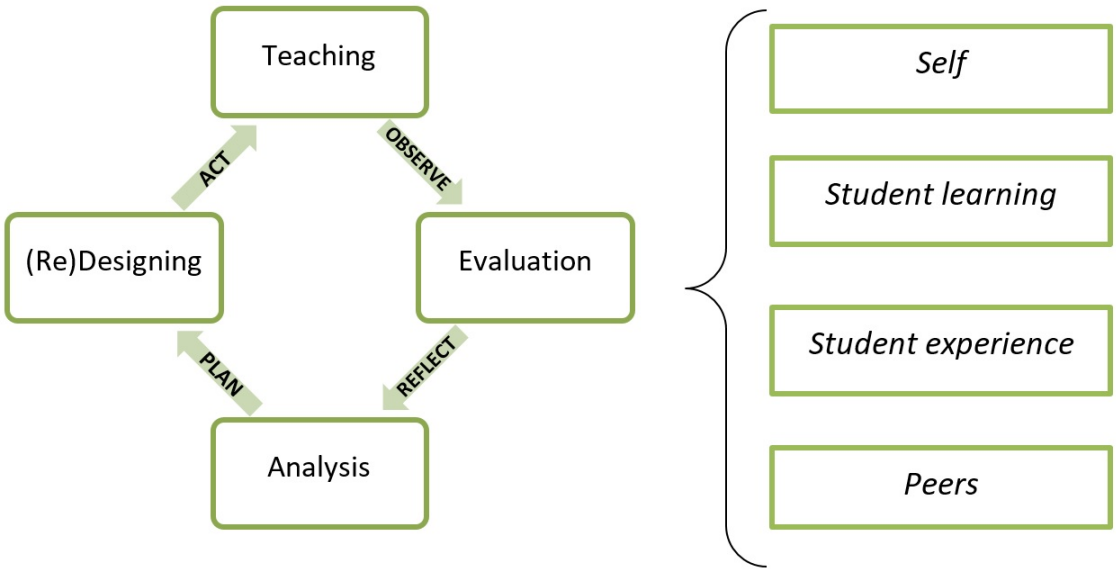

Figure 5.3. The Active Learning Cycle (ALC) of teaching evaluation (Smith, 2008)

5.2.3. Role of 4Q and ALC in this research

In this research, the 4Q model functions as a comprehensive guide towards identifying and categorising the reported sources of TE available to lecturer-participants across disciplines regarding the effectiveness of their FF/TV use. After integrating the analysis of each individual source, the research then uses the ALC to provide a broader context against which practical recommendations regarding how these sources can be analysed, interpreted and implemented when evaluating the effectiveness of FF/TV-enhanced teaching.

5.3. Conclusion

This chapter outlines a range of theories and models that address the learning (or academic development) crucial to improvements for integrating FF/TV into teaching. The model of TPACK, its pathways and blind spots, will assist the analysis of lecturers' levels of awareness and competence when applying different technologies when integrating FF/TV in their teaching (Chapter 9). The 4Q-ALC model will guide the analysis of lecturers' practices in collecting and implementing TE towards improving their FF/TV use (Chapter 10).

CHAPTER 6

RESEARCH DESIGN AND METHODOLOGICAL APPROACH

This chapter details the research parameters for the mixed-methods approach used in this thesis. Three stages of data collection – website analysis, survey, and interviews – were conducted with different groups of participants in the pursuit of the research questions. Data analysis was modelled after the six-phase thematic analysis method promoted by Braun and Clarke (2006) with the aim of producing results that address various aspects of university pedagogies connected to feature films and TV series (FF/TV). Research limitations and ethical considerations are discussed in acknowledgement of issues and areas that will benefit from further investigation in future.

6.1. Research paradigm

According to Guba and Lincoln (1994), a research paradigm includes a fundamental system of beliefs or worldviews that the researcher adopts to reflect their philosophical position in the world and its components. This group of beliefs then form key principles that methodologically, ontologically and epistemologically underlie the reasoning and decision-making of the researcher throughout their research.

The phenomena of 'film', 'technology', 'multimedia', 'learning', 'pedagogy' and their associated concepts only exist in our perceived reality because our biological, cognitive and affective processes endorse them, and our social interactions among educators and students and among filmmakers and their audiences influence the nuances in our understanding of those phenomena. The subject matter of this research – the pedagogical use of feature films and television series (FF/TV) – requires an integrated understanding of both the internal information processing architecture of the human brain, and the social

meaning-making processes that result from conversations, exchanges of ideas, and transmissions of knowledge among human beings. Therefore, the research primarily subscribes to the subjective view of knowledge and therefore adopts a broadly constructive stand on epistemology.

6.1.1. Social constructivism and constructionism

Despite often being used interchangeably by some authors (e.g., Berger & Luckmann's 1989 book on constructivism includes 'construction' in the title), constructivism and constructionism are actually two separate branches of constructive theory – sharing the same foundation but with a different focus (Sommers-Flanagan & Sommers-Flanagan, 2018). They both posit that knowledge is socially constructed rather than self-existent. Constructivism focuses on the cognitive workings inside the brain of individuals that form their perception of social phenomena, whereas social constructionism places social interactions among different groups of people at the heart of meaning-making across knowledge domains (Guterman, 2006; Sommers-Flanagan & Sommers-Flanagan, 2018). Both constructivists and constructionists tend to follow a relativist ontology, in which multiple constructed realities do co-exist (Denzin & Lincoln, 2013; Guba & Lincoln, 1994; Scotland, 2012). These constructed realities are often characterised as pluralistic and plastic, for they operate in different symbolic and language systems and can be modified to adapt to different contexts and purposes depending on the people involved (Schwandt, 1994). Combining both constructivist and constructionist ontologies, the 'reality' is understood to depend on the individual's experience and their subsequent perception, the social environments in which individuals form their experience and perception, and the meaning-making activities among individuals and groups (Lincoln & Guba, 2000; Ponterotto, 2005;

Creswell, 2014). Accordingly, this research inquires into both the cognitive processes that underlie learning and teaching practices involving FF/TV, and the social relationships that take place both within and outside the classroom in relation to FF/TV content.

6.1.2. Influence of post-positivism and realism

In addition to a constructive epistemology, this research also acknowledges the influence of post-positivism and its realist ontology (Syed et al., 2009; Wynn & Williams, 2012) with regards to the complementary role of quantitative research methods used. Traditionally researchers perceived positivism and quantitative methods as irreconcilable with constructivism or constructionism and qualitative methods, due to their opposing assumptions about reality and knowledge (Lincoln & Guba, 2000; Smith & Heshusius, 1986). However, as Cupchik (2001) argued, the practical similarities, rather than arbitrary boundaries, between these two ontologies are more important and helpful to our collective pursuit of understanding social phenomena. For example, both quantitative and qualitative approaches can be used to break the data down to constituent components for examination to understand any phenomenon. Both approaches require data, which need to be collected from a sample of either individuals or subjects. This sample selection always comes from a set of parameters pre-determined by the researcher (whether they be social interviewers or laboratory experimenters). Importantly, researchers from both worldviews operate on preconceptions and biases that inevitably produce distortions in their findings (Bogna et al., 2020; Cupchik, 2001).

6.1.3. Reconciling developments towards mixed-methods designs

More modern developments within both schools of thought indicate a growing appreciation of the helpfulness of combining qualitative and quantitative methods. There has been a

progression from ‘naïve realism’ – claiming absolute certainty, objectivity and accuracy in its pursuit of ‘real’ reality or ‘true’ knowledge – to a more modest stand of ‘critical realism’ that accepts a higher degree of probability and subjectivity, as well as more attention paid to the social context surrounding the collected data (Cupchick, 2001; Bogna et al., 2020; Hoddy, 2019; Houghton, 2011; Marsh & Stoker, 2002).

> Physical phenomena can exist without human apprehension but they only become meaningful events, in the sense of influencing action, when noticed or observed by a group of people, however small. Social phenomena are contextualised events which are perceived intersubjectively and defined as such. Phenomena are therefore events that unfold and recur in the flow of time and are only meaningful when understood in context; they are processes and not essences. (Cupchick, 2001)

On the other hand, the challenge of finding coherence (i.e., the absolute match between a prediction and a finding) is undeniable within the interpretation of the constructivist/constructionist perspective (Madill et al., 2000). A relatively flexible frame of references between the researcher and the respondent (i.e., the researcher’s source of data) is therefore required to enhance coherence. This is reflected in the practice of semi-structured interviews with ‘structure’ via a set of open-ended questions introduced into the unstructured nature of qualitative data (Brown & Rutter, 1966; Hoffman, 1960).

In general, a complementary blend of qualitative and quantitative data collection has increasingly become a popular method of research inquiry, especially in the social sciences and education. This indicates a more nuanced understanding and appreciation of how the empirical and non-empirical methods contribute valuable insights to research topics (Creswell, 2015; Guetterman & Fetters, 2018; Hoddy, 2019; Ramírez-Montoya & Lugo-Ocando, 2020; Tashakkori & Creswell, 2007). Such appreciation is reflected in a series of textbooks on mixed-methods research design that explore different models utilising various degrees and sequencing of qualitative and quantitative components to cater to different

research goals across disciplines (Creswell, 2009, 2014; Creswell & Creswell, 2005, 2018). One of the common research designs derived from this rationale is using a mixed-methods survey (i.e., both numerically rated or scaled items and open-ended questions) followed by interviews to clarify responses, avoid errors, tailor the research better to the targeted audience and thus achieve the research aims more effectively (Dillman et al., 2014; Ponto, 2015; Singleton & Straits, 2009).

6.2. Research aims, questions and design

This thesis sets out to address the gap in the literature by carrying out a systematic investigation into what constitutes the best university teaching practice with FF/TV across disciplines, and what kind of resources lecturers need, technologically and pedagogically, to achieve the optimal efficacy of using FF/TV in teaching. In doing so, this research aims to both preserve the uniqueness of each academic discipline involved and flesh out the fundamental requirements that hold true in the teaching and learning of disciplinary knowledge and skills with regard to FF/TV use.

6.2.1. Research questions

To pursue the research aims, the thesis ultimately asks how university lecturers can uncover the full potential of FF/TV in their teaching. Three specific research questions were identified as parameters to finding the answer to this main question and guiding the subsequent processes of data collection and analysis:

(1) What do lecturers already know and do in this space, and in what ways have institutions and academic developers been enabling the teaching practices with FF/TV?

(2) What are the key considerations that lecturers need to know in order to effectively integrate pre-made mass-consumed multimodal media content and technologies such as FF/TV into their pedagogy?

(3) What training and teaching evaluation resources would be useful to help transform lecturers from mere users of FF/TV into creators of FF/TV-enhanced knowledge?

6.2.2. *Rationale behind mixed methods design*

Although qualitative and quantitative research methods tend to be practised in different disciplines and from different epistemological/ontological standpoints, the use of mixed methods has consistently increased in recent years by researchers who wish to better understand various dimensions of the phenomenon under investigation (e.g., Creswell, 2003; Benoit & Holbert, 2008; Dunning et al., 2007; Guetterman & Fetters, 2018; Haines, 2011; Hoddy, 2019; Ramírez-Montoya & Lugo-Ocando, 2020). In the case of this research project, the phenomenon is the pedagogical use or integration of FF/TV into teaching across disciplines at universities, whose various dimensions include the aspects of formal training, technology, the pedagogy (e.g., instruction, learning activities, assessments), and the teaching evaluation or student feedback.

As previously discussed, the qualitative element can provide meaningful contexts and insights to the quantitative data by providing a mutual frame of reference between the researcher and the respondents (Cupchick, 2001; Bogna et al., 2020; Hoddy, 2019), while the quantitative element can improve the coherence (Cupchick, 2001), objectivity (Gelo, 2008; Nagel, 1986) and generalisability (Viadero, 1999) of qualitative findings. When integrating them in a triangulated process of analysis, the researcher can strengthen the validity of conclusions and recommendations drawn from the research findings (Green et

al., 1989). In this case, research findings from each data collection round (i.e., document/website analysis, survey, interview) were used to both inform and make meaning out of each successive iteration, so that the researcher's understanding of each aspect became deeper and more nuanced over the course of data analysis.

6.3. Data collection methods

A mixed-methods design can enhance the researcher's capability to both objectively assess the magnitude of the phenomenon in question through quantitative instruments, as well as understand the underlying reasons and processes through the qualitative tools. Applying this rationale, the present research collected both qualitative and quantitative data via (1) document/website analysis, (2) an online survey, and (3) semi-structured interviews.

6.3.1. Document/Website analysis

6.3.1.1. Scope and purposes

Serving as a preliminary stage for the study, document/website analysis involved a thorough search on official publicly accessible websites of Group of Eight (Go8) Australian universities and affiliated links (where applicable) to third-space organisations who provided the relevant training as listed on those official websites. The search targeted information regarding past and current institutional training related to the pedagogical use of FF/TV. Such training could be in the form of academic development (AD) courses or training resources provided via workshops, seminars or online portals by universities for their lecturers.

The first purpose of investigating these courses and resources was to assess the level of formal recognition given to the pedagogical practice of repurposing FF/TV for university

teaching. The aim was to establish the availability of formal training or academic development targeting the practice, and if available, which aspects of the teaching practice were most often or least covered; whether the training was compulsory or optional, scaffolded and delivered over a period of time or a one-off workshop; or how consistently the training opportunity was offered in terms of frequency and regularity. The second purpose was to better understand the role that educational institutions played in supporting their lecturers' knowledge and understanding of pedagogy, as reflected in whether the training resources were facilitated institution-wide or by individual faculties; how likely lecturers across disciplines received relevant training prior to or during their academic development in relation to this pedagogy; and what factors (discipline, employment status) impacted lecturers' eligibility to receive training. All of these factors then helped fulfil the third purpose of determining the overall level of knowledge and skills that lecturers possessed regarding the practices of integrating FF/TV into their disciplinary teaching.

6.3.1.2. Parameters and protocol

A search matrix (Appendix 1) consisting of the key search parameters based on initial website searches was developed to organise the publicly available, relevant information from Go8 university websites. These parameters included (1) training course/workshop titles, (2) contact details of facilitators/coordinators, (3) duration, (4) targeted participants, (5) delivery mode, (6) optionality, (7) covered topics/training outcomes, and (8) fees. The purpose of these parameters was to provide a comprehensive context of the training offered, to determine whether the training covered FF/TV use in teaching or not; and to potentially help identify optimal combinations of factors that work best for different target groups in future development of AD resources related to FF/TV use.

The following terms were input into Google Search to locate specific webpages within each Go8 website. Along with the name of each institution, the following terms were appended: 'academic development', 'professional development', 'academic training', 'professional training', 'teacher training', 'media training', 'university induction' and their combinations with 'film', 'feature films', 'movies', 'television series', 'television shows', 'cinema', 'popular culture'. Collected data was transferred into the corresponding position in the search matrix to ensure all available information was sufficiently contextualised and organised. Upon completion, the content of the matrix was reviewed by the supervisors and further discussions filtered out irrelevant information to reduce the matrix to a more manageable size for close analysis.

6.3.1.3. Additional step: Email inquiries for confirmation and clarity

Before finalising the matrix for analysis, email inquiry templates approved by the University's human research ethics committee (Appendix 2) were used to consult the course facilitators/coordinators whose contact details were listed with each course, as well as Go8 Learning and Teaching (L&T) units (a body of staff who oversee academic and professional development for teaching staff), about the accuracy and currency of the collected data. This ensured no relevant training had been missed or overlooked in the initial website analysis. All the email addresses used for this purpose were publicly available for inquiries about the AD courses and related resources. Upon receiving responses, the main email content was transferred into the established matrix in a new column next to 'course content' to facilitate comparison later in the analysis.

Since many AD course facilitators/coordinators mentioned above could be professionals employed part-time by the universities (Whitchurch, 2015), it was anticipated that they might not be fully aware of the AD situation outside the particular delivery of their course, or might have already moved on to a different employer. Furthermore, although the method of guided web search could yield a substantial amount of relevant data to construct a background for the study, it was expected not all Go8 universities would publicise information about formal training. A known limitation to the described mechanism of web search and email correspondence to those facilitators/coordinators was that exclusive training opportunities (i.e., internally accessible) could not be included in the analysis. To address that limitation, the same email templates were used to contact staff members of the L&T units and determine if there were additional, externally unpublicised training opportunities provided.

6.3.2 Online survey

6.3.2.1. Inclusion criteria, participant recruitment and population

The targeted participants for the survey were university lecturers, who were currently in active teaching duties at one or more Australian universities and had some experience with using FF/TV in their teaching across disciplines. The scope of such 'experience' could include directly choosing to integrate FF/TV into their pedagogy in their own courses; co-teaching with or tutoring for other lecturers; inheriting an archive of FF/TV for teaching from predecessors; or a combination of these. There were no restrictions regarding academic discipline, general lecturing experience, employment status, type of university (i.e., research-intensive, teaching-focused, publicly funded, religious), age, nationality/cultural background, gender or religious belief.

Using convenience and snowball sampling, participants were recruited via: (1) paper flyers distributed at university campuses in South Australia (i.e., University of Adelaide, University of South Australia, Flinders University, Torrens University); (2) newsletter announcements (Appendix 3) on higher education internal and external networks such as Higher Education Research and Development Society of Australasia (HERDSA), Australian Association for Research in Education (AARE) and AdvanceHE (previously Higher Education Academy); and (3) email invitations. The email invitations were selected based on recommendations made by supervisors and colleagues who were aware of the project's content, as well as researchers' profiles available on Australian universities' websites about their teaching staff. Because the survey was elaborate and detailed with multiple open-ended qualitative questions and without financial rewards, it was expected to yield between 50 and 100 complete responses.

6.3.2.2. Survey design: Format, confidentiality, coverage, and pilot study

With ethics clearance, an online qualitative survey targeting lecturers across multiple disciplines at Australian universities was created, posted, and distributed through the online survey platform SurveyMonkey (Appendix 4). Being the first cross-disciplinary primary research about the practice of integrating FF/TV into university teaching, the survey did not follow any existing survey model. Rather, it synthesised and consolidated multiple sources of information from the literature review and the website analysis.

The survey opened with an approved Survey Preamble (Appendix 5) to act as both a Participant Information Sheet and a consent form. A complete response submitted to the system was regarded as written consent for the data to be used according to the terms and conditions detailed in the preamble. Incomplete responses recorded by SurveyMonkey were

considered withdrawal from the study and therefore were not included in data analysis. The full survey consisted of 36 questions including multiple-choice, open-ended, and integrated questions (i.e., multiple choice with an 'Other' option to write a separate answer) (Appendix 4). Respondents did not necessarily have to respond to all 36 questions to complete because the survey followed a skip logic that allowed respondents to follow a customised path depending on which questions they answered.

The first part – Academic Background – sought to understand the participant's background factors that may influence their FF/TV use such as their academic discipline, employment status, general teaching experience (in years), teaching experience with FF/TV (in course occurrences), and employment status (permanent, contracted, part-time). The survey was entirely anonymous, meaning no personally identifiable information (e.g., name, date of birth, phone number, email address, institution name, specific name of school/faculty/department, or nationality) were asked of the respondents. Only three academia-related pieces of demographic information were included – academic discipline, teaching experience (both general and with FF/TV), and employment status – as these might have implications on the actual teaching approaches to FF/TV and thus help contextualise their survey response. Utmost care was taken to ensure that no personally identifying details were revealed.

The second part – Academic Development/Training – sought to understand the level of knowledge and skills related to film studies, pedagogy and technologies deemed relevant to classroom FF/TV integration, as well as the availability of academic development opportunities at their institutions (for triangulation with website analysis results and literature review). Questions in Part 2 target the research questions 1 and 3 in relation to

lecturers' existing knowledge and skills, available institutional support and potentially necessary resources.

The third part – University Teaching with FF/TV – sought to understand the specifics and rationale behind various processes and aspects of a participant's teaching method with FF/TV, from instructional design, learning activities, assessment, teaching evaluation to challenges encountered and suggested solutions. Questions in Part 3 were constructed partly based on the most common aspects of FF/TV pedagogy raised by previous studies in the literature review, and partly on my own teaching experience with FF/TV. Part 3 of the survey aims to help answer research questions 2 and 3 in relation to a potentially helpful coverage of resources and training in the future.

Although the survey was designed to encompass as many aspects of FF/TV pedagogies as possible, its limited space and text-based format could not be expected to fully capture participants' diverse experience with FF/TV in their teaching. Therefore, the last question of the survey was linked to a separate Google form for collecting contact details of respondents who were willing to partake in the next stage of data collection – semi-structured interview – to clarify and elaborate their responses.

Prior to official participant recruitment, a pilot study was conducted with a mix of 15 PhD candidates and lecturers from the Faculty of Arts, Business, Law and Economics (University of Adelaide). All constructive feedback yielded from the pilot study regarding the logic, clarity and comprehensiveness of the survey was carefully considered and addressed. Upon modifications, the final version was submitted to the ethics committee and approved.

6.3.3. Semi-structured interviews

6.3.3.1. Inclusion criteria, participant recruitment and population

Completing the survey was the prerequisite for participation in the one-on-one semi-structured interviews. This arrangement was to ensure that participants were familiar with the scope and focus of the study, motivated to reflect on their experience accordingly and prepared to explain or elaborate on their contribution to the relevant topics. It was expected that this number of interviewees would provide a suitably broad data set to cover the important and relevant issues.

6.3.3.2. Interview design: Modes, coverage, duration and procedure

Interested participants were provided with a formal email invitation containing the Consent Form (Appendix 6) and Participant Information Sheet (Appendix 7) to view and sign if agreeing to proceed.

Participants could choose among three options to participate in the interview: (1) face-to-face at either their offices or an interview room provided by the School of Education (University of Adelaide); (2) online via Zoom; or (3) phone call. Participants were encouraged to select a date within close proximity to their survey completion (preferably within a fortnight).

A topic/theme checklist (Appendix 8) modelled after the survey was used to guide the semi-structured interviews and ensure all important issues were sufficiently covered during each interview. This method was also intended to grasp key survey responses from the interviewees and encourage them to elaborate on the reasons or processes behind their answers, while protecting the anonymity of their survey participation as much as possible. Since every conversation irrespective of the topic tends to flow differently, the order of questions was loosely structured to allow interviewees to subjectively highlight topics,

within relevance, that they wanted to share or emphasise most. The participants were informed to expect at least 30 minutes for the one-on-one in-depth interview. An upper limit was set at 90 minutes for time and data-saturation reasons.

All interviews were audio-recorded with written consent from participants, using two different recording devices to ensure potential technical issues did not lead to loss of data. The interview checklist included spaces for note taking during, and immediately after, each interview to make sure all information and ideas were duly recorded. Although interview participation was not anonymous, participants' names do not appear on any recorded materials, except for the Consent forms. For further de-identification, participant codes were used on interview checklists, transcriptions and throughout data analysis processes. These codes were formulated using the first letter of the participant's first name, the assigned number for their corresponding discipline, and the first letter of their last name (e.g., Z11Y). The codes were further simplified in the metadata as a letter and a number, e.g., L1 (Lecturer 1). The participant codes were written on the upper right corner of every page of the interview checklists and on the recording file names, alongside date and time, to maintain data integrity.

6.4. Analysis processes of data sets

6.4.1. Thematic analysis approach for qualitative data

Given the predominantly qualitative nature of the data corpus, the research used the standard qualitative analysis method – thematic analysis – with six recursive steps (Figure 6.1) as described and demonstrated by Braun and Clarke (2006). There were two major selections of data sets for thematic analysis: (1) data sets chosen according to the data collection methods (i.e., website analysis data set, survey data set, interview data set); and

(2) data sets chosen according to various themes that emerged from the collected data across the three data sets listed above (e.g., academic development related to the use of FF/TV in teaching; technological issues of pedagogies with FF/TV; challenges in student learning with FF/TV).

Figure 6.1. Six phases of thematic analysis (Braun & Clarke, 2006)

The first selection was applied to the earlier stages of data analysis to facilitate the processes of data familiarisation, code generation and early theme searching within each of the three data sets. In progressing to a more comprehensive understanding of what each data set contained, cross-data set examination was required to gather all relevant instances across the data corpus for each code and develop themes towards answering the research questions in the metadata.

Prior to starting thematic analysis, Braun and Clarke (2006) recommend considering a range of questions to define the parameters for the analysis processes. In this project, a theme is constituted by (1) significance or relevance to the research questions; and (2) prevalence or 'size 'within a data set and across the data corpus that showcases data trends or patterned responses. Given that university pedagogies involving the use of FF/TV had

been identified as an under-researched area with an unknown number of required constituent elements, this project aimed to 'provide a rich description of the entire data set, so that the reader gets a sense of predominant or important themes' (Braun & Clarke, 2006, p. 83). For the same reason, there was no pre-existing framework for seeking evidence through data collection. Therefore, an inductive (data-driven) approach to thematic analysis was utilised to code and identify themes based on the data collected, rather than questions asked. That is, key findings from the document/website analysis round of data collection and extensive literature review informed the survey design. The survey trends or findings then informed the main themes to be elaborated on during interviews. The survey and interview findings were then analysed concurrently to identify the major themes for further in-depth analysis.

Furthermore, considering teaching is both a practical and philosophical endeavour, themes within this research were identified at both a semantic (explicit) level – to describe, summarise, organise and theorise the significant data patterns for broader implementation; and at a latent (implicit) level – to investigate the underpinning assumptions and ideologies to understand what drives the teaching practice. Coming from a primarily constructivist/constructionist epistemology, however, thematic analysis in this study particularly focused on the latent themes to explore the various contexts (e.g., disciplinary preferences, institutional priorities, student learning levels) in relation to individual accounts (e.g., preliminary background in film literacy, technological competences, teaching experience) that affect the participants' nuanced perspective on teaching with FF/TV.

6.4.2. Website analysis data set

To fulfil the three main purposes of website analysis, the course content or 'covered topics'

column of the matrix was analysed to identify potentially relevant details of FF/TV use in teaching. These elements were then triangulated with the email communication from AD course coordinators/facilitators and L&T staff. After this triangulation process, whether or not the details in question were deemed relevant to the use of FF/TV in teaching was marked in the matrix. As a result of this initial analysis, a short paragraph was written to capture the overall availability of formal training or academic development regarding FF/TV in teaching across Go8 institutions and the specific topics that were covered in those courses.

Outcomes of the website analysis were used as a reference point to interpret the survey and interview data. For example, when analysing participants' responses to questions about their own teaching practices with FF/TV, it was important to clarify the specific means they used to obtain the necessary knowledge and skill, or how they assessed the effectiveness of their FF/TV teaching methods.

6.4.3. Survey data set

6.4.3.1. General trends analysis

The main purpose of this round of analysis was to identify basic trends and become familiar with the survey data set. Given the relatively small number of responses, the basic analysis features available on SurveyMonkey sufficed to generate graphs and charts to provide insight into the close-ended questions. Since all multiple choice (close-ended) questions in the survey included an 'Other' option for respondents to customise their answers, these answers were also included alongside the graphs and charts when all survey results were exported into PDF and Excel files for in-depth analysis. The aim was to identify the magnitude or percentage of each provided option within each close-ended question, and

also to capture all other emerging topics. During this early process of analysis, significant trends were noted in sentences, or paragraphs if needed, using the Comment and Highlight features on Adobe PDF to record as accurately as possible as many ideas and connections that occurred.

For the second round of trends analysis, the Excel file including all data pertaining to each question was presented in a separate sheet. Descriptive paragraphs were written to capture the trends and connect them to relevant information from the literature review and website analysis findings to initiate the process of triangulation. In both rounds, keywords from customised survey answers were categorised into a mindmap (i.e., a diagram used to organise information – in this case keywords or codes – into a hierarchy to visualise their relationships) in NVivo12. This mindmap was gradually develop over various analysis processes of survey and interview data.

6.4.3.2. Individual responses analysis

The main purpose of this round of analysis was to identify common patterns and dissimilarities among individual responses. Given the manageable size of the survey data set (50 responses), each was examined individually, using the general trends as a reference point to generate codes, search for themes and analyse them through written description. In the case of custom answers, the respondent's teaching/academic background information (i.e., discipline, teaching experience, employment status, training experience) was noted to contextualise their response. An additional step of analysis was undertaken on the custom texts to identify potential new themes contributed by the participants. If identified, they were integrated into the paragraph written for the corresponding question and coded to the mindmap. Once all 50 responses were analysed, all writings were then

imported into Nvivo 12 for coding.

6.4.3.3. Inter-thematic analysis

Inter-thematic analysis within the survey data set refers to the process of drawing connections among different questions across all three parts of the survey (i.e., academic background, experience with academic development, pedagogical methods with FF/TV). These connections were gradually conceptualised throughout the familiarisation and early code generation processes within question-based analysis. To record these newly identified connections, a new round of analysis writing was conducted in Nvivo 12 to describe them and elaborate on any relevant implications or ideas. At the same time, stages of the writing were also coded to the survey mindmap, or system of nodes, to assist the search for important themes (Phase three of thematic analysis) to be later cross-analysed with the interview data set.

6.4.4. Interview data set

6.4.4.1. Preparation stage: Types of notetaking, transcribing, participant confirmation

There were three interconnected types of notetaking used throughout interview data collection and analysis. First, during the interview, items were checked off the interview topic checklist (Appendix 8) and emerging topics were handwritten on the document for follow-up questions. Second, a routine note-taking session immediately followed each interview to ensure all necessary information and relevant ideas were properly recorded while fresh. Third, during transcribing, the recordings were paused frequently so that key phrases could be highlighted, thus making notes towards analysis. Transcribing was deemed a cognitive rather than mechanical task in this research.

Understanding that the interview transcription plays a crucial role in familiarisation

with the data (Bird, 2005; Riessman, 1993), the researcher transcribed each interview within a fortnight after it had taken place when the memory about the interviews was still fresh enough to be reliable, so that transcriptions could be readily embedded in the metadata as accurate and clean quotations. Before transcribing, every digital audio recording was transferred and securely stored in the University's assigned cloud storage. Each file name was also modified to include date, time and participant code. All transcripts were created manually using the Nvivo word processor following the edited transcription style (or clean verbatim transcription). This style choice aimed at producing comprehensive texts in which the original meaning was preserved, yet filler words and stammering were filtered out. Contextually meaningful yet unclear non-verbal communication from audio recordings such as long pauses, head shakes or nods were recorded for interpretation and analysis purposes.

Upon completing each interview transcription, the researcher proofread the transcript, exported it into an editable Word document, and emailed it to the corresponding interviewee for review and confirmation. The interviewees could then request modifications, removal or addition of information as they saw fit before they granted their consent for it to be used in the research as per their initial agreement. They could also withdraw their participation from the research upon reading the transcription, or within a month from giving consent. According to the terms and conditions detailed in the Participant Information Sheet and signed Consent Form, no response to this email within 14 working days was interpreted as permission for the transcription being used.

6.4.4.2. Organisation stage: Categorising, mind-mapping, 2-step coding

Once all requests from interviewees were satisfactorily addressed in the modified version of

transcriptions, the researcher updated the changes to the text files in Nvivo 12 to prepare for the organisation stage of data analysis. The interview transcriptions were named using the participant codes.

Key themes and topics covered in the interview checklist, notes taken during and after each interview, and in the previously created mindmap were used to generate initial codes. These codes were then arranged into a mindmap (interview version), or, in the language of Nvivo 12, a network of nodes. This provided a general structure for analysing the data and guiding deeper coding processes. The codes were incorporated into the mindmaps to provide a flexible framework to ensure that the relationship among different codes could be easily identified, new codes could find their places within the established structure, and the resulting clarity used to facilitate better decision-making about modifications to code wording, position and other aspects. In case of floating codes whose relationships with existing codes were not evident at the time of analysis, these were kept visible yet disconnected from the main structure awaiting decisions as the project evolved.

Two further steps of coding were conducted: first via word frequency using codes from the mindmap and second via close analysis of each transcription. The first step aimed at a quick search of keywords contained in the codes to identify all the locations where interviewees discussed using the same terms. The sentences or paragraphs that contained each node from all interview transcripts were then coded accordingly to provide context. This step of coding generated broad ideas related to the most common topics found in the interview data set, to determine whether they were connected to each other and what themes could be formed from them.

The second step involved carefully studying each transcription, during which

important information such as keywords and significant quotations were manually coded to relevant nodes. This process led to major modifications of the node structure, and, in effect, allowed key themes to emerge as the number of items coded to each node increased.

6.5. Inter-thematic analysis and writing across data corpus

The interview mindmap was then compared to the survey results to identify common codes and themes. These were then analysed to identify potential topics for the results chapters.

Throughout the analysis processes descriptive writing was done to bring relevant information from different survey questions and interview transcripts together. None of this early writing, for either of the data sets, was necessarily included in the final drafts of formal research writing. However, it was an effective method of data familiarisation, which also facilitated more mature and comprehensive understanding of the collected data.

6.6. Ethical considerations and clearance

The study was approved by the Human Research Ethics Committee at the University of Adelaide (approval number H-2019-139, please see Appendix 9). This research project was conducted according to the NHMRC National Statement on Ethical Conduct in Human Research 2007 (Updated 2018). Following requirements of satisfactory annual reporting, the approval was valid from 6 August 2019 through to 31 August 2022 for all the research activities described thus far.

The coming five chapters present the five key themes of the research findings in publication format. The five themes include (1) the dual effects of FF/TV in teaching in terms of student engagement, information retention, accommodation of differences and learning environment; (2) academic development related to FF/TV-assisted teaching practices; (3) different technologies involved in the making, delivery and integration of FF/TV in teaching; (4) practical integration of FF/TV in various teaching processes; and (5) student feedback and evaluation of teaching with FF/TV. Chapter 8 utilises results from the Go8 website analysis stage, which was conducted to canvas the current status of academic development provided by universities to support lecturers' FF/TV use. The corresponding paper therefore adopts the Go8 scope for the interview data to ensure the consistency of information presented in the paper. The remaining chapters expand the scope to all Australian universities to maximise the comprehensiveness of data analysis. The current status of each publication is articulated in the statement of authorship detailed at the beginning of each chapter.

CHAPTER 7

DUAL MERITS AND CHALLENGES OF FF/TV

Statement of Authorship

Title of paper	Two Sides of a Coin: The Balancing Act of Repurposing Feature Films and TV Series for Teaching
Publication Status	Submitted for publication-revised for this thesis for stylistic consistency
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Principal Author

Name of principal author (Candidate)	Ngoc Nhu Nguyen (Ruby)		
Contribution to the paper	Performed all data collection and analysis stages, interpreted data, developed first draft, wrote and revised manuscript, and act as corresponding author.		
Overall percentage (%)	100%		
Certification	This paper reports on original research I conducted during the period of my Higher Degree by Research candidature and is not subject to any obligations or contractual agreements with a third party that would constrain its inclusion in this thesis. I am the sole author of this paper.		
Signature		Date	04.10.2022

Two Sides of a Coin: The Balancing Act of Repurposing Feature Films and TV Series for Teaching

Contemporary educators have increasingly recognised the diversity of their student population, and hence attempted to use multimodal teaching methods for additional student learning benefits. One popular example is repurposing feature films and television series (FF/TV) for teaching. However, effectively integrating these materials into teaching is often more complicated than lecturers might imagine. This study investigates the merits and challenges of using FF/TV in teaching to determine the factors that impact development of an effective FF/TV pedagogy for student learning, through an online survey and semi-structured interviews with lecturers across disciplines at Australian universities. Using visual literacy, dual coding and cognitive load theories, data analysis reveals that the advantages and disadvantages of using FF/TV in teaching are in fact interconnected, and the main role of the teacher is to pedagogically balance them. Practical suggestions for optimising the effective and minimising the detrimental effects of FF/TV on student learning are detailed throughout discussions.

Keywords: multimedia learning, teaching with film, visual literacy, cognitive load theory, dual coding theory

7.1. Introduction

Contemporary educators often choose to use multimodal teaching methods to address the diversity of their student population regarding learning backgrounds, needs and preferences. Yet teachers without specific expertise in film or media studies do not always understand the complex implications of using mixed-media, which may result in unanticipated outcomes (Li, 2020; Ryan et al., 2010). Repurposing the fictional screentexts of feature films and TV series (FF/TV) for teaching is a common practice across all levels of education, but there is little research to establish whether teachers understand how beneficial or detrimental this practice can be for student learning (Driscoll, 2013).

The literature on the use of FF/TV in teaching reveals that a majority of educators tend to perceive merits and challenges as two separate domains (Marquis et al., 2020; Peacock et al., 2018; Swimelar, 2013). Scholars refer to the merits of integrating FF/TV representations into teaching disciplinary content. These range from practical considerations – such as low costs, ready supply (Fleischer, 2018; di Palma, 2009), reproducibility or adaptability of teaching methods for different courses (di Palma, 2009) – to pedagogical benefits in enhancing cognitive training, providing context and improving student engagement (Marquis et al., 2020; Peacock et al., 2018).

For instance, FF/TV generally are noted to appeal to students through their senses and emotions, helping them relate more readily to the subject matter (Fleischer, 2018; Donnelly, 2014) by offering a visible life-like representation of abstract concepts and real-life problems (Fleischer, 2018; Karasik et al., 2014; O'Boyle & Sandona, 2014). They can capture multiple

perspectives or dimensions of a topic such as a medical case or a social problem) to showcase the complexities that are difficult for teachers to demonstrate in the classroom, for students to grasp verbally, or rare phenomena to encounter in real life (Karasik et al., 2014; O'Boyle & Sandona, 2014). FF/TV can enable the training of various cognitive skills from remembering to critical thinking, or creativity in problem-solving, perspective-taking, decision-making, ethics and empathy training (Karasik et al., 2014 Donnelly, 2014 Djamaa, 2018; Bluestone, 2000; Jarvis, 2012; Marcus & Stoddard, 2009; Masters, 2005; O'Boyle & Sandona, 2014; Umanath et al., 2012). The multimodal nature of FF/TV pedagogy is also believed to assist with developing multiliteracies (Bonsignori, 2018; Viebrock, 2016; O'Boyle & Sandona, 2014). When screened in class, the shared film-viewing experience may reduce students' participation anxiety, improve group cohesion, and increase students' participation in class activities such as group discussion (Fleischer, 2018; Smith, 2009). FF/TV may also help create an inclusive learning environment where a variety of learning preferences can be accommodated (Fleischer, 2018) and motivate students to prepare for class (O'Boyle & Sandona, 2014).

However, even the most enthusiastic advocates of FF/TV in teaching recognise their potentially detrimental side (Bluestone, 2000; Donnelly, 2014; Fleischer, 2018; Hutton & Mak, 2014). A key characteristic of FF/TV is its entertainment value, which can distract students from taking the represented issues seriously or mislead them about the actual scale of represented problems (Fleischer, 2018; Hutton & Mak, 2014). Since the craft of FF/TV allows for emotional manipulation of the audience coupled with high persuasiveness, FF/TV could provoke unpredictable reactions or interpretations from students (Karasik et al., 2014) and negatively influence their ability to discern weak arguments (Fleischer, 2018).

Given the limited screen time within which complex, nuanced stories must be resolved, FF/TV also tend to oversimplify subject matter, which can sometimes lead to inaccurate understanding (Fleischer, 2018; Umanath et al., 2012). FF/TV representations can sometimes be controversial or distorted, potentially confusing students, which may further worsen unhelpful student learning tendencies such as passive consumption of FF/TV's perspective (Fleischer, 2018; Marcus, 2005); reduced ability to discern bias, weak arguments and inaccurate information (Fleischer, 2018; Umanath et al., 2012); low ability to transfer learned knowledge into real-life situations (Shapiro & Rucker, 2004; Marcus, 2009); lack of knowledge about concepts shown in FF/TV that lead to invalid conclusions or generalisations (Lee & Lo, 2014; Smith, 2009); and lack of background knowledge in audiovisual and film studies concepts (Membrives et al., 2016).

Problems related to less effective teaching methods involving FF/TV are also part of the conversation in the literature (Marquis etal., 2020; Membrives et al., 2016; Peacock et al., 2018). These mostly appear in articles that review primary studies reporting first-hand practice of FF/TV pedagogy, and are often detached from the student learning challenges listed above, but they do address the bigger picture of pedagogy development. In health sciences, for instance, Membrives and colleagues (2016) observe that teachers seem to lack methods of assessment beyond their own subjectivity and that the learning outcomes embedded in FF/TV use can be difficult to measure. Through experimenting with inaccuracy-detecting tests in using historical films, Umanath and colleagues (2012) warn that some classroom activities might not be effective due to FF/TV’s overpowering impact on cognition and memory compared to other instructional materials. Donnelly (2014)

asserted that much of FF/TV's educational potential remains untapped in teaching and learning due to the lack of training for teachers in using these media.

7.2. Theoretical underpinnings

This study employs an interdisciplinary framework of theories to address the complex and seemingly contradictory effects that FF/TV-assisted pedagogy can have on student learning. These theories include Visual Literacy, Dual Coding Theory and Cognitive Load Theory.

7.2.1. Visual Literacy

Visual literacy (VL) is an evolving field that deals with a variety of cognitive skills that involve working with information presented visually (photographs, illustrations, moving images) and describes how those skills can be effectively taught and learned. Although the connection between FF/TV and multiliteracies is not new, only a few educators have discussed the connection between FF/TV and VL in terms of cognitive skills (Holland, 2016). While the developers of VL theory seem to focus largely on communication within the general instructional context (Avgerinou & Pettersson, 2011), the current study attempts to explore how this communication operates in the specific context of FF/TV pedagogy.

VL might be perceived as a competence (Debes, 1969; Paquin, 1999), an ability (Avgerinou, 2003; Felten, 2008), a learned skill (Avgerinou, 2001; Kedra, 2018) or a mixture of all three. Filtering through multiple 'points of convergence' Avgerinou & Pettersson, (2011, p. 4) identified five core components of the theory: visual language, visual thinking, visual learning, visual communication and visual perception (Figure 7.1).

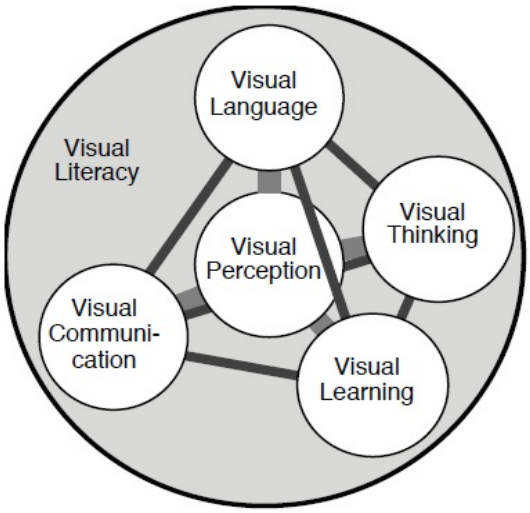

Figure 7.1. The components of the VL theory

Visual language (VLa) within the context of VL denotes a language of visuals that intermingles with the verbal language in human communication. Avgerinou and Pettersson (2011) conceptualised VLa through three skillsets: reading/decoding/interpreting visual statements; writing/encoding/creating visual statements; and thinking visually. Similar to verbal languages, VLa uses grammar, syntax and vocabulary (Arneson & Offerdahl, 2018; Bowen, 2017). VLa is also interdisciplinary in nature and characterised as integral to the other four elements. Without fixed rules for interpretation like mathematical symbols, VLa instead 'attempt[s] equivalence with reality' (Avgerinou & Pettersson, 2011) as it mirrors what it represents and thus has the power to directly communicate the same way real-life experiences do. This study treats the teaching and learning connected to FF/TV as a case study where our current understanding of VL and VLa plays a vital role in analysing how these screentexts should be repurposed for effective classroom communication (i.e., transfer of knowledge and/or skills) between teachers and students.

The basic content of visuals may seem universal and natural to recognise, but this commonsense approach belies the complexity at play, because of the simultaneous

functions in VL that are both cognitive (viewing, thinking, imagining, visualising, inferring and constructing meaning) and affective (evoking feelings and attitudes). Avgerinou and Pettersson (2011, p. 11) offer recommendations to strengthen the readability of the instructional visuals. They include ensuring:

(1) the subject matter is familiar to the audience;

(2) the subject matter is depicted in a realistic manner;

(3) visuals lack excessive detail that may distract from the main message; and

(4) the visual conventions are familiar to the audience.

These recommendations bear close resemblance to the key principles of dual coding and cognitive load theories.

7.2.2. Dual Coding Theory

Much as verbal language is taken for granted as the dominant means to knowledge acquisition, Dual Coding Theory (DCT) is a reminder that imagery came first in human communication and as a memory aid (Clark & Paivio, 1991; Yates, 1966). DCT asserts that knowledge acquisition is superior when both visual and verbal communication modes are employed because every different sensorimotor modality (e.g., words, still images, moving images, auditory materials) – whether accessed perceptually, verbally or cross-modally – activates a different part of the brain via a different neural pathway (Magnussen, 2001; Paivio, 2014). This means that when teachers present an item of knowledge in more than one modality, such as both textually and audio-visually, students could store that knowledge in multiple locations in the brain through different cognitive processes, enabling long-lasting memory retention. However, this benefit of FF/TV specifically, and dual coding generally, comes with a downside. As the learning process is complicated with the

additional layers of imagery, a drop in speed in achieving the learning outcomes is also to be expected (Cunha et al., 2010).

7.2.3. Cognitive Load Theory

Also emerging from educational psychology and neuroscience, Cognitive Load Theory (CLT) is favoured by many educators for its strong evidence-based roots and high applicability. CLT is essentially founded on the limited capacity of working memory at a given moment in time and the formation of schemas in long-term memory (i.e., learning) (Anderson, 1977; Cowan, 2001). It therefore supports explicit or direct models of instruction where teachers provide students with specific and clear guidance. Rather than categorising information based on their modalities (e.g., visual, auditory, spatial), CLT distinguishes information as helpful or unhelpful to the specific requirements of a learning task. Accordingly, CLT describes the cognitive load as having three different interconnected parts: intrinsic/productive load, germane load and extraneous/unproductive load (Kester et al., 2010).

The intrinsic load refers to the amount of interacting elements required by a specific task to be processed simultaneously on the working memory (Paas & Gog, 2006). When the task is watching a film clip, for example, the intrinsic load is often high due to the amount of multimodal information needed to be processed together (e.g., speech, visual, music, narration, plot) to make sense of the film clip. If a learner is familiar with the film (i.e., more expertise in some element – plot, visuals – of the task), the intrinsic load decreases as these familiar elements get stored into a schema in long term memory and processed as a single element on the working memory. The germane load and the extraneous load refer to the cognitive load imposed on a learner by instructional design that accompany that task.

Extraneous load comes from elements of instructional design that are unhelpful for learning and completing the task, while germane load comes from the helpful elements (Paas & Gog, 2006; Sweller et al., 1998). Since intrinsic, germane and extraneous cognitive loads all function within the limited capacity and duration of the working memory load, good instructional design generally seeks to design tasks with manageable intrinsic load, optimise helpful elements (subsequently germane load) and minimise unhelpful elements (subsequently extraneous load) to facilitate learning (Orru & Longo, 2019; van Merriënboer & Sweller, 2005; Young et al., 2015).

7.2.3.1. Motivation and emotion in learning

Traditional CLT scholars tend to cast the non-cognitive aspects of learning such as motivation and the associated emotions as the learner's virtues rather than a factor impacting on cognitive load (Feldon et al., 2019; Paas et al., 2005; van Merriënboer & Sweller, 2005). However, in recent years, the motivational and emotional dimensions of learning have attracted more interest, being regarded as precursors, parallel processes and as outcomes of cognitive load (Geary, 2007; Feldon et al., 2019; Plass & Kalyuga, 2019). Human learners need a sense of motivation that is a blend between self-interest and socially acceptable conventions to guide them towards learning domain-specific knowledge and skills, typically in organised educational settings (Eccles & Wigfield, 2002; Likourezos & Kalyuga, 2017; Plass & Kalyuga, 2019). Ryan and Deci (2017) categorised this blend into intrinsic and extrinsic motivation. Intrinsic motivation refers to our inherent tendencies to pursue actions such as learning, social integration and connection with others that offer them self-growth, joy and satisfaction (Ryan & Deci, 2020). These intrinsic motivators are strongly influenced by externally determined values and standards, that is, extrinsic

motivation (Ryan & Deci, 2020). Studies across countries and learning contexts have found intrinsic motivation experienced by students to decline over time (Lepper et al., 2005; Gillet et al., 2012; Scherrer & Preckel, 2019), suggesting that formal education has not provided sufficiently supportive learning environments for accommodating students' learning needs (Ryan & Deci, 2020). Several empirical studies related to CLT have also documented the parallel between changes in motivational beliefs and changes in functioning levels of cognitive load (Feldon et al., 2018, 2019; Likourezos & Kalyuga, 2017).

Regarding memory retention, memories heightened by emotions generally take longer to be forgotten (Sharot et al., 2004); emotional activation at any time during learning (i.e., before, during, shortly after) can enhance memory retention and retrieval (McGaugh, 2018). Emotions that are involved in forming and changing motivation over time are often categorised as positive or negative emotions. Positive emotions are generally viewed as an integral part of motivation and a contributing factor to optimising intrinsic load (Erez & Isen, 2002; Isen & Reeve, 2005; Pekrun, 2006; Pekrun & Linnenbrink-Garcia, 2012), as well as effective retrieval cues to recall information from long-term memory (Ericsson & Kintsch, 1995; Laird et al., 1982). In contrast, negative emotions such as stress, anxiety, frustration and boredom increase extraneous load, leading to weaker recall power, fewer creative processes and lower quality learning outcomes (Curci et al., 2013; Plancher et al., 2018; Zlomuzica et al., 2016). That said, within learning contexts in which processing and regulating negative emotions are part of the intended learning outcomes (e.g., empathy, ethical awareness, bad news delivery skills in medical education), then they are associated with the intrinsic cognitive load (Fraser et al., 2014, 2015).

7.3. Research questions

This study pursues the following questions to clarify the factors that impact development of an effective FF/TV pedagogy.

- What are the key domains of student learning on which FF/TV-assisted pedagogy could have both positive and negative effects?
- What specific characteristics of FF/TV representations contribute to creating these effects?
- How can this understanding assist teachers in the decision-making and planning processes when using FF/TV?

7.4. Methods

With ethics approval, a qualitative survey was followed by semi-structured interviews with lecturers across disciplines in Australian universities.

Using the online platform SurveyMonkey, a qualitative survey was circulated via newsletters of higher education networks, email invitations, flyers, and snowball sampling. Fifty anonymous respondents participated over approximately five months. There were 36 qualitative multiple-choice and open-ended survey questions (Appendix 4). They followed a skip logic that allowed respondents to navigate their own set of questions corresponding to their circumstances. The areas covered, relevant for this study were:

(1) Academic and teaching backgrounds (Q1-Q4)

(2) Information about teaching methods involving FF/TV (Q15-Q27, Q33, Q34)

(3) Successes and difficulties in integrating FF/TV in teaching (Q30, Q31, Q35)

(4) Recommendations for addressing any difficulties (Q32).

The majority of survey respondents held permanent teaching positions (68%), followed by casual teaching staff (12%) and 1-3 year fixed-term contractors (10%). Their disciplines are

summarised in Figure 7.2 (some taught courses in multiple disciplines, hence the total percentage exceeds 100).

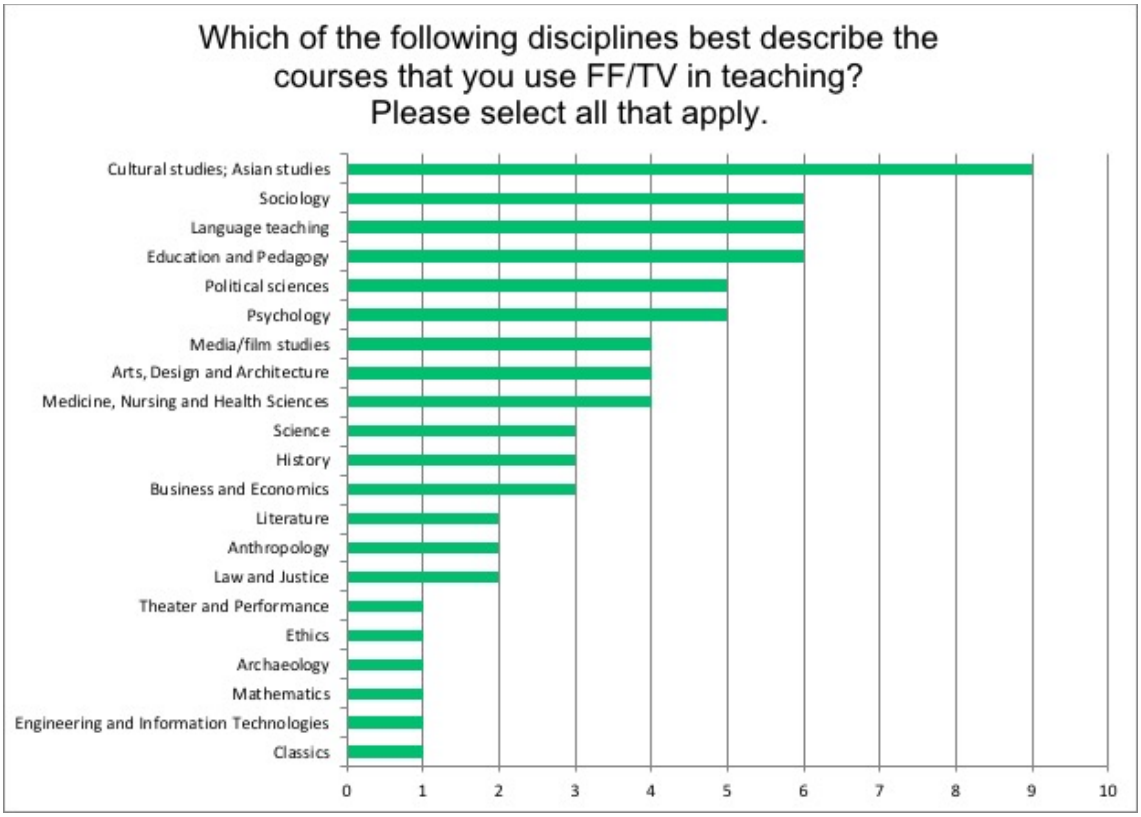

Figure 7.2. Academic disciplines of survey respondents

Upon completing the survey, participants were invited to follow-up 30-90 minute one-on-one interviews. Each of the 18 interviews lasted 30-90 minutes. Interviewees came from sociology, biology, gerontology, technology, pedagogy and education, Asian/cultural studies, ethics/religion, academic writing and research, English language, history, and film/media studies. Several lecturers experienced teaching in countries other than Australia and across a range of different educational institutions other than state non-religious universities, which indicates a reasonable level of relevance and applicability of research findings to various teaching contexts outside Australia.

The interviews covered similar topics to the survey but used semi-structured and personalised questions to invite lecturers to reflect and elaborate on their answers (Appendix 9). This aimed at capturing a comprehensive context of their experience with FF/TV integration in teaching. Having completed the survey shortly beforehand, most participants came prepared to discuss and integrate different aspects of their teaching practice.

Interviewees came from sociology, education, Asian/cultural studies, history, politics, biology, gerentology, and physics. Only nine out of fifty respondents reported having received some sort of training possibly related to FF/TV in teaching, among which only five obtained training from their institutions, while the rest either sought training at their own cost or were self-taught. Therefore, respondents' self-evaluation in terms of film/media literacy and the efficacy of their pedagogy involving FF/TV should be interpreted critically to avoid delivering overly optimistic results.

Although the scope of this study initially covered mainly university lecturers, research findings indicate high relevance to all teaching contexts thanks to the flexibility of FF/TV in all teaching modes (i.e., face-to-face, remote, blended) and the multiple professions outside university that several interviewees had experienced by the time of the interview (e.g., teaching at schools/TAFE/special education/online education providers, filmmaking, playwriting, clinical work, etc.).

7.5. Findings

Thematic analysis of survey and interview data revealed four main themes of pedagogical issues that the use of FF/TV made an impact: student engagement, information retention, social learning environment, and accommodation of differences. Pseudonyms L1 to L18 are

used when quoting interviewees.

7.5.1. Theme 1: Student engagement

Thirty two out of fifty survey respondents (64%) chose 'FF/TV to engage students through emotions, senses and relevance' as a reason to incorporate FF/TV in their teaching. As a result of such engagement, many respondents pointed to FF/TV's other inviting qualities such as enabling 'deeper thought/more nuanced understanding' (50%), promoting 'discussion and student participation' (50%) and motivating 'students to prepare/come to class' (24%). Regarding challenges, the survey asked: 'What kind of problems have you encountered [when using FF/TV in teaching]?' and provided a list of possible options. The following issues identified by survey respondents demonstrated a clear connection between student learning problems and the over-engaging traits of FF/TV:

- [FF/TV] influence or change students' perception (18 respondents)
- Unpredictable reactions/interpretations caused by emotional distress triggered as an effect of FF/TV (11 respondents)
- Students' passive consumption of FF/TV's subjectivity (10 respondents)
- FF/TV's tendency to oversimplify complex/nuanced subjects to resolve within screen time (9 respondents)
- Fiction-reality tension leading to controversial representations/distorted portrayals that confuse students (7 respondents)
- FF/TV's high persuasiveness harming students' thinking abilities (6 respondents)
- FF/TV's entertaining qualities distract students from taking issues seriously or in the same scale as in reality (4 respondents)
- Students' low ability to transfer learned knowledge into real-life situations (4 respondents).

Interviewees confirmed that one popular reason for choosing FF/TV representations for teaching was to create an attention 'hook', partly as a strong first impression to facilitate

initial engagement with the academic content:

> one of things I believe is you gotta start off like a big bang […] like a hook into the lecture. (L11)

Qualitative learning tasks and activities such as class discussion, online forum, reflective journaling were regular choices when it comes to maintaining that initial engagement throughout the lecture by encouraging reflection and exchange of ideas:

> screen can be used to talk about things that are deep and socially relevant […] often once you find the thing that they're interested in, discussion just explodes. (L2)

However, many interviewees also reported the flipside of FF/TV's strong engagement as giving rise to emotional bias and distraction during discussions:

> [students] might be looking at something you don't want them to look at and distracted by something that's there, or they're talking about the film itself rather that the learning activity. (L4)

> [students] will go off on things they're personally passionate about […] it can get heated. (L2)

Teachers therefore felt they should mobilise strategies that help refocus students while also teaching them to acknowledge how their own biases influence their 'reading' of FF/TV:

> it's important to recognise how, as consumers of film, we also bring with us our baggage in our understanding and interpretation. While dealing with the messages a film tries to convey, we have our own messages that we wish to confirm or deny. (L13)

Some interviewees elaborated on how powerful engagement through FF/TV could yield contradictory learning outcomes for students. They identified their personal experience of FF/TV's persuasive manipulation, and explained how they addressed it in their teaching:

> I have to say Liam Nelson in *Taken*: I get swept away in it […] but as academics we have to be able to acknowledge that I like to watch this film, but I know that there can be no facts in them […] that's what I'm desperately trying to help students pick up. (L17)

> Teachers need to say, 'That's a fiction, but let's talk about why you're attracted to that' […] it's a non-cognitive thing because film moves past the judgement, around words to feelings and emotions and sensory stuff […] I'm always encouraging students to critically separate what you notice or perceive from how you might interpret that perception. (L13)

Some interviewees offered their suggestions towards reducing the emotional effects of FF/TV on student learning and enhancing students' critical-analytical thinking:

> we spend one week in the course on learning film analysis skills [...] partly I'm teaching sociology, partly I'm teaching film studies. (L1)

> the technique of separating the visual from the audio can be a good way to diminish [the cognitive burden]. (L13)

> Often I apply the 'alienation effect' devised by Bertolt Brecht […] basically you get the story at the beginning […so that] audience pay less attention to the affective impact and pay more attention to the cognitive and analytical context. (L18)

While the engaging qualities of FF/TV should and can be utilised as a springboard for thoughts and discussion, lecturers still need to pedagogically address the emotional attraction of FF/TV that may have detrimental effects on student learning.

7.5.2. Theme 2: Information retention

The majority of survey participants acknowledged the positive impact of FF/TV's visual representation of abstract concepts (78% of survey responses) and real-life problems (70%) on student learning, whereas 44% of survey respondents selected 'they help students remember information better' as their reason for choosing FF/TV. However, information retention is also implied in a range of student learning issues with FF/TV reported by survey respondents, which raised questions about the quality of that memory/information retention:

- Students' lack of knowledge about concepts shown in films, resulting in them drawing invalid conclusions/generalisations (10 respondents)

- Students' low ability to discern bias, weak arguments and/or inaccurate information (9 respondents)
- Fiction-reality tension leading to controversial representations/distorted portrayals that confuse students (7 respondents)
- FF/TV's high persuasiveness and harming students' thinking abilities (6 respondents)

Similarly, all interviewed lecturers positively acknowledged FF/TV's multiple pedagogical merits, especially their abilitiy to create long-lasting information retention:

> one of the perks of using visual media is also creating a really strong impression on people that will make lasting memories. (L13)
>
> students actually remember film scenes pretty well. They relate those scenes to the points that they want to make in class discussion and essay. (L16)

Several interviewees also elaborated on why FF/TV have that effect, which involves their realism and affectivity:

> we watch films with our eyes, we also hear, but research showed that we actually react with our whole bodies and sometimes phenomenologically you might feel like the film touches you in certain ways […] watching a film [is] not reality, but it feels like reality. (L1)
>
> all those short clips are a way to engage my students with a range of feelings, discourse dynamic, encouraging my students to observe the behaviours between the different characters in the scenario. (L13)

However, in the repeated experience of interviewees L1, L5 and L17, students mostly remember only what the film portrays, despite their attempts to dismantle the inaccurate information. These lecturers concluded that, without a carefully strategised and sufficiently memorable pedagogy, these audio-visual materials could easily overpower text-based and verbal instruction:

> for several years I showed a film and then I spent the course demolishing most claims in it […but] when I asked [students] in quizzes, that crappy black and white thing we showed in Week 1, for many students, remained the more powerful image even after 3 months of doing my course. (L5)

> I've been very unsuccessful at dispelling this film. I don't think [students] understand the various other perspectives. I think the techniques that go with the use of film matter most: I don't have outside speakers, interesting exercises, or a whole semester to dispel the film […] you'd have to work much harder. (L17)

> I get [students] to look at films with different voices […] and explain to them how they're not actually telling the same story even though it's presented as the same story […] but when I asked them in an assignment about those films, they'd just totally take the film as 'Oh this is the truth'. (L1)

7.5.3. Theme 3: Social learning environment

A few survey responses (either directly or indirectly) recognised the advantages of FF/TV regarding humour and other positive qualities that helped create an enabling learning environment:

- contain humour, which relaxes and engages students better (28%)
- motivate students to come to class (24%)
- reduce stress and participation anxiety (12%)
- create a safe communal zone (6%).

While such qualities might have a soothing effect on student wellbeing, it is also potentially distracting, resulting in students not 'taking issues seriously or on the same scale as in reality' (four survey respondents). These undesirable effects of FF/TV might even be accidentally strengthened by some educators' non-optimal use of the media in the classroom (Hobbs, 2006), such as employing FF/TV as 'fillers' (two survey respondents).

The humour or light tone used by some FF/TV to communicate difficult issues was found helpful to alleviate some alarming attitudes among contemporary student populations:

> even in the humanities, you're dealing with a lot of apathy and cynicism [among students] apathy is 'I don't care', cynicism is 'I don't really believe you'. (L2)

> many students are depressed already […] you just got to be happy in class, happy with other students, happy with the content – not because the content is easy but happy in dealing with the difficult social issues through film. (L16)

> [FF/TV are] fictionalised, but I think the fictionalisation actually helps students to see these things in reality because a TV show with scripted comedy is actually making comments on the reality of the situation. (L12)

Similar to L3's idea of bringing students together to enable collaborative learning, another benefit of using FF/TV in the educational context is to assist learning within a community through creating a shared experience by watching the material as a group. Several interviewees emphasised the importance of this communal experience in reconciling – at least to a degree – the previously discussed challenges of using FF/TV in teaching:

> if you've all watched the film together, you'd have that shared experience that you can talk about, and also compare it to other experiences that the students might have all had. (L1)

However, screening FF/TV in class can also create an excuse for some students to skip attending lectures and watch the FF/TV themselves, which could potentially lead them to misinterpretations and unexpected triggers if they miss the instruction and/or preparatory tasks. Such concerns might shape teachers' sceptical attitude when dealing with student complaints about triggers as previously discussed:

> I've had students who say, 'Sorry I've fallen behind but that thing was really triggering'. I said, 'You were away for 8 weeks before that, so I don't think it was that thing that is really the issue here'. But you got to be really carefully how you phrase that […] some students

> said [a film] should be removed from the curriculum because it's glorifying sexual predators. 'No', I said, 'that's the direct opposite of what it's doing, but because you didn't come to the lecture, you don't see that'. (L2)

Alternatively, some teachers may opt to assign FF/TV viewing alongside some other tasks as homework to supplement the limited class or tutorial time. However, they reported that it not only defeats the purpose of a shared learning experience, but many students also skipped the work:

> [students] are expected to see the film on their own outside of class time but there is substantial evidence that quite a few students don't see the films. (L8)

7.5.4. Theme 4: Accommodation of differences

As the findings so far demonstrate, the multitude of viewpoints, agendas or voices in FF/TV representations is not always easy for students or even educators to clearly discern. Although there is no direct indication in the survey, several interviewees raised the idea that such multitude or complexity of FF/TV is in fact valuable to accommodate the increasingly diverse student populations and their learning requirements:

> the student population is increasingly diverse in culture differences, age and gender […] forms of popular culture, particularly film and TV, can be a really useful way of getting complex issues across and getting discussion going. (L15)

> no story is just entertainment: there's always a theme and agenda […] I'm teaching [students] to see the things that are being communicated to them so that they in turn can communicate through their work. (L2)

> film is […] synaesthetic—you'll be asked to master a lot of cognitive and sensory resources at once to understand a film […] to unpack the invisible work behind it and work out how many senses are being employed and in what way to achieve a certain effect. (L8)

> we're all meaning-making human beings so we will constantly impose meaning, focus on one thing to the extent of missing something else, having blind spots. The big learning for [students] is to suspend judgement on making too soon assumptions. (L13)

The multiple modalities and origins of FF/TV productions could accommodate various

learning factors – students' strengths, weaknesses, interests, learning goals or attitudes towards certain topics. Although some interviewees casually used the generalised and controversial term 'learning style' (Knoll et al., 2017; Rogowsky et al., 2020), their collective encounters offered insights into diverse influences and pedagogical approaches to help train students in the literacies associated with different learning factors:

> I've trained in 4MAT that recognises 4 different learning styles and also teaching styles […] some would privilege more the written form, but others would privilege more the visual and sensory and symbolic ways […] I have a bias against practical tips, so I have to force myself to give simple step-by-step ideas because I'm into big-picture thinking a lot. (L13)

> Not everybody will want to or can express their opinion straight away [...] so getting different types of learners to work together is really useful to [those] who might struggle to provide an immediate response […] hopefully the other members of the team will be able to model for them a way of engaging with the text, through teamwork, collaboration, and sharing of ideas. (L3)

> I teach by talking about it, by showing it, and then by doing it […] I've been told that everyone needs to hear things three times in three different ways to learn it. (L6)

While learning theories support the logic behind using FF/TV pedagogy to accommodate learning diversity, this multifunctionality of FF/TV can sometimes complicate the increasing need to accommodate sensitivities motivated by students' backgrounds such as culture, race, gender, age or religion – common causes of emotional or political triggers. Despite taking the utmost care when handling mass consumption of FF/TV representations by their students, and potentially even when overseen by their parents, many interviewees still reported unfortunate incidents:

> a student with Indigenous background was emotionally triggered by some content […] the lecture was prefixed by trigger warnings […] but this student hadn't engaged with the lecture, so they weren't aware. I guess there could have been more training for me to repeat the warnings more. (L12)

> I was tutoring in a course [… using] German cinema, one of the students' parents took exception to one of the films that we showed […] in terms of sexuality. (L15)

This has also contributed to the decline of FF/TV use in university pedagogy, as some lecturers perceived more deeply rooted, yet new and challenging problems such as generational sensitivity, fear and intergenerational discrepancy:

> The last year or two is the first time I've had students saying 'I'm triggered by this' […] on one level if it's hurting people then they shouldn't be exposed to that, but on the other side of the coin, the drama does confront real issues—how do we talk about that without showing those issues in some way? (L2)

> it was mentioned to me in a seminar in 2018 that […] there was an increase in tendency in literal interpretation by students […] it helps explain why some things just don't work out the way I expected. (L5)

7.6. Discussion

Originally created for the entertainment industry, FF/TV representations are designed to capture the audiences' attention and emotion, create long-lasting memories within an entertaining atmosphere, as well as connecting with audience from different backgrounds (Butler, 2012; Donnelly, 2014). These coincide with desirable characteristics of instructional materials. However, the two contexts – entertainment and education – call for two significantly different set of standards for engagement, information retention, social environment and intercultural communication.

Almost all lecturers who integrated FF/TV into their teaching were aware of and directly mentioned the student engagement benefits. This engagement came from an array of factors, from the mass-consumed audio-visual narrative format (Dual Coding), diverse and relatable content, to the strong emotional investment (motivation and emotion). Learning contexts in which FF/TV viewing is not strategically framed by effective instruction can accentuate unhelpful students' learning habits and weaknesses, thus leading to sub-

obtimal learning outcomes. Lecturers who seemed aware of these risks reported using methods that indirectly applied principles of Visual Literacy (e.g., explicitly teaching film analysis skills alongside disciplinary content knowledge) , Cognitive Load (e.g., image-sound separation) and brought together extrinsic motivation (i.e., engaging FF/TV content) and intrinsic motivation (i.e., connections to students' personal experiences and values) in qualitative assessment methods.

Between DCT which suggests that the dual activation of visual and verbal communication channels facilitates a superior memory retention (Magnussen, 2001; Paivio, 2014), current CLT research that indicates the connection between emotional activation and memory retention and retrieval (McGaugh, 2018; Sharot et al., 2004), and VL principles around realism and familiar visual language frong strong readability (Avgerinou and Pettersson, 2011), it was no surprise that FF/TV were deemed a good choice for their assistance in students' schema formation. However, the diverse experiences of lecturers with FF/TV highlighted the need to examine the accuracy of information retained by students upon watching FF/TV, especially when compounded by students' low film literacy (e.g., little/no background knowledge about film studies, weak abilities to discern bias/misinformation, confusion between fiction and reality) reported by both survey and interview participants. Lecturers therefore should ensure that the selected FF/TV content is coherent with and complementary their course content, rather than contradicting, and aim to train students in film literacy prior to FF/TV exposure (Umanath et al., 2012).

Though not a large number of participants showed awareness of FF/TV's abilities to create a learning-friendly environment for students, those who did demonstrated an understanding of how negative and positive emotions contribute to learning effectiveness

and the relationship between emotion and motivation (Pekrun & Linnenbrink-Garcia, 2012; Curci et al., 2013; Plancher et al., 2018; Ryan & Deci, 2020). While there are many benefits of a FF/TV-assisted communal low-stress learning environment for stressful topics, it is still a balancing act with students' tendency to take FF/TV use slightly and/or their poor learning behaviors.

For visual instructional materials to achieve high readability, viewers need to be familiar with the visual language used in such materials (Avgerinou and Pettersson, 2011). However, the findings on FF/TV's emotional triggers suggest the importance of understanding *how* familiarity manifests in different individuals due to their personal backgrounds – positive or negative (Laursen, 2019). If positive, FF/TV's multimodal nature can be helpful in accommodating different learning preferences as some participants argued. If negative, lecturers need to consider the effects of negative emotions on students' extraneous load such as slowing down their capacity to process information and learn (Plancher et al., 2018; Zlomuzica et al., 2016). Since contemporary students increasingly identify as experiencing psychological distress across disciplines, cultures and backgrounds (Hernández-Torrano et al., 2020), there is a pressing need for educators to factor student wellbeing and mental health into their pedagogical design. This means that superficial trigger warnings and using assessment results to monitor learning outcomes do not suffice. Rather, educators should seek to create an engaging, informative and safe learning environment, taking into consideration the atmosphere, content, instruction and student motivation to engender mutual understanding, trust and support (Crook & Mitchell, 2012), perhaps by ensuring that FF/TV viewing and lectures are not separate events but are integrated learning opportunities that cannot be separated. This ensure that students are

given clear warnings about potential triggers and immediate support if required.

The richness in perspectives, modalities and literacies of FF/TV representations clearly requires a pedagogy to balance the benefits and risks of FF/TV's attributes for student learning. Processing such diverse educational offerings is cognitively complex and demanding, especially for lecturers and students who might be inexperienced or unfamiliar with the multimodal approach. Therefore, rather than relying on school education or assumed media competences in younger generations, lecturers should proactively train students in visual and film literacy. Literacy training can be done through lecturing or providing guiding questions, resources, collaborative tasks and activities to help reduce the cognitive load of studying films simultaneously with disciplinary content. Trigger warnings can be integrated meaningfully into instruction – not only to inform but also to highlight the content relevance, and hence necessity of learning from potentially difficult FF/TV representations.

7.7. Conclusion

This study explored the contradictory nature of FF/TV's effects on student learning when integrated into teaching and identified four main themes in which these effects can often be observed. They were student engagement, information retention, social learning environment and accommodation of differences. Through the lense of Visual Literacy, Dual Coding Theory, Cognitive Load Theory and current research on emotion and motivation, the study analysed the survey and interview data to understand why participants' specific experiences with FF/TV integration occured, how to replicate the effective practices and how to manage the associated risks. While integrating FF/TV into teaching indeed has multiple merits thanks to their multimodal, engaging, and relatable qualities, it is

interdisciplinary in nature and thus requires both lecturers and students a working knowledge of how FF/TV operate and interact with other instructional elements the classroom context. The study emphasised the vital role of instructional design and delivery in optimising the good and minimising the bad of FF/TV being repurposed from entertainment to education. Delivering a pedagogy that involves FF/TV to groups of students with potentially different backgrounds, needs and preferences, without fully understanding how these media achieve their effects on the audience, is like tossing a coin: the outcome could be either heads or tails.

7.8. References

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CHAPTER 8

ACADEMIC DEVELOPMENT ON FF/TV USE

Statement of Authorship

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Contribution to the paper	Performed all data collection and analysis stages, interpreted data, wrote and revised manuscript, and act as corresponding author.		
Overall percentage (%)	100%		
Certification	This paper reports on original research I conducted during the period of my Higher Degree by Research candidature and is not subject to any obligations or contractual agreements with a third party that would constrain its inclusion in this thesis. I am the sole author of this paper.		
Signature		Date	04.10.2022

How Do University Lecturers Learn to Teach with Film? Formal and Informal Academic Development

Multimedia technologies are increasingly used by university lecturers to stay relevant in contemporary media-saturated society. Across disciplines, using multimedia in teaching often means integrating videos, including feature films and/or television series (FF/TV), into learning activities and assessments. Like other media technologies, effective integration of FF/TV into teaching can be achieved through coordinated training and practice. This study explores formal and informal venues of academic development (AD) to understand how lecturers learn to teach with film. A model of four key aspects is proposed as a research outcome, detailing lecturers' requirements and considerations regarding teaching with FF/TV for future AD options.

Keywords: academic development; pedagogy; multimedia; feature films; TV series

8.1. Introduction

Multimedia technologies are increasingly used in teaching by university lecturers to stay relevant

in contemporary media-saturated society (Bonsignori, 2018; Lim & Tan, 2018). Across disciplines, teaching with multimedia often means integrating videos, including feature films and/or television series (FF/TV), into class activities and assessments (Sealey, 2008). Amid the proliferation of streaming services and mass media consumption by student populations, FF/TV make valuable instructional materials, and can promote various critical-analytical-nuanced thinking skills (Bonsignori, 2018; Donnelly, 2014; Fleischer, 2018; Karasik et al., 2014). Unlike many other technologies used in teaching, FF/TV representations are not originally created to inform or educate, but to entertain and even manipulate viewers through their narrative, dramatic and special effects that help FF/TV achieve their effects on viewers (Marks & Polan, 2000). Therefore, when making a pedagogical choice to include FF/TV in teaching, lecturers may need to consider how much and in what ways their students require preparation to best engage with FF/TV, to retain correct information, to adapt to their own learning preferences and to extract positive effects from their learning environment (see Chapter 7). This raises the question of how lecturers might find relevant resources and guidance to use FF/TV effectively for student learning.

8.2. Literature review

Film was introduced to education in the early 1900s as a tool for organisational reform and rebranding within small elite environments such as the Silicon Valley or Stanford University without formal or accredited user training for educators (Cuban, 2001; Hoban et al., 1937; Hoof, 2013; Sealey, 2008). This introduction was founded on a misconception that using film in teaching would be a straightforward, unproblematic or even decorative practice. (ref) Moreover, film was challenging and expensive to produce and reproduce. Whilst film libraries were plentiful, those designed for education were often not a good match for teaching objectives nor were they easy to access in a timely fashion. Film productions for entertainment and business purposes also often addressed socially taboo subjects, making them difficult to bend towards educational use

(Grieveson, 2004; Hobbs & Jensen, 2009).

Despite not being taken seriously at first, film studies did eventually emerge as a formal intellectual endeavour in the 1950s (Kuhn, 2019). Gradually the parallel world of film (Sigler & Albandoz, 2014) was incorporated into teaching across academic disciplines as a 'folding pedagogy' that encouraged thinking and learning beyond the subject matter (Deleuze, 1993, as cited in Richardson, 2016). With rich FF/TV resources available (Marquis et al., 2020), and fuelled by the race for student engagement and satisfaction, educators across disciplines have introduced FF/TV into their teaching across multiple disciplines. Examples include sociology (Andrist et al., 2014), history (Donnelly, 2014), economics (Diaz Vidal et al., 2020), politics (Swimelar, 2013), psychology (Searight & Saunders, 2014), medicine (Recupero et al., 2021), and math (Reinhold, 1997).

Within the context of higher education, academics often cite a range of widely accepted and interconnected pedagogical goals when justifying their film use in teaching. These include enabling deep learning, visualising abstraction, engaging emotions, encouraging critical/analytical thinking, teaching media literacies, and de-stressing the learning environment (e.g., Fleischer, 2018; Djamaa, 2018; Donnelly, 2014; Peacock et al., 2018). These pedagogical goals emphasise the multimodal, narrative, affective, relatable and mass consumption characteristics of film representations, rather than their length, genre or format. This study considers both the use of feature films and television series (FF/TV) either in entirety or through excerpts (clips)[1].

Studies into the pedagogical use of FF/TV are mostly small scale and discipline specific, in which educators reported mainly self-taught methods of pedagogy development and several technical and pedagogical challenges (Marquis et al., 2020). They also point to the paucity of

[1] Although documentaries also fit in this category due to the blurred conceptual distinction between fiction and non-fiction (Friend, 2021) and the proliferation of streaming services, this study is limited to FF/TV representations to avoid resistance from lecturers who might find the distinction between fact and fiction controversial.

relevant guidance and training for instructors (e.g., Andrist et al., 2014; Donnelly, 2014; Peacock et al., 2018) and called for more systematic and organised methods of sharing best practices to help instructors optimise their use and minimise any detrimental effects on student learning caused by FF/TV (Ansell, 2002; Engert and Spencer, 2009; Hobbs, 2006; Swimelar, 2013).

8.3. Methods

Participants were recruited from the Group of Eight (Go8) research-intensive universities in Australia. These institutions are consistently the highest ranked in Australia, appear in the top 150 universities worldwide, and are responsible for educating over a quarter of the country's tertiary students – including a high percentage of international students (Go8 website). While it might seem counter-intuitive to choose the Go8 to investigate teaching practices because research-intensive institutions are known for treating teaching as secondary to research (Locke, 2012; Tuchman, 2011), qualifications from these universities are indisputably coveted by domestic and international students, leading to extensive teaching of high-performing students. Furthermore, these institutions host many inspiring, widely implemented pedagogical innovations (Stensaker et al., 2017), with many of their lecturers demonstrating outstanding teaching excellence and winning prestigious teaching awards (Mitten & Ross, 2018). There is also growing pressure on research-intensive universities to utilise their research advantages to strengthen their teaching quality (Brennan et al., 2019; Stensaker et al., 2017). Thus, participants drawn from Go8 universities can provide insights into how academics in highly regarded institutions learn to incorporate innovative pedagogies into their teaching.

The study aims to investigate the venues through which university lecturers learn about effective use of FF/TV in teaching. Are lecturers acquiring guidance and resources from formal training opportunities provided by their institutions, or from informal academic development initiatives?

Data was collected in two stages. First, official websites of all Go8 universities were searched for formal academic development opportunities (e.g., workshops, seminars, short courses, graduate certificates) related to the use of film in teaching. To match the Go8 scope of website analysis, a sample of 13 lecturers across disciplines at Go8 who use film in teaching at these universities were interviewed to explore in-depth their personal experiences of teaching with FF/TV.

Data was collected from official Go8 websites regarding formal AD resources for lecturers to determine whether the training covered FF/TV use; and if it did, to understand the full context of the offered training. The search parameters included course titles, duration, targeted participants, delivery mode, optionality, topics covered, training outcomes and fees.

Access to relevant information differed among institutions, with no publicly accessible information about formal AD resources from Monash University, the University of Western Australia, and the University of Sydney.

Email enquiries were sent to Go8 training coordinators to confirm the actual coverage of each training event, and to staff from the Learning and Teaching (L&T) units of each university (that is, academic developers who oversee professional development for teaching staff) to ensure no relevant information was missed. After these follow-up emails, seven of the eight Go8 universities were included in the study.

With ethics approval, interview participants were recruited through newsletters of higher education networks, email invitations, flyers, and snowball sampling over approximately five months. Semi-structured interviews of 30-90 minutes were conducted one-on-one with 13 Go8 university lecturers from both HASS (sociology, education/research/language, technology, Asian/cultural studies, history, politics, film/media studies) and STEM disciplines (biology, gerontology, physics) who had used FF/TV in their teaching. Interviewed lecturers are referred to

by code (L1 to L13).

The interviews covered three aspects of the lecturers' experience of AD for teaching with FF/TV:

(1) experience with formal and informal AD related to FF/TV use in teaching;

(2) their perception of AD with regards to FF/TV;

(3) their recommendations towards future delivery of AD opportunities regarding FF/TV use in teaching.

8.3.1. Data analysis

Given the qualitative nature of the data, the validity and reliability of the research (or 'trustworthiness' – Lincoln & Guba, 1985) was ensured by several methods to enhance the stability of responses to multiple coders of data sets (Crestwell & Poth, 2013). These methods included triangulation of three data sources (the literature review, website analysis results and semi-structured interview results); long engagement with the interviewees; taking extensive, interactive and reflective field notes; and facilitating post-interview communication to enable the most accurate interpretation of the collected data. These sources of data were then imported into NVivo 12 and thematically analysed (Braun & Clarke, 2006) to generate codes and themes, which then informed the structure of the study.

8.4. Findings

Results suggested that formal AD resources related to video use in teaching were limited to only risk management (e.g., copyright, trigger warning) and video-making to accommodate online teaching needs. Interviewed lecturers perceived the absence of formal AD on pedagogical aspects of FF/TV use as due to a range of disciplinary, personal and institutional reasons. Filling the training space instead were peer interactions, online resources, and informal initiatives such as group exchange, curriculum revamp meetings and collaboration.

8.4.1. Formal AD about FF/TV use in teaching

No formal AD content offered by Go8 institutions appeared to cover pedagogical issues crucial to FF/TV use. They mostly focused on online teaching basics including video-making capabilities and risk-management awareness (i.e., copyright and trigger warnings).

Findings from website analysis and email correspondence showed no content that addressed the pedagogical aspects of using FF/TV in teaching. All 13 participants said 'No' when asked if they had attended any training provided by their Go8 institutions to develop their pedagogy using FF/TV. None of them were aware of any past, present, or future training being offered on the topic. L3 added:

> I think you'd probably find that most people never had any training whatsoever in [using film in teaching…] there's probably gaps in everyone's knowledge and understanding.

Other interviewees also recognised this focus on online teaching AD and the training gap related to video use in teaching:

> all they talked about was things like copyright […] and trigger alerts […] copyright is a risk, upsetting students is a risk, but nothing in terms of cinematography or dual coding. (L13)

> universities in general want to move towards bigger classes and more online content, and in some ways screen fits into that, but not the way we'd want to do it. We want people to have debates, to be present, to be interactive. (L11)

The website analysis found several workshops about making instructional videos and teaching technical skills (e.g., trimming clips, screen-capture or voiceover). This was confirmed by interviewees:

> the only [training] I know that is video-related at my university is some workshops that deal with how to create and edit video resources […] for online classes. (L7)

However, many of the workshop coordinators revealed that these workshops were not delivered regularly; in fact, several staff members had already left the institutions at the time of email correspondence, indicating the unreliable nature of training offerings. Such staffing challenges may also explain why some lecturers reported they had never received training about how to use

FF/TV in teaching, nor even heard of it. Instead, they claimed to be completely self-taught when they needed to make an instructional video 'to teach oral presentation skills' (L5) and that 'the process of creating [videos for MOOCs] forced me to read up on what makes a video good' (L9).

As a rule, most university libraries provided formal workshops about copyright and trigger warnings, and updated regulations and guidelines on these issues are available to varying degrees on all university websites. Institutional emphasis on risk management and potential penalties may have disincentivised lecturers from using videos in teaching:

> [copyright makes] staff cautious and those who want to use videos maybe don't because they don't want to be caught out doing the wrong thing. (L9)

> The last year or two is the first time I've had students saying 'I'm triggered by this' […] the drama does confront real issues, so how do we talk about that without showing those issues in some way? (L2)

Some lecturers found their own ways to cope with these issues, albeit often with solutions that were flawed. For example, some lecturers turned to Kanopy – a video streaming site that sells packages of films to public libraries and universities available by institutional subscription – to gain the legal right to show FF/TV content in class, but they faced limited availability. Others continued to rely on their own DVD collections, which made them susceptible to obsolescence. Those who used online streaming or downloading services did so at their own expense or risk. Alternatively, some resorted to assigning film-viewing as homework, giving up the pedagogical benefits of communal film-viewing, or even eschewing FF/TV use in teaching:

> I probably use [films] less than I used to […] I find it a bit difficult to keep on top of the latest copyright rules. (L12)

Regarding trigger warnings, some participants felt that it is as important as research ethics, some suspected it to enable academic dishonesty when students used the 'triggers' as an excuse to disengage, while some tried to search for 'sanitised' content.

8.4.2. Why isn't formal AD provided on pedagogical use of FF/TV?

When asked why pedagogical use of FF/TV wasn't taught, some participants replied 'I don't know' or 'I'm not sure'. Others speculated a range of reasons, including diverse disciplinary requirements, resistant academics, teaching-research conflict and assumed expertise.

Many participants mentioned disciplinary differences as the main obstacle to developing university-wide training for pedagogical use of FF/TV:

> People use films in quite different ways, depending on what they're teaching, so it would be hard to come up with a curriculum that suited everybody. (L1)

Others brought up the issue of disciplinary silos as another possible obstacle to cross-disciplinary provision of pedagogical training related to FF/TV, which argued that disciplinary differences are not irreconcilable and implementing institution-wide measures can promote more coherent learning experience for students:

> if disciplinary silos were broken down somehow then you can […] synchronise things better […] use the media as the meeting point across different departments […] students see it – they usually say things like, 'You sound just like that guy who teaches me in another area, have you ever met him?' (L13)

Besides disciplinary differences, different teaching beliefs also seemed to hinder the provision of formal university-wide training. Some lecturers noticed resistance from academics on the grounds that pop culture is 'frivolous', 'unserious', 'not actual teaching', or even detrimental to students (Marquis et al., 2020), and thus should be separated from education:

> There's still stigma around using popular culture […] a lot of literature […] has been critical of the danger of misperception and misrepresentation. (L10)

L13 interpreted this 'stigma' more as reluctance or fear of not knowing what to expect or how to navigate the fast-changing technologies and audience tastes (Houghton et al., 2015), which might also play into institutions not providing formal training in pedagogical use of FF/TV:

> Institutions aren't against it but you're always running against older academics who just hate screen and pop culture […] learning how to play the DVD player is one thing, but another thing is knowing what to bring in, or not, and what to do with what you bring in to communicate with a bunch of 19-year-olds in 2019 […] maybe the reluctance comes out of fear more than anything.

While some lecturers like L13 were specific about the 'others' that might need more training,

many demonstrated what Perloff (2002) called the 'third person effect' in vaguely pointing at other academics who lack FF/TV or general media competency in teaching:

> Oh *they* should have it, they need to have the knowledge and skills [….] I'm self-taught but *some people* might prefer a half-day session of workshop. (L2)
>
> lecturers should know about a range of materials so [training]'s important to *people* who don't know. (L5)
>
> if *someone* is teaching and looking for training, I recommend that they get some training on how to use media efficiently and effectively. (L1)

Actively learning to improve one's pedagogy appears challenging, especially when misaligned with institutional priorities reflected in the results of website analysis. Despite ongoing pressure on research-intensive universities to focus more on teaching quality (Brennan et al., 2019; Stensaker et al., 2017), individual lecturers seem to still be solely responsible for undertaking AD while prioritising research duties (Houghton et al., 2015; Mitten and Ross, 2018), which may explain why many resorted to doing only the 'bare-minimum' teaching:

> it's sad that teaching and research are pitted against each other. If you're smart, you'd realise that and try to make your teaching as least time-consuming as possible to focus on research. (L12)

The research-teaching tension has a significant effect on lecturers' attitude towards undertaking training. Research-intensive institutions appear willing to overlook academics' teaching skills if other desirable research outputs are met (Geschwind and Broström, 2015; Morling and Lee, 2019):

> The university's […] main rationale through which somebody's employed to teach is an expertise in content, which has arrived through a range of factors such as research […] not pedagogy. (L13)

This 'rationale' seems to encourage the perception that good researchers are automatically good teachers because they are experts in disciplinary knowledge (Deaker et al., 2016). For these reasons, L6 considered it unlikely that institutions would introduce formal AD about FF/TV use:

> The whole research-versus-teaching doesn't help; people are putting a lot of time into their research but [… not] their teaching. They don't perceive that they need to be taught how to teach,

> and of course [… not] how to teach film at all […] they're too time-poor for workshops, and they won't self-identify as needing help. (L6)

This may also explain why many participants spoke highly and confidently about their self-taught methods coupled with their 'teacher's intuition', 'antenna', 'gut feelings' or 'gifted teaching', rather than undertaking AD to directly address the requirements of teaching with FF/TV.

8.4.3. Informal AD initiatives around FF/TV use in teaching

Many lecturers reported a variety of informal AD including observation and conversation, online resources, group sharing and teaching collaboration. Echoing the works of Roxå and Mårtensson (2009, 2015) about the value of informal interactions in pedagogical advancements, many lecturers' were observing each other's practices and talking with their colleagues:

> I just sort of picked up from what I observed from other people's teaching in the department. (L10)

> obviously we talk with each other to find out what works best and what doesn't work very well. (L3)

> for any kind of practice to work, you got to start talking to one another. (L13)

Alongside offline approaches, self-taught methods also involve online resources such as taking online courses and learning from journal articles, online blogs, YouTube videos or social media

> I tend to fall back on journal articles for well thought-out methodologies and more cutting-edge technologies. (L3)

> I've read books, I've been online, I've looked at videos, I've seen blogs that talk about how to use film. (L2)

> Twitter feeds – Academics use Twitter feeds for [teaching suggestions]. (L8)

Some lecturers described their positive experience with exchanging ideas and practices among different academic communities by attending faculty forums about sharing teaching practices, attending academic conferences, brainstorming at curriculum revamp meetings and joining informal gatherings to discuss teaching with FF/TV:

> learning and teaching faculty forums: staff members who know about something will stand up and talk you through […] I would be interested if there was a group of people teaching with films who

> want to share notes. (L1)
>
> I've been to education conferences, so I've been exposed to some of the good practices around the use of videos. (L9)
>
> as a department-driven thing, we sat down and said, 'How do we shake things up?' […] then we said, OK so it's pop culture, screen content and activities […] it's asking questions […] to meet students halfway. (L13)

Some participants reported from first-hand experience that collaborating with others in course planning or teaching helped diversify and inspire good practices. 'Others' may be lecturers in and outside their discipline/department/faculty, teaching specialists or learning designers:

> [this degree] has only been up and running for a couple of years, so we're working closely with topic designers, which was fantastic […] also people different disciplines are […] coming in to teach it. (L10)
>
> It's only in the last couple of years when I started teaching courses together with [another lecturer] that I started using film clips again. (L4)

8.4.4. What AD would be useful?

No participants spoke against the necessity of providing formal training resources for lecturers to promote effective pedagogies. Recommendations for future support with FF/TV use revolved around provision of more useable resources, more flexible timings and more direct involvement.

When asked what aspects of FF/TV use in teaching could benefit from greater institutional support, lecturers tended not to raise pedagogical issues. Rather, they identified access to FF/TV materials for class screenings and compatible technologies and classroom facilities:

> At the whole-university level, let's have a bank of teaching film clips. We can get whatever academic article you like—why can't you get whatever film you like, seriously! (L8)

Although many interviewees pointed at 'others' when voicing opinions about training needs, several lecturers – from both sides of the senority spectrum – recognised the limitations in their own teaching, time availability and relevant training opportunities:

> there are many different teaching techniques and I want to diversify and develop mine further. So far, I have very little opportunity and time […] I signed up for a media-related workshop but couldn't come because of time clash. (L7)

> There's a technical side [to teaching with film] and a pedagogical side. I'm probably a little weak in both […] I like to use [film] but I could learn from [training…] sessions can be good, but maybe you can't attend, or not sure why you're going because you're not currently teaching it. You want to learn when the problem occurs. (L12)

Addressing the need of flexible AD delivery, many lecturers suggested that online platforms would be most convenient, and training content should be scaffolded into short, topical videos to efficiently cater to different levels of need and background knowledge:

> Online courses is probably the best flexible way to go […] keep it really short and punchy. (L3)

> Something like video tutorials about some software you can download [or demonstrating] a successful way [of using film], step by step. (L12)

> [Training] needs to be broken down in perhaps a sequentially hierarchical way. (L13)

Drawing from their experience, participants were interested in incorporating the topics of FF/TV use directly into the existing informal practices:

> one of those faculty forums […] that somebody talks to you about these things would probably be useful, particularly in giving you resources. (L1)

> maybe a blog where you list different approaches that you come across and the different learning styles that each approach encourages, or major problems. (L2)

Lecturers who had first-hand experience with collaborating with teaching specialists, learning designers or academic developers recommended more involvement of these staff:

> Teaching and Learning centre has learning designers working with lecturers to figure out how to integrate media and technology into teaching. We can approach those designers so that film can become one of the official media technologies that they consider. (L8)

L3 added that faculty-level meetings could be a good place to gain more involvement from lecturers, and academics in administrative positions to reach institution-level attention:

> you can pitch these things at faculty level panels, try to get more people involved, engage executive deans or the head of school to make a bit of a deal so it can happen. (L3)

8.5. Discussion and recommendations

There is a wealth of informally gained knowledge about FF/TV use in teaching and informal

initiatives have undeniable merits when facilitating pedagogical changes (Pleschová et al., 2021; Roxå and Mårtensson, 2009, 2015; Thomson et al., 2020). However, exclusively informal AD in multimodal teaching practices might not be as effective as formal AD that harnesses existing knowledge, and promotes more consistency, in teaching practice and consequently in student learning. Formal training may lift the burden of starting from scratch for lecturers new to multimodal teaching, or the intimidation of constantly updating self-taught methods for more experienced lecturers. Considering the value of formal training in enhancing educators' perceptions and attitudes towards various pedagogies (Chadha, 2015; Vilppu et al., 2019; Norton et al., 2010; Ödalen et al., 2019), adding formal layers to the practice may also help alleviate resistance from educators who view FF/TV use as frivolous (e.g., Marquis et al., 2020; Peacock et al., 2018; Sealey, 2008).

Participants identified several obstacles towards making desirable changes to AD about FF/TV use in teaching such as disciplinary differences and silos, tension between research and teaching, stigma around popular culture as not teaching-worthy, and assumed expertise about teaching by lecturers. Important lessons can be learned from these obstacles in order to make concrete first steps towards more inclusive, better-informed and better-supported pedagogies that include FF/TV. It is therefore crucial to clarify basic requirements and key considerations for future AD provision. Furthermore, most participants' immediate recommendations called for more resource provision, emphasising the fundamental importance of useable FF/TV content and compatible classroom technologies to developing effective pedagogies with FF/TV. This indicates the need for institutions to fulfil their responsibility of meeting these technological requirements.

Lecturers play many roles at their institutions, but within the context of AD, they are often learners. Our existing knowledge about student engagement indicates the importance of recognising the learners' background, needs and motivations – in this case, many tend to be time

poor, resistant to change, self-reliant and risk averse. Recommendations from participants indicate a desire to learn FF/TV teaching practice both through the convenience of self-paced online resources and also through face-to-face collaboration. A blend of formal and informal learning opportunities is also valued. Therefore, online AD resources available when needed, supported and contextualised in co-working or co-teaching spaces, are likely to offer an appealing pathway to AD.

Last but not least, in recent years, online teaching has gained more attention from universities to increase their student enrolment capacity, reinforced by advances in educational technologies and by the increase in remote learning amplified by COVID-19 (Martin et al., 2020). Although this heightens the need for skills in multimodal teaching, existing formal AD seems to mainly involve risk management issues (copyright, trigger warnings) and video-making. The focus on potential problems was found to cause an uneasy disposition in staff using FF/TV in their teaching, and in some cases, leading to counter-productive outcomes. A more productive approach might situate these concerns within broader discussions of the advantages of using FF/TV and effective pedagogies to do so.

Figure 8.1 outlines a structured and coordinated approach to the elements that need to be properly addressed to help lecturers succeed at integrating FF/TV into teaching. Four main areas are identified: access to FF/TV resources and relevant technologies; technological and media awareness and skills; film literacy (cinematography, film analysis, trigger warnings); and pedagogies with FF/TV. Together, these areas of concern cover the key challenges experienced by lecturers and offer the first steps towards a comprehensive program of academic development.

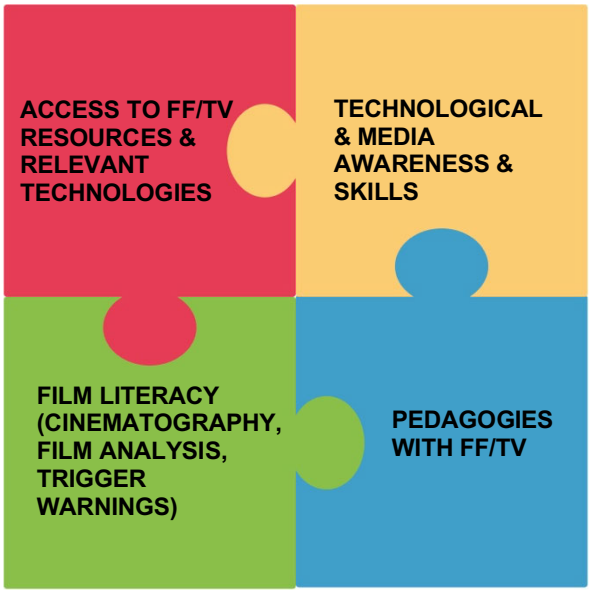

Figure 8.1. Four key aspects of requirements and considerations for lecturers in teaching with FF/TV

The first puzzle piece denotes the most requested provision from lecturers, which is more access to more diverse FF/TV resources and relevant technologies to deliver such FF/TV as part of their instruction. The goal is to enable lecturers to look for the optimal choice of FF/TV content, to screen FF/TV in class in ways that assist their instruction. Typically the access to FF/TV content should be provided via university library services while facilities should be implemented by universities upon careful consideration of lecturers' and students' needs across disciplines.

The second puzzle piece highlights the importance of technological and media awareness and skills often overlooked in the technology-based practice of FF/TV integration in teaching (see Chapter 9). The goal of AD in this space aims to keep lecturers updated on what technologies are available and legitimate or sponsored by the university to use, as well as training them on how to use these technologies effectively to enhance their teaching. Some options to develop AD towards these goals may include regularly scheduled formal workshops by library staff, professionally created online tutorial videos accessible via the university website, collaboration

opportunities with Learning and Teaching staff to co-design and teach courses that use FF/TV, or a combination of these options.

The third puzzle piece addresses another neglected characteristic of teaching with FF/TV, which is the interdisciplinary nature of the practice via fusing film/media studies and the discipline of the course in which FF/TV are used. Film literacy, or a working understanding of a film and its elements such as cinematography and film analysis skills ,is therefore necessary alongside disciplinary content knowledge. The goal of AD related to film literacy seeks to help lecturers understand how FF/TV achieve effects on viewers (as detailed in Chapter 7), to guide them to unpack and analysis FF/TV content for instructional design, and to inform them of rationale behind the legal requirements of trigger warnings. AD resources in this space should utilise the expertise of existing teaching staff in film and media studies at universities by inviting them to run regular informal forums about cinematography, film analysis, with occasional tips and recommedations on how to select and integrate FF/TV into teaching from their experience. Depending on the availability of film/media lecturers, such AD content can also be delivered through providing on university website professionally created online resources with glossaries, examples, step-by-step explanations and further readings. Collaboration with Learning and Teaching staff, teaching specialists, learning designers with film expertise is also highly recommended to help familiarise lectures with knowledge outside their disciplinary qualifications.

The fourth puzzle piece focuses on pedagogies with FF/TV, which draws on the outcomes of the previous three to inform lecturers of the merits and challenges of various teaching strategies and techniques that involve FF/TV in different teaching processes (e.g., FF/TV selection, FF/TV preparation, FF/TV screening methods) so that lecturers can identify the optimal approach for their teaching context. The development of AD resources here not only should integrate AD from the other areas, but should also apply learning and teaching theories related to the

pedagogical use of multimedia such as Dual Coding Theory, Cognitive Load Theory, Visual Literacy and Film Literacy to construct a more grounded understanding of the relationship between FF/TV and instructional design (see Chapter 10).

8.6. Conclusion

Major findings of this study regarding formal and informal AD practices for FF/TV use in teaching are consistent with the key issues identified in the literature and contain new insights that can be implemented in various teaching-learning contexts. To promote long-term advancement of FF/TV use in university pedagogies, future studies could harness existing practices and learning theories to enquire into the specific teaching strategies (Figure 8.1) and inform best practices. Ultimately, every step taken in the process should aim at raising academics' awareness and confidence in integrating FF/TV representations into disciplinary teaching at universities.

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CHAPTER 9

TECHNOLOGICAL REQUIREMENTS FOR FF/TV INTEGRATION

Statement of Authorship

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Overall percentage (%)	80%		
Certification	This paper reports on original research I conducted during the period of my Higher Degree by Research candidature and is not subject to any obligations or contractual agreements with a third party that would constrain its inclusion in this thesis.		
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i. the candidate's stated contribution to the publication is accurate (as detailed above);
ii. permission is granted for the candidate in include the publication in the thesis; and
iii. the sum of all co-author contributions is equal to 100% less the candidate's stated contribution.

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Contribution to the Paper	Helped evaluate and edit the manuscript.		
Signature		Date	05.10.2022

The Role of Technological Knowledge in Pedagogical Integration of Film in Disciplinary Teaching at Universities

Many university lecturers have integrated feature films and television series (FF/TV) into their lessons to improve student engagement. Although film in teaching might seem like a well-established practice, it is reliant on a range of fast-changing technologies to effectively integrate FF/TV into instruction, learning activities and assessments. This study utilises the Technological Pedagogical And Content Knowledge (TPACK) model to analyse survey and interview data regarding (1) lecturers' familiarity with a range of concepts and skills related to film production, delivery and integration technologies; (2) their methods of learning about technologies that help optimise their FF/TV use; and (3) their institution's provision and support in implementing various technologies integral to teaching with FF/TV. A modified framework is proposed to add to the pedagogical benefits of effective teaching with FF/TV at universities.

Keywords: film in teaching; multimedia; pedagogy; TPACK; technological knowledge

9.1. Introduction

Film has a long history of use in education. In the 1920s Thomas Edison declared that film would take the place of books, making them obsolete (The Associated Press, 1923). While the demise of the book did not occur exactly as predicted, the modern era appears to justify this with YouTube

videos playing a significant role in education (Fyfield, 2021). These are usually short clips used to communicate facts or for demonstration purposes. Integrating full-length feature films or television series (FF/TV) into lessons creates a more challenging space, and although university lecturers have introduced multimodal practices to improve student engagement with their teaching (Bonsignori, 2018; Djamàa, 2018; Lim & Tan, 2018), there has been little research focused on the technologies that enable this multimodal teaching practice. FF/TV has often been an appealing instructional resource for educators across disciplines – such as history (Donnelly, 2014), languages (Viebrock, 2016), psychology (Bluestone, 2000), math (Beltrán-Pellicer et al., 2018), politics (Holland, 2014), and medicine (Recupero et al., 2021). Our paper aims to show how this rich and cross-disciplinary body of research informs understandings of how FF/TV can achieve positive learning outcomes by expanding disciplinary content knowledge. We draw on surveys and interviews with university lecturers to investigate their use of FF/TV in the classroom and map their responses to Koehler & Mishra's 'Technological Pedagogical And Content Knowledge', or TPACK, model (2006) that proposes the need for multiple domains of 'knowledge 'for effective teaching. In other words, we seek to uncover the technological and pedagogical relationships between FF/TV and intended learning outcomes.

In the contemporary context of the 'digital university' where intersecting new technologies shape the landscape of university teaching and learning (Peters & Jandrić, 2018), lecturers are increasingly expected to innovate and mediatise their pedagogies to showcase a contemporary 'new communication order' or literacy (Snyder, 2011), and to draw on the high consumption of mixed media by many student populations (Fraser, 2018; Mayes et al., 2011). Institutions, therefore, are increasingly obligated to provide academic development for lecturers in the domain of integrating media technologies into teaching (Altbach et al., 2019).

However, there appears to be a mismatch in how universities and academics respond to

these trends. On the one hand, universities seem more interested in risk management such as copyright infringements and academic dishonesty (Buckley & Cowap, 2013; Sagnak & Baran, 2020), rather than developing the pedagogies integral to media technologies. Universities' support provisions have been slow in addressing the educational and social implications of incorporating media technologies in teaching (Goodfellow & Lea, 2013). Instead of investing in long-term sustainable training opportunities and resources to lift the digital competencies of lecturers, universities tend to address this need by employing casual and 'third space professionals' in short-term roles (Smith & Guthrie, 2020; Whitchurch, 2015). Many academics appear reluctant to learn to use new teaching tools, especially without institutional commitment and support (Birch & Burnett, 2009; Sánchez-Prieto et al., 2019; Veletsianos et al., 2013). Others who welcome the tech-driven changes by integrating multimedia such as FF/TV into their teaching have been largely left to themselves to experiment and develop their pedagogy via self-taught methods (Chadha, 2020; Hemmings et al., 2010). Amid all these trends, FF/TV have emerged as popular modes for practising technology-enhanced teaching thanks to their relevant and relatable, multimodal, interdisciplinary, and technologically accessible characteristics (Andrist et al., 2014; Holland, 2014; Marquis et al., 2020).

On the flip side of FF/TV's versatility and interdisciplinarity is the challenge of systematically sharing and organising relevant knowledge about teaching with FF/TV, as each discipline would likely present different pedagogical needs and encounter different technical issues and problems (Beltrán-Pellicer et al., 2018). It is not surprising then that most literature on the topic portrays FF/TV use in university teaching as largely individual-driven, experiment-based, improvised and self-assessed, with minimal guidance and support from institutions (Andrist et al., 2014; Marquis et al., 2020; Peacock et al., 2018).

While film can be used at any level of education, this study sets out to better understand

the extent to which university lecturers were aware of and supported in using the technologies that enable their pedagogical use of FF/TV. The results of survey and interview findings were then viewed through the lens of Koehler & Mishra's TPACK model (2006) (Figure 9.1).

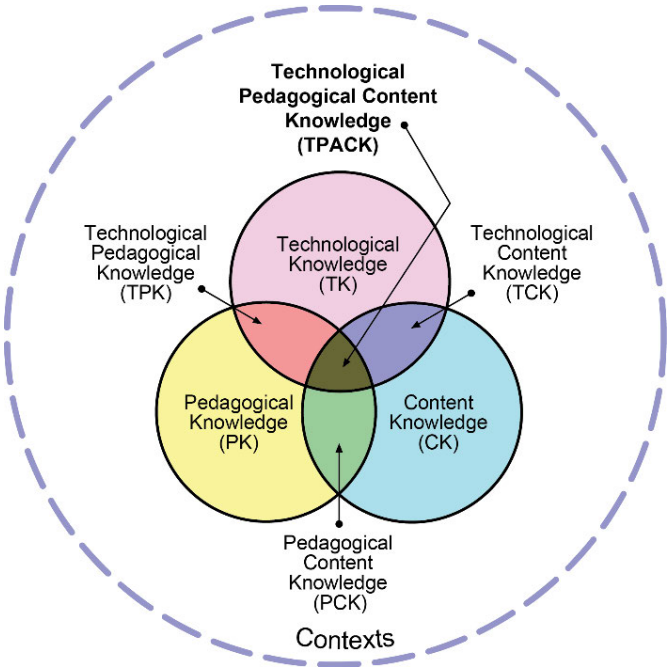

Figure 9.1. The TPACK model, ©tpack.org

Koehler & Mishra's TPACK model recognises technological knowledge (TK), pedagogical knowledge (PK), and content knowledge (CK) as three basic forms of knowledge that educators require for effective teaching, regardless of discipline. TPACK also emphasises the intersections among the knowledge forms (Figure 1), which cover interactions between technologies and content (TCK), knowledge about teaching approaches and disciplinary content (PCK) and awareness that technology can enable or restrain teaching practices (TPK). TPACK therefore offers a way for educators to identify their own strengths and potential blind spots when using technologies in the classroom (Koehler et al., 2014; Koh, 2019; Saubern et al., 2020). That is, the model's three entry points contain a structural weakness (Koehler et al., 2014). If one approaches TPACK via PCK, the role of technology is obscured. If one approaches TPACK via TPK, the importance of content knowledge risks being sidelined. If one approaches TPACK via TCK, pedagogical considerations are

distanced. These blind spots will vary depending on a lecturer's existing strengths and therefore entry pathways.

The TPACK model is particularly useful in discussing how FF/TV intersect with CK, PK, TK and their overlapping segments. By incorporating this study's findings into the TPACK model, we identify film production technologies (FPT), film delivery technologies (FDT) and film integration technologies (FIT) as relevant elements for developing a pedagogy of effective FF/TV teaching in the classroom. Thus, we present a modified framework that captures the importance of technological training to optimise this pedagogy.

Understanding the nature of FPT, FDT and FIT, and how educators understand and employ them in the classroom, is key to the effective pedagogical application of FF/TV. Ascertaining the current levels of access, familiarity and skills that university lecturers possess in these areas will guide the types of institutional support and development needed in applying FF/TV to pedagogically sound, discipline-based teaching.

9.2. Methods

With ethics approval, a qualitative survey was created using SurveyMonkey and distributed to university lecturers across Australia. Questions were based on an extensive literature review of academic articles about teaching practices involving FF/TV (Bonsignori, 2018; Marquis et al., 2020; Swimelar, 2003) and analysis of FF/TV content (Thaler, 2017; Viebrock, 2016; Wang et al., 2019; Wang & Ji, 2015). The survey was checked for face validity by four experienced researchers, two of whom were experts in film and media studies. The themes from the survey results became the foundation for follow-up semi-structured interviews.

The questions explored:

- familiarity with technologies involved in teaching with FF/TV;
- challenges encountered when using FF/TV in teaching; and

- institutional support in implementing and using those technologies.

A follow-up series of 90-minute interviews was then instigated to explore issues in depth. Participants for the survey were a convenience sample of lecturers from any discipline and were recruited via newsletters of higher education networks, email invitations, flyers and snowball sampling. Participants in the survey were invited to be part of follow-up interviews.

NVivo12 was used to identify themes and conduct thematic analysis (Braun & Clarke, 2006, 2021) of the survey and interview data. All potentially identifiable information was removed in the metadata. To distinguish participants, R1 to R50 will be used when quoting survey respondents and L1 to L18 when quoting lecturers who were interviewed. The survey results were analysed thematically with two other researchers checking the themes for consistency and accuracy.

9.3. Results

The survey yielded 50 anonymous responses and 18 interviews were conducted. Interviewees came from a mixture of HASS and STEM disciplines, including sociology, education, language teaching, politics, history, physics, biology, and gerontology.

Most respondents to the survey were permanent lecturers (68%), followed by casual teaching staff (12%) and 1-3 year fixed-term contractors (10%). The majority had between five to more than ten years of teaching experience (90%), and had taught courses using FF/TV more than five times (72%). Figure 9.2 presents the disciplines where respondents used FF/TV in their teaching. Some lecturers taught and used FF/TV in several disciplines, so the total number of disciplines exceeds 50.

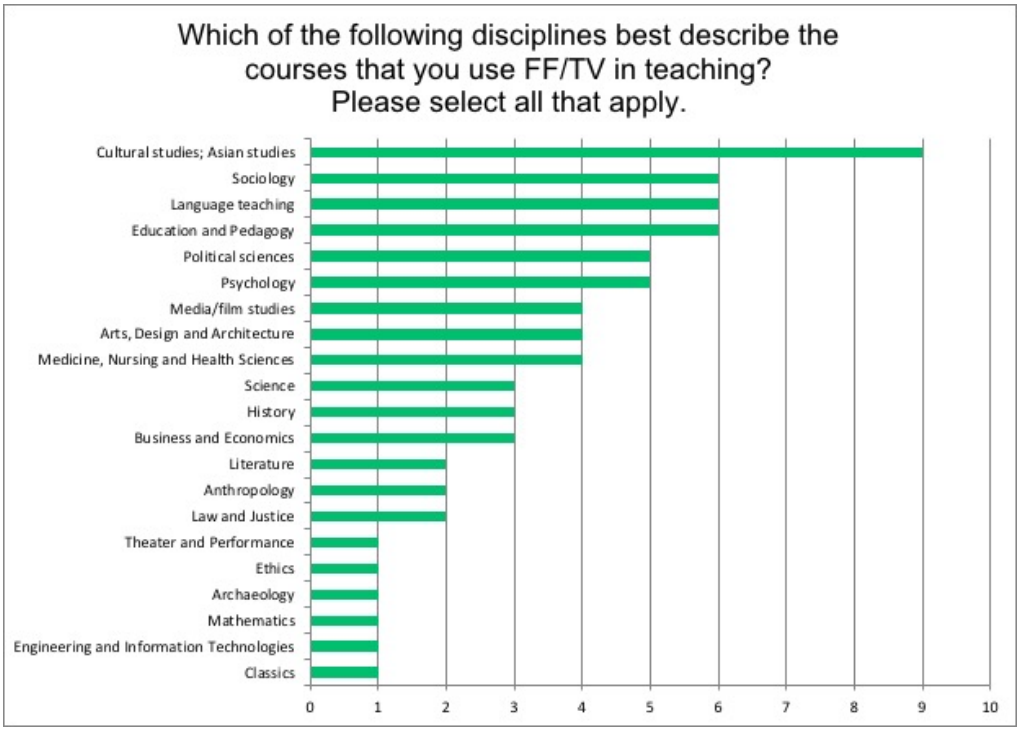

Figure 9.2. Academic disciplines where survey respondents used FF/TV in their teaching

The results identified three types of technologies that are involved in the pedagogical use of FF/TV in disciplinary teaching at universities:

- technologies relating to film production (FPT)
- technologies relating to film delivery (FDT)
- technologies related to film integration into teaching materials (FIT).

Survey results and interview results are interleaved around how blind spots in TK about each technology type influence teaching and learning related to FF/TV (Themes 1- 3), and how these blind spots can be overcome by applying TPACK (Theme 4).

9.3.1. Theme 1: Blind spots in knowledge about Film Production Technologies (FPTs)

A scaling survey question directly targeted lecturers' familiarity with a range of basic concepts about cinematography and film grammar (i.e., the conventions that regulate cinematic techniques) such as auteur, flashback/flash-forward, story plot, scene sequence, etc. These

concepts, and the knowledge they entail, are crucial to film analysis skills required to integrate any FF/TV content into disciplinary teaching (CK) and to inform lectureers' decisions about instructional design (PK). Knowledge of FPTs is also evidently necessary in cases where film or video production is part of the course's content or assessment.

Among the 46 survey respondents that indicated their disciplinary expertise (that is, their CK) was not film-related, 22 admitted that they were either *not aware of* or only *a little familiar* with'basic concepts of cinematography and film grammar; another seven knew a *little* about the narrative structure of film and television (i.e., introduction – conflict – resolution). This lack of awareness or knowledge about FPTs may relate to the results that 18 survey respondents (81% of those 22 who claimed limited awareness) reported encountering no problems with using FF/TV in teaching, which suggests that blind spots in TK might have affected their pedagogical decisions in instructional design, as well as their judgement regarding the effectiveness of their FF/TV.

Similarly, among ten interviewees (56%) who initially reported 'no problem' with their use of FF/TV, seven corrected their statements to 'Yes' but only after hearing about some examples of problems. One interviewee even confessed to possibly not noticing problems because they had used only short movie trailers in teaching.

Further confirming the detrimental effect of blind spots in TK about FPTs on pedagogical decisions, two survey respondents explained they used FF/TV as 'good fillers', which unfortunately does not add value to student learning and has been identified as potentially detrimental to learning (Hobbs, 2006).

Likewise, a few interviewees revealed their selection criteria of FF/TV as simply a 'nice story' with 'a happy ending' to make students feel good about studying. The most detrimental FF/TV selections, however, involve those with factually false or over-fabricated FF/TV representations. Many lecturers reported selecting them so that they could dismantle FF/TV's

inaccuracies through their teaching and encourage students' critical thinking and media literacy. However, these attempts appeared vain:

> for several years I showed [a film], then I spent the course demolishing its claims […] but when I asked [students] in quizzes, that crappy black and white thing we showed in Week 1, for many students, remained the more powerful image even after 3 months doing my course. (L5)

> I [use] films that contain different voices […] and explain to [students] how they're not actually telling one story although it's presented as one story […] but when I asked them in assignments about those films, they'd totally take it as 'Oh this is the truth'. (L1)

> I've been very unsuccessful at dispelling this film […] I think the techniques that go with the use of film matter most – I didn't have outside speakers, interesting exercises or a whole semester to dispel it. (L17)

These cases clearly showed sub-optimal judgement in their instructional design (or even limited PK) due to blind spots in their TK about FPTs, despite their disciplinary expertise (CK).

Conversely, TK about FPTs alone is not necessarily the solution. When asked if she provided any guidance for students about what to look for during film viewing, L6 – who was teaching film production and had hands-on experience with filmmaking technologies – reported facilitating discussion afterwards, but not priming students with instructions or guiding questions beforehand:

> I guess [after film-viewing] we'll have a discussion about what [students]'ve seen, but that is a good point. I guess if I want them to specifically look at something I could tell them first. (L6)

This emphasises the importance of integrating TK (about FPTs) with PK and CK to achieve the optimal effectiveness of FF/TV use in disciplinary teaching.

9.3.2. Theme 2: Blind spots in knowledge about Film Delivery Technologies (FDTs)

Survey and interview data related to Film Delivery Technologies (FDTs) pointed to some problematic issues regarding both lecturers' and institutions' perception of technical issues, technological implementations and the subsequent provision of IT support as well as classroom facilities and FF/TV resources.

9.3.2.1. Perception of technical issues and IT support

Technical issues were pervasive in lecturers' reported experiences that hampered the pedagogical application of FF/TV in disciplinary teaching. Responding to the question 'What kind of problems have you encountered?', sixteen respondents selected survey options related to pedagogy, while eighteen other respondents chose 'Other' to describe their own problems. Among them, eleven wrote 'technical issues' with no further comments, perhaps implying their problems were without pedagogical implications. Only seven explained what the 'other' problems were; of these, five also involved one or more specific technical issues: 'lack of reliable IT support for specific software' (R40); 'films projected in the incorrect aspect ratio' (R28); 'DVDs that don't work' (R8); and 'Internet connection issues' (R20). Another interviewee explained:

> I used to [embed] a video on PPT slide, but I realised that, depending on the lecture room computer expectations, the implanted video in PPT does not play. (R17)

When asked about challenges in using FF/TV, several interviewees immediately brought up technical issues, but they quickly trivialised them:

> There are of course always technical issues. Things can fail, but you can't avoid that. (L8)

> When asked about solutions to the problems they encountered with FF/TV use, 60% of survey respondents wrote their answers in the 'Other' textbox. A majority of these answers mentioned technical support related to delivery technologies: 'Get IT help' (R38, R41); 'Better tech support' (R43); 'Have technical support staff available' (R20); 'Teach institutions how to set up better screening rooms' (R11).

In contrast, L13 and L18 recognised the connection between these technical issues with the quality of teaching and learning with FF/TV, that is, the intersection of TPK. They reported rarely encountering problems with technology, yet discussed at length the technological domain of their practices. Both lecturers had extensive experience working with media technologies, including film, both in and outside teaching jobs, which motivated them to learn about their tools and stay pro-active and pre-emptive – rather than reactive – when dealing with technical issues. They

therefore took it upon themselves to investigate potential problems and put in place preventive measures, or find practical alternatives to mitigate their impact on teaching and learning:

> the changes in technology have made it easier to [use film in teaching] with the advent of terrific software like Keynote […] it does it much better than PowerPoint in terms of quality and ease of dropping in and embedding film clips, so that's been my practice for 15-16 years. (L13)

> If your access to a video material is digital […] it's very hard to predict what might go wrong […] but all the students that I teach here have [the same device] and it works beautifully for all sorts of online video content with retina display. I actually didn't have any kind of technical problems, which can be the case in a bring-your-own-device setting. (L18)

In general, lecturers seemed dismissive towards technical issues because of an insufficient awareness of how those these issues are connected to the effectiveness of their FF/TV use as explained by L13 and L18. This superficial understanding of technical issues associated with FDTs is also reflected in their insistence on IT support, rather than academic development that integrates technical and pedagogical issues. This subsequently indicates a blind spot in the relationship between TPK and TCK for lecturers.

9.3.2.2. Miscommunication in facilities and resources provision

Many interviewees reported multiple challenges to their FF/TV due to institutional provision of facilities, resources and IT support related to Film Delivery Technologies (FDTs). One survey respondent stated they had problems with a 'mismatch between available resources and provided classroom facilities, technological change/advancement' (R40). Likewise, several interviewees reported their universities' (decision to phase out DVD-compatible facilities without providing sufficient assistance to the large population of lecturers who still relied on their DVD collection:

> Four or five years ago, the university suddenly took out all the DVD-playing capacity in lecture theatres across the university in one summer. My whole DVD collection became redundant. Many [films] were not available on YouTube or other public outlets, so I've actually used a lot less film because I haven't had time to find alternatives in many cases. (L5)

Several interviewees were also critical of institution-wide removal or suspension of on-campus screening facilities, which consequently excised the benefits of film-viewing for students:

> Back in the day the department used to run film sessions of very rare films so I used to bring the class to them every now and again, but they don't do that anymore. (L10)

Overall, institutional understanding of technology-related issues appeared isolated from the pedagogical practices that utilise those technologies, leading to miscommunication and ineffective investment in facility, resource and training provisions.

Besides the withdrawal of facilities/services provision, four of the interviewed lecturers (L3, L5, L8, L10) also reported that their universities failed to provide sufficient support to help lecturers transition into newer film delivery technologies. This was particularly noticeable when it came to sourcing compatible and permitted FF/TV content from sources such as streaming platforms or programs recorded from broadcast TV. Instead, they felt that institutions seemed more concerned with risk management (copyright, trigger warnings) and budget saving. Copyright training remains one of the few areas connected to using FF/TV in teaching where most universities offer both training workshops and online guidelines. Nonetheless, 12 survey respondents (40% of those who reported problems), as well as 5 interviewees, still considered copyright a major barrier because it manifests fear around the legality of use, rather than informing or benefiting their teaching:

> I probably use [film] less than I used to. We're in a different environment with copyright […] now we record everything […] frankly I find it a bit difficult to keep on top of the latest rules. (L17)

> The copyright arrangement around downloads means that I can't use downloads, so as downloads become the dominant technology I'm going to have more problems. (L8)

Some lecturers even went outside the institutional system to obtain a copy of the FF/TV they needed, which was counter to the copyright training they had received:

> I typically have clear ideas about the films that I want to show, sometimes the library might not [have them…] I'll order things online for my personal collection. (L14)

> the university […] is not putting its resources in that particular way […] if I really want to use a film, I might buy the film and have it imported from overseas. (L3)

Apart from DVDs and downloads, as noted, copyright is also linked to the availability of FF/TV resources on subscription streaming platforms such as Kanopy, a video-streaming service that provides feature films and documentaries to public libraries and universities. At first, this seems a solution to screening copyrighted materials in class, but long-term users of the service point out its very limited range:

> [Kanopy] got the rights on their platform so it's OK for me to record […] but their feature films are mostly just romance stories […] lots of the ones I used to use, the library['s Kanopy subscription] hasn't got them anymore. (L1)

> The library and Kanopy had a lot of trouble getting copyrighted access to Chinese movies […] unfortunately copyright means that some of the Chinese movies that I wanted to use disappeared from YouTube […] copyright has become a real problem for us teachers. (L5)

While many participants mentioned the need for access to more FF/TV content that met copyright regulations, only R25 and L10 specifically placed the responsibility onto their institutions:

> Lobby library to purchase online streaming rights for films and maintain subscriptions. (R25)

> At the university whole level, let's have a bank of film resources […] we can get whatever academic article you like, why can't you get whatever film you like? Seriously! (L10)

Many interviewees expressed little hope for institutions to step up anytime soon due to severe budget constraints, since worsened by the COVID-19 pandemic. In the meantime, their go-to sources included No School Film; Alexander Street; Australian Screen; Metro Magazine; Australian Teachers of Media (ATOM); Twitter hashtags; IMDb/ other film rating sites, subscription to film studios; online blogs; academic papers; conference presentations; and recommendations from colleagues, students, friends.

There is a major issue of miscommunication at play here between universities and their

lecturers; the data also highlights universities' misunderstanding of the relationship between provision and usage of FDTs and its subsequent effects on teaching. This failure of understanding resonates with concerns that universities traditionally tend to impose top-down technological implementations without carefully considering how they affect the actual users of these technologies (i.e., lecturers and students) (Reyes et al., 2017). In the case of FF/TV, both the miscommunication and the 'mismatch in supply and demand' regarding FDTs indicate a serious blind spot of TK on the institutions' part.

9.3.3. Theme 3: Blind spots in knowledge about Film Integration Technologies (FITs)

The term 'film integration technologies' refers to software applications that allow FF/TV to be incorporated into teaching and learning activities. Typically, they involve video editing (trimming, montaging, separating sound and visual), public presentation (traditional and interactive), student response systems (e.g., live online discussions or polls), or built-in functions of online learning management systems. Unlike delivery technologies, FITs tend to be developed outside the context of FF/TV and therefore require lecturers to explore how they can be appropriated for teaching. This study found mixed approaches used by lecturers to integrate FF/TV into their teaching practices. Lecturers also varied in their attempts to learn about FITs to improve their pedagogies with FF/TV (their TPK), ranging from reluctance to take the initiative in learning something new, through tentative trials, to enthusiastic pro-active experimentation.

A sense of reluctance to engage with FITs emanated from interviewees who seemed to have experienced long-term dissatisfaction with very limited institutional support (Heffernan & Heffernan, 2019) alongside their demanding academic roles. The lecturers seemed aware of the consequences the lack of institutional support had on their student learning as well:

> I've been quite annoyed that the university made decisions about technology without any consultation, so I didn't want to spend to spend the time learning how to use [the new

> apps], that's the short answer. [Learning]'s possible but I personally find it one straw too many for the camel […] the last time I tried […] it drove me nuts […] so I don't do it. (L5)

> Mostly I show the trailer because I never figured out how to do a proper excerpt, so I don't really probably do a great job with integrating the film honestly. That would be a weakness. (L17)

When asked if they used any additional technologies to assist integrating FF/TV into teaching, only 14 out of 50 (28%) survey respondents answered 'Yes', and a few specified the computer software applications they used (PowerPoint, Kanopy, iMovie). Furthermore, nearly 40% of survey respondents identified 'time-consuming to prepare/plan lectures' as a major obstacle to using FF/TV in teaching. It became clear that this was exacerbated by the large number of technological tools available. However, most interviewees only shared brief and general descriptions of what they tended to do with FF/TV for teaching (e.g., trimming, embedding, taking screenshots of scenes) depending on their teaching goals (emotional engagement, illustration, skill training, model for filmmaking), and did not go into the specifics of the tools they used.

Only L13 and L18 confidently and comprehensively described how they integrated various computer software, learning models and theories in their FF/TV pedagogies. They brought up a wider range of technical applications and software, including Adobe Premiere, Hudl, DVD Shrink, DVD Ripper Pro, MPEG Cut, Collaborate, and Keynote that serve different purposes throughout various stages of FF/TV-inclusive lecture planning, and showed a clear understanding of the impacts of effective TPK.

9.3.4. Theme 4: Overcoming TK blind spots via TPACK

There is a crucial distinction between technical support services (delivery-focused) and support from Learning and Teaching staff who could advise on film integration technologies. R40 suggested that future technology services need to contextualise technologies (TK) within pedagogical concerns of lecturers (PK) when teaching their disciplinary courses (CK), which emaphasises the idea of TPACK. To this end, collaboration between lecturers and other specialists

might be a good solution:

> Universities need to up their game so as to help lecturers become more adept and updated on teaching technologies. Lecturers need to reach out for help from learning design centres, ideally collaborate with a teaching specialist or learning designer to integrate disciplinary and pedagogical knowledge. Expand networks, be willing to learn new things. (R40)

Several interviewees advocated this view, sharing their positive experiences of collaborating with learning designers:

> it's only in the last couple of years when I started teaching with [a colleague] and [a learning designer] from the Learning Enhancement and Innovation centre that I started using film again, also some new apps like Mentimeter in my tutorials […] last time I tried activating the online discussion board myself, it drove me nuts. (L5)

> Teaching and Learning centre has learning designers working with lecturers to figure out how to integrate media and technology into teaching. We can approach those designers so that film can become one of the official media technologies that they consider. (L8)

While appreciating the various informal initiatives around teaching with FF/TV operating in their departments/faculties, several participants were interested in the idea of formal training. They suggested that training resources should be available online 24/7 as tutorial videos or brief step-by-step instructions on relevant topics which could be further scaffolded into different levels. The topics are three-fold: (1) TK-related issues (e.g., copyright, software introduction and download, video usage); PK-related issues (e.g., presentational strategies and general teaching tips); and (3) CK-related issues (e.g., FF/TV content recommendations). Similar to the collaboration idea, these recommendations highlight the need to integrate TK, PK and CK in developing resources for lecturers regarding FF/TV use:

> step-by-step online tutorials […] some software you can download […] some film recommendations for your topic […] a 20-minute tutorial or whatever on teaching tips on how you might use this stuff, so that late at night you could click onto and maybe learn something. (L17)

> [Training] needs to be scaffolded […] like beginner's or entry level pedagogy, and then more advanced, and then expert pedagogy. (L18)

Standardisation of devices was mentioned as a way of supporting staff and students. L18 attested to testing technologies with their own class to 'quickly bring user experience problems (tech issues) to the surface' and 'help educators experience how well (or not) their use of media and technology suits their pedagogy or discipline'. If lecturers and students use the same model of electronic devices, it becomes easier to develop effective TK. While such standardisation of equipment is costly in the short term, it likely mitigates the risk of the technical issues that occur in a 'bring-your-own-device' setting, thus reducing support issues.

Table 9.1 summarises the key findings of this study and its themes by firstly identifying the functions of each theme, followed by a list of the common barriers faced by lecturers in relation to each theme. Finally, it lists some recommended solutions identified by participants to some of the issues raised in this study.

Table 9.1. Overview of FPT, FDT and FIT within the context of teaching with FF/TV

	FUNCTIONS	COMMON BARRIERS	RECOMMENDED SOLUTIONS
Film production technologies (FPT)	• Guide lecturers in analysing, assessing and choosing FF/TV content for teaching • Enable lecturers to teach students how to critically learn through FF/TV	• TCK identified as a common blind spot for lecturers without a background in film/media studies • Lacking coverage of FPT in disciplinary expertise outside film/media studies, in teacher training and university induction • Lacking formal recognition of FF/TV as instructional materials • Disciplinary silos limiting lecturers' sharing of practices	• Regular workshops/seminars coordinated by lecturers in film/media studies and/or academic developers with an expertise in cinematography • A teaching-focused and scaffolded online resource with glossaries, terms, definitions, examples and further readings on cinematography (e.g., Yale Film Analysis Website)
Film delivery technologies (FDT)	• Source legitimate FF/TV content • Screen or share prepared FF/TV (clips or entirety) to students during class	• Lacking formal recognition of FF/TV as instructional materials • Technological provision/updates isolated from teaching practices • Lacking effective communication channels between lecturers and institutions • Lacking integrated tech support and film integration support services	• Functional classroom film delivery facilities (e.g., fast and secure Internet connection, built-in DVD player, working sound systems, projector, screens) • Functional online videotelephony software platform (e.g., Zoom, Microsoft Teams, Skype) • Ready access to physical copies of FF/TV (DVD), digital copies (downloads), and/or streaming sites with diverse and copyrighted materials (e.g., Kanopy) • Available funding for lecturers to request library purchase of new FF/TV

Film integration technologies (FIT)	• Edit FF/TV content towards achieving learning outcomes and student engagement • Embed the edited FF/TV content into the broader lecture/lesson plan to create multimodal learning design	• Similar barriers with using FDT • TPK identified as a common blind spot for lecturers using FF/TV in teaching • Fast-changing computer software applications and devices making it challenging to keep up	• Available software applications (e.g., iMovie, Hudl) featuring editing features (e.g., trimming, visual-sound spliting, embedding clips) on • Tools within learning management systems (e.g., H5P) to integrate FF/TV into assessments • Compatible presentation software applications (e.g., PowerPoint, Keynote)
Technological support		• Training • Technological and pedagogical support • Standardisation of devices	• An online, scaffolded and self-paced formal training course to deepen understanding of cinematography • An online resource that includes short tutorial videos or step-by-step instructions on how to use available technologies • Standardisation of electronic devices used by lecturers and students • Integrated technology support services (IT support, L&T centre) via collaboration (co-design, co-teach)

9.4. Discussion and recommendations

This study looked at survey and interview responses from academics and identified four key themes: film production technologies (FPT), film delivery technologies (FDT) and film integration technologies (FIT) as relevant elements for developing a pedagogy of effective FF/TV teaching in the classroom. It also identified areas related to the TPACK model that need to be addressed in order to develop a holistic approach to the use of FF/TV in higher education.

For universities to maximise the effectiveness of multimedia technology-enhanced learning, all stakeholders (lecturers, IT staff, learning designers and administrative managers) need to contribute to decision-making regarding available technologies. In this study, those who did engage in collaborations with IT staff or learning designers highly recommended this for others. This emphasises that lecturers are not just users of the media; they are designers of multimodal educational 'products' (i.e., lectures, seminars or tutorials) that include FF/TV representations. This requires a diverse skillset that includes a working knowledge of

- Film Production Technologies (i.e., cinematography) to select suitable FF/TV content and assist students in film analysis;
- Film Integration Technologies in video trimming, editing and embedding for learning activities and assessments; and
- Film Delivery Technologies to make decisions on film screening techniques that suit their teaching contexts.

Much as lecturers need this three-fold TK of FPTs, FITs and FDTs to effectively navigate FF/TV in disciplinary teaching, they cannot acquire it in isolation from PK and CK. At the same time, institutions cannot effectively support such acquisition without considering

lecturers' and students' needs when providing facilities and resources.

Unfortunately, survey and interview responses in this study show that lecturers who integrate FF/TV into their teaching typically are not sufficiently aware of the complexities behind FPTs, the nuanced relationship between technical issues related to FDTs and the effectiveness of FF/TV use, as well as the importance of staying updated about FITs that increasingly enable FF/TV integrating in teaching. The findings also show that most disciplinary expertise, teacher training and university academic development courses do not cover these skills. Echoing the institutional approaches to TPACK that prioritise Technological Knowledge over the other elements (Benson & Ward, 2013; Stover & Veres, 2013) and universities' tendency to impose top-down technological implementation (Reyes et al., 2017), many participants in this study reported disruptive changes made to FDTs by universities, which resulted from institutions' understanding of technology in isolation from teaching and learning.

Studies have shown that it can be very challenging for lecturers to develop their understanding and competence in technology-enhanced teaching without proper guidance and assistance (Heffernan & Heffernan, 2019; Rennert-Ariev, 2008). In this study, lecturers recognise they would benefit greatly from more coordinated support to learn about the complex pedagogies involving FF/TV. Once properly equipped with the necessary skillset, lecturers can become more capable of troubleshooting when problems arise (especially valuable in blended or remote learning environments), and may become more confident in facilitating more advanced, creative collaborations with students.

To facilitate a holistic understanding of the three-fold TK in teaching with FF/TV and subsequent decision-making by lecturers and institutions, we propose a

framework that articulates how understanding of all three film-related technologies (production, delivery and integration) helps improve their appreciation of the inter-related nature of technological, pedagogical and content domains of knowledge (Figure 9.3). This figure combines the findings of this study and its three film-related technologies with the TPACK framework to illustrate how the findings are supported by theory. Learning how to use film delivery technologies (FDT), for instance, boosts lecturers' general TK by exposing them to different methods of sourcing media content and screening them for teaching using the available classroom facilities available to them. Learning how to utilise film production technologies (FPT) integrates TK and CK (developing TCK), as lecturers need a working knowledge of cinematography to critically analyse and assess FF/TV's suitability for disciplinary teaching. Finally, learning how to use film integration technologies (FIT) meaningfully combines TK and PK (developing TPK), as lecturers can better optimise student learning by understanding the technological tools that can enable the effective integration of FF/TV content into learning activities and assessments. The need for institutional support sits in an overarching role for this model to be effectively maintained.

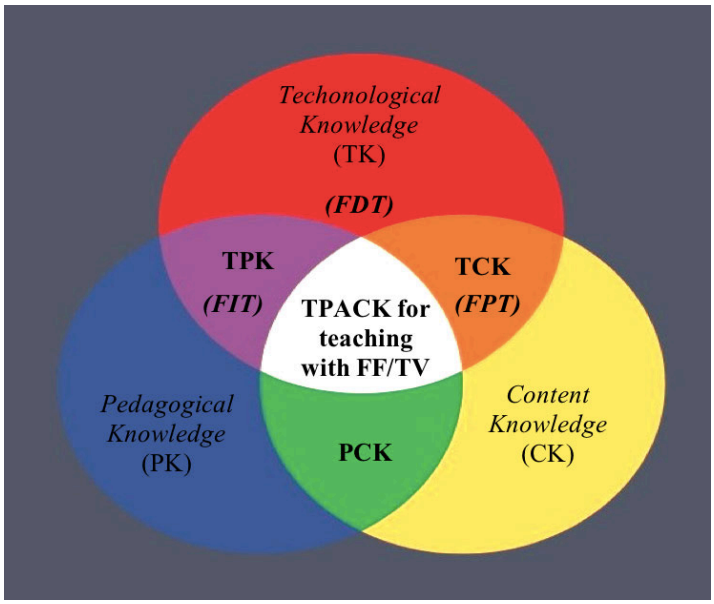

Figure 9.3. Role of FPT, FDT and FIT in improving TK, TPK and TCK for teaching with FF/TV

In conclusion, the TPACK model provides a valuable framework for understanding how lecturers can successfully use FF/TV in their teaching. The modified framework that overlays film production, delivery and integration technologies (FPTs, FDTs, FITs) onto the overlapping elements of TK, PK and CK demonstrates a systematic approach for lecturers wishing to incorporate multimedia resources in their teaching, and emphasises the critical need for ongoing institutional support.

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CHAPTER 10

DEVELOPING UNIVERSITY PEDAGOGIES WITH FF/TV

Statement of Authorship

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Publication Status	Published - revised for this thesis for stylistic consistency
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Name of principal author (Candidate)	Ngoc Nhu Nguyen (Ruby)		
Contribution to the paper	Performed all data collection and analysis stages, interpreted data, developed first draft, wrote and revised manuscript, and act as corresponding author.		
Overall percentage (%)	100%		
Certification	This paper reports on original research I conducted during the period of my Higher Degree by Research candidature and is not subject to any obligations or contractual agreements with a third party that would constrain its inclusion in this thesis. I am the sole author of this paper.		
Signature		Date	15.02.2023

Film in University Teaching: Optimising Multimodal Pedagogies through Film Literacy

When lecturers integrate feature films and TV series (FF/TV) into their teaching, they are not always fully aware of how these media achieve their effects on students. Regardless of discipline, lecturers need a working knowledge of film literacy to effectively enable student learning through FF/TV representations. This study surveyed and interviewed lecturers across disciplines at Australian universities about their pedagogical practices involving FF/TV. Their responses are analysed through the lenses of film literacy, cognitive load and dual coding theories to address lecturers' practical concerns when repurposing FF/TV for teaching. The findings present practical recommendations ranging from FF/TV selection criteria, supporting materials and class activities, to different techniques of film screening and designing instruction towards optimising

multimodal pedagogy with FF/TV. The result is a framework to guide lecturers' decision-making when using FF/TV in their teaching.

Keywords: film in teaching; film pedagogy; multimedia learning; film literacy

10.1. Introduction

In the contemporary 'digital university' (Peters & Jandrić, 2018), lecturers are increasingly expected to innovate and mediatise their teaching. However, universities prioritise risk management, such as copyright infringement and academic dishonesty (Buckley & Cowap, 2013; Sagnak & Baran, 2020) ahead of developing pedagogies to address the educational and social implications of media technologies (Goodfellow & Lea, 2013). They also avoid investing in long-term training resources to lift lecturers' digital competency, instead employing casuals to fill in short-term roles (Smith & Gurthie, 2020; Whitchurch, 2015).

With limited guidance from their institutions, lecturers turn to readily available, engaging materials with relevant content to integrate into their teaching. One such resource is film, used for its diverse and relatable content, entertainment qualities, technological accessibility and multimodal format (Andrist et al., 2014; Holland, 2014; Jerrentrup et al., 2018; Marquis et al., 2020; Peker et al., 2021).

The use of feature film and TV series (FF/TV) is now commonplace in classrooms across multiple disciplines (Sigler & Albandoz, 2014). Whilst some academics hesitate to adopt FF/TV without institutional approval (Birch & Burnett, 2009; Sánchez-Prieto et al., 2019; Veletsianos et al., 2013), many educators have recognised the pedagogical merits of FF/TV (Donaghy, 2019; Peacock et al., 2018; Paran & Duncan, 2018). In recent years, there has been a growing number of research

studies about FF/TV-enhanced teaching methods, in disciplines such as sociology (Andrist et al., 2014), politics (Swimelar, 2013), psychology (Searight & Saunders, 2014), English language (Viebrock, 2016), history (Marcus et al., 2018), medicine (Jerrentrup et al., 2018), math (Beltrán-Pellicer et al., 2018), chemistry (Wink, 2011), architecture (Mumcu, 2020), and law (Grubba, 2020).

Alongside educational merits, these studies reported challenges in managing safe and effective student learning against films' compelling storytelling and special effects (Ansel, 2002; Hobbs, 2006; Fleischer, 2018; Myers & Abd-El-Khalick, 2016); in finding guidance, training and resources to help lecturers optimise their teaching practice (Andrist et al., 2014; Donnelly, 2014; Marquis et al., 2020; Peacock et al., 2018); and in managing time and effort to develop their film-enhanced pedagogies (Marquis et al., 2020; Swimelar, 2013). These studies paint a picture of self-reliant and self-taught lecturers who, despite limited institutional support, have overcome challenges to integrate FF/TV into teaching their disciplines (Chadha, 2020; Hemmings et al., 2012; Marquis et al., 2020).

This study responds to the increasing relevance of FF/TV in higher education, the absence of professional development for FF/TV-assisted university pedagogies, and the multiple challenges that lecturers self-report. It asks:

(1) What do university lecturers say they already know and do when integrating FF/TV into their teaching?

(2) What do their responses suggest about their awareness or knowledge of film literacy and applied learning effects of Cognitive Load Theory and Dual Coding Theory in the context of their instructional design?

(3) What are effective, scalable teaching practices, and what are potential issues that can be addressed?

10.2. Theoretical framework

The following theories are to be applied to both lecturers' learning about teaching with FF/TV and designing FF/TV-assisted instruction for student learning.

10.2.1. Model of Film Literacy

The skillset of film literacy (FL) is defined by the British Film Institute (2013) as:

> the level of understanding of a film, the ability to be conscious and curious in the choice of films; the competence to critically watch a film and to analyse its content, cinematography and technical aspects; and the ability to manipulate its language and technical resources in creative moving image production. (p. 3)

Explicit teaching and learning is required for both educators and students to develop FL. This means lecturers need to equip themselves with a working understanding of FL prior to integrating FF/TV into their pedagogy, then in turn teach students FL. A comprehensive assessment of FL relies on several interconnected knowledge domains and skills in both film analysis and production (Paran & Duncan, 2018). Building on Byram's (1997) Intercultural Communicative Competence (ICC) model, Thaler (2014) proposed an FL model consisting of three domains (Figure 1):

(1) the theoretical domain of knowledge about film;

(2) the practical domain of film analysis skills and film production skills; and

(3) the emotion-cognition domain of attitudes that integrates Viewer Response Theory (VRT) to explore holistic perception or film enjoyment, critical judgement and intercultural awareness.

VRT adapts Roseblatt's (1938, 1960, 1969, 1978) highly influential Reader Response Theory to the context of audio-visual texts like FF/TV, and recognises three processes

in making meaning from film viewing: (1) finding gaps in the story and filling them with viewers' prior experience; (2) critically evaluating the story and characters; and (3) reflecting on how the film influences viewers' own perception (Bredella, 2004, translated in Viebrock, 2016; Kear, 1988). This attitudinal domain in the context of pedgagogy aims to cultivate students' affective responses to film, to enhance engagement and to develop critical thinking skills.

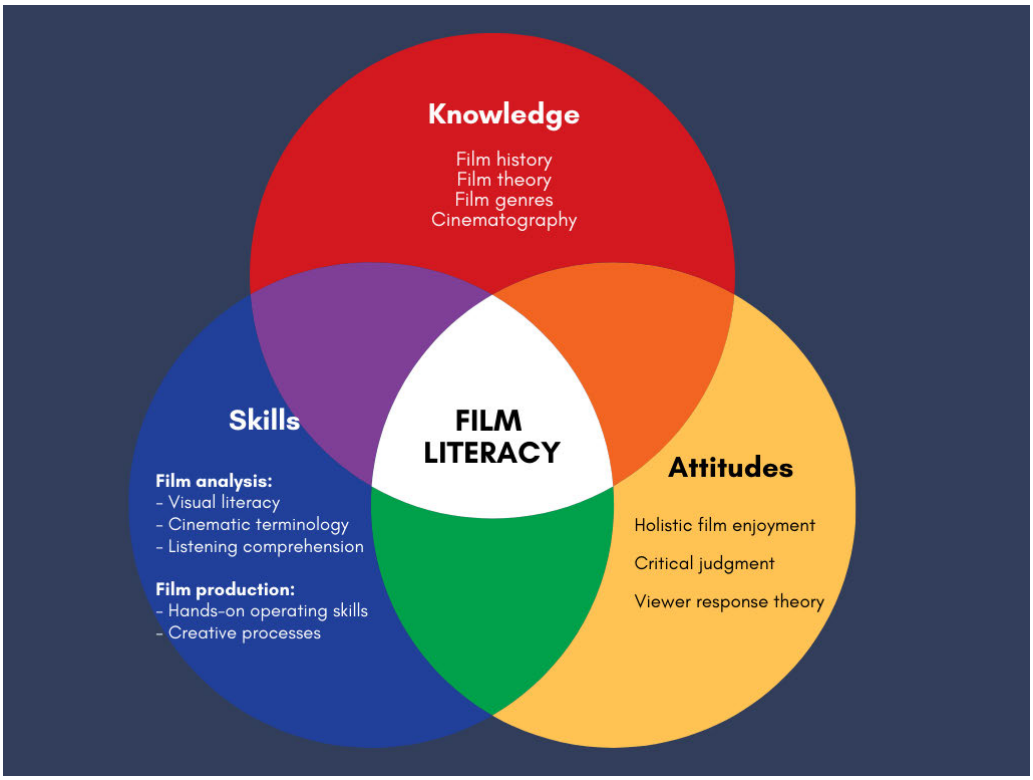

Figure 10.1. Thaler's (2014) model of film literacy

The uniqueness of this FL model lies in combining the film focus with recognition of FF/TV's dual affective dimension in educational contexts – enjoyment and critical judgement. Though emotions play a significant role in selection of FF/TV for enhancing student engagement (Jerrentrup et al., 2018; Kresse & Watland, 2016; Marquis et al., 2020; Peker et al., 2021), such engagement can undermine students' cognitive abilities if not effectively integrated into instruction (Fleischer, 2018; Madsen, 2014; Marquis et

al., 2020; Myers & Abd-El-Khalick, 2016). Lecturers therefore require a working knowledge of all three dimensions of FL to maintain a healthy degree of affective engagement.

10.2.2. Cognitive theories of learning

Lecturers also need to understand how the visual and auditory information interact with each other, and with other instructional elements (e.g., learning materials and activities), and whether those interactions enable or hinder effective learning. This study utilised two evidence-based learning theories – Cognitive Load Theory and Dual Coding Theory – to help determine whether the kinds of information elicited by FF/TV content may be helpful or unhelpful to specific learning tasks.

10.2.2.1. Cognitive Load Theory

Cognitive Load Theory (CLT) was founded on long-standing hypotheses about humans' limited capacity of working memory (seven plus or minus two elements or chunks of information – Miller, 1956) in relation to the schema-forming long-term memory (i.e., learning) (Atkinson & Shiffrin, 1968; Baddeley, 1992, 2012; Cowan, 2001, 2010). CLT distinguishes information as helpful or unhelpful to the specific requirements of a learning task.

10.2.2.2. Dual Coding Theory

Dual Coding Theory (DCT) asserts that knowledge acquisition and memorisation are superior when the dual communication modes of visual and verbal are activated and employed (Goetz et al., 2007; Paivio, 2007, 2013; Plass & Kalyuga, 2019). Every different sensorimotor modality (e.g., words, still images, moving images, auditory materials) activates a different part of the brain via a distinct neural pathway (Cuevas,

2016; Paivio, 2014; Patterson et al., 2007; Welcome et al., 2011).

10.2.2.3. Applied learning effects of CLT and DCT

Applied learning effects are the practical effects or principles derived from a theory that can be applied to relevant learning contexts to inform educators about instructional design. Many applied learning effects generated from the hypotheses of CLT and DCT are grounded in empirical research. This study includes four effects: worked example, expertise reversal, redundancy, split attention.

The worked example effect proposes that educators should provide a step-by-step demonstration of how to perform a task for inexperienced learners so that they can observe and learn the necessary knowledge and skills to perform a similar task (Chen et al., 2018; Kalyuga, 2007; Van Gog & Rummel, 2010). Priming students with prerequisite knowledge frees up load to process entirely new information (Meyer et al., 2019; Tsai et al., 2022; Yang et al., 2018).

After learners become more experienced in the relevant skill performance, the expertise reverse effect suggests that they no longer require the same level of detailed guidance from examples. For these learners, worked examples increase the extraneous load of processing and reconciling this repeated information with established schemas, thus increasing cognitive load and decreasing learning effectiveness (Chen et al., 2018; Kalyuga & Renkl, 2010; Nievelstein & Boshuizen, 2013). For those learners it may be sufficient to provide a mixture of example-styled guidance to help learners apply their knowledge, practise their skill and build confidence (Van Merriënboer et al., 2003; Renkl, 2014).

The redundancy effect occurs when the same information is repeated by different sources, creating more extraneous load and resulting in slower processing

capability (Chandler & Sweller, 1991; Liu et al., 2012; 2019; 2021). Unnecessary details including background noise, narrations, sound effects, gifs, animations or transitions may be distracting and hinder the learning process (Baker et al., 2018; Liu et al., 2021; Mayer et al., 2020; Sweller, 2020).

When information sources that have logical relations with one another are presented far apart (e.g., on different pages, screens or slides), the split attention effect occurs (Cerniak et al., 2009; Sepp et al., 2019). To minimise this, interrelated information should be presented in close proximity, or signalled with deictic references (e.g., 'see Figure 1' – Schneider et al., 2018) or colour coded (Ferrara & Butcher, 2011) to enhance retention, increase learners' attention and enable faster information identification (Richter et al., 2016; 2018; Schneider et al., 2018; Wang et al., 2020).

10.3. Methods

With ethics clearance, an online qualitative survey targeting lecturers across disciplines at Australian universities was disseminated late 2019-mid 2020 via newsletters of higher education networks, email invitations, flyers, and snowball sampling. The survey (Appendix 1) included 36 qualitative multiple-choice and open-ended questions. Key areas were:

- Academic background
- Familiarity with cinematography in film literacy
- Aspects and stages of teaching practices involving FF/TV
- Pedagogical successes and challenges in repurposing FF/TV for instruction.

The survey yielded 50 anonymous responses, 24% of which arrived between March and May 2022 (Australian universities were forced to move online due to COVID in March 2020 – Smith & Kaya, 2021). These mid-pandemic responses did not deviate from the trends and patterns recorded by the majority, which some respondents explained they already had both face-to-face and online teaching arrangements in place.

Most survey respondents held permanent teaching positions (68%), some were casual teaching staff (12%) and 1-3 year fixed-term contractors (10%). Their major disciplines are summarised in Figure 2; the total number exceeds 50 respondents because some used FF/TV in teaching multiple disciplines.

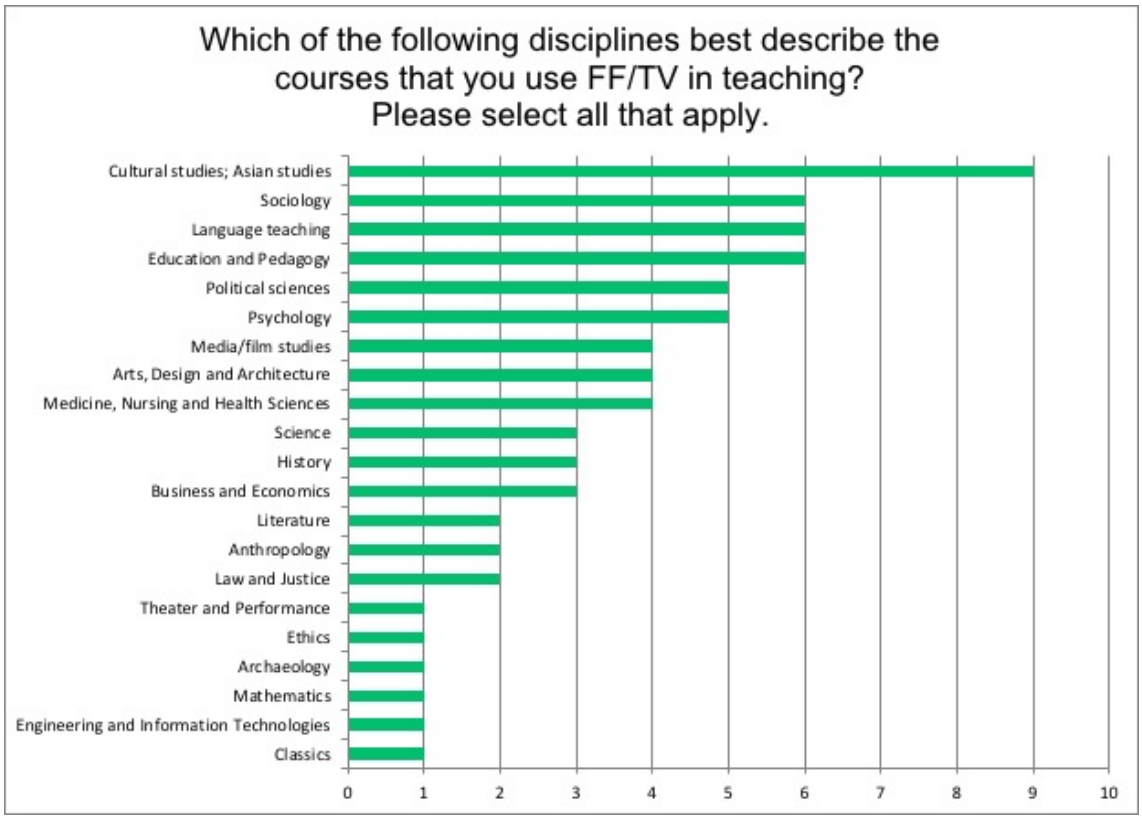

Figure 10.2. Academic disciplines of survey respondents

Upon completion, survey respondents were invited to participate in follow-up one-on-one semi-structured interviews (Appendix 2). Each of the 18 interviews lasted 30-90

minutes. Interviewees came from sociology, biology, gerontology, technology, pedagogy and education, Asian/cultural studies, ethics/religion, academic writing and research, English language, history, and film/media studies. Several lecturers experienced teaching in countries other than Australia and across a range of different educational institutions other than state non-religious universities, which indicates a reasonable level of relevance and applicability of research findings to various teaching contexts outside Australia.

Analysis of the survey results was conducted in SurveyMonkey to identify major trends and common patterns. These findings then informed thematic analysis of the qualitative data from both the survey and interviews, which followed six recursive steps according to Braun and Clarke (2006) (Figure 3) using Nvivo12 software.

Figure 10.3. Six phases of thematic analysis (Braun & Clarke, 2006)

Initially data sets for thematic analysis were selected according to data collection methods for data familiarisation, code generation and early theme searching. Using an inductive (data-driven) approach to thematic analysis, identified codes and themes then guided cross-data set examination to collect all relevant instances from the data

corpus towards answering the research questions. The relevant themes to this study are used as headings to the Findings section.

This study also considered latent themes about participants' teaching contexts and personal experience in interview data analysis to properly contextualise and nuance their perspectives on teaching with FF/TV.

10.4. Findings

The research findings are scaffolded into four themes: selecting FF/TV, preparing FF/TV for screening, FF/TV screening techniques, and designing instruction.

10.4.1. FF/TV selection

While each participant had their own set of priorities, the majority selected FF/TV by balancing availability and safety requirements, as well as pedagogical requirements.

10.4.1.1. Availability and safety requirements

Availability of FF/TV content was identified by survey and interview participants in reference to having reliable access to the desired FF/TV – either in DVD, streaming or download – and having compatible classroom film delivery facilities:

> many films are available on DVD, YouTube but still many are hard to get hold of to play in class […] a key factor will be availability absolutely. (L3)

> Availability is an issue, particularly if this is a resource which I know and I really like and I want to use and it's not available. (L18)

Related to availability was the issue of copyright, which seemed a major concern for many participants:

> we're in a different environment in terms of copyright; now we record everything […] so my recent teaching has kind of avoided using film. (L17)

> we had access to that for 2 years and permission was withdrawn, so copyright has become a real problem for us teachers who use this kind of material in teaching. (L5)

> there are clear copyright rules on the uni website but staff are still uncomfortable that they're doing something wrong […] it's just a barrier. (L11)

Another element of safety around using FF/TV was the issue of appropriateness regarding potential triggers. Many lecturers emphasised the need to balance between avoiding triggers and teaching about controversial or uncomfortable topics to socio-culturally diverse student populations:

> I'd hate to knowingly or inadvertently put students in an uncomfortable emotional position […] but sometimes it's unavoidable. I'd announce trigger alerts like, 'Look, these things happen in the film, if you feel that it's going to cause personal concerns, please come tell me and we'll work it out'. (L18)

10.4.1.2. Pedagogical requirements

One of the most important criteria for FF/TV selection is relevance, which means 'the meaningful semantic connections between the film or TV and the rest of the course' (L18), or how the film 'fits into a coherent arch of the course narrative' (L8). This is a subjective issue, so individual lecturers must determine the level of relevance that is suitable for their teaching goals.

Part of FF/TV's relevance comes from their diverse and relatable content, artistically inspired by real-life issues. Therefore, lecturers also need to assess FF/TV's level of suitability against their pedagogical requirements, which then determines if a representation is appropriate for each student cohort, how detailed the instruction should be (worked example, expertise reversal effects), and what accompanying learning activities and tasks would optimise FF/TV's dual coding effect for student learning:

> film is a good opportunity to teach students to look at evidence […] I would often get them to evaluate the quality of the film in terms of its historical accuracy. So even if a film is not historically accurate, it's still useful. (L10)

> [film]'s a fictionalised reality – even though it exists in that fictional space, it shows the real material outcomes of the processes and that has been useful. (L12)

However, interviewees appeared to possess quite different levels of expertise in the three film literacy domains (knowledge, skills, attitudes) when assessing FF/TV's accuracy against other sources:

> I've only used movie trailers as a supplementary source, but documentary is almost like the written source because they're respectful debate and they communicate facts […] they can directly link the knowledge and what happened in the real world. (L9)

> there is not a difference between drama and documentary. It's all fabricated; the directors make choices on what to include and not to include. There's no such thing as 'the truth' in cinema […] documentaries can be highly stylised and scripted, and drama can rely on interviews for dialogue. You can film actors in their own homes being someone similar to themselves, and autobiographical films can be presented as drama, or docudrama. (L6)

Part of the struggle to balance student engagement and skills training in FF/TV use also relates to the FF/TV selection criterion of approachability. Several lecturers considered students' personal tastes, cultural background, life experience and expectations to identify suitable FF/TV as these factors influence students' attitudes (FL domain) and hence learning approach:

> in Hong Kong [students] really weren't aware of Hollywood cinema […] so I needed to find local examples […] whereas here they would immediately engage. (L6)

> students generally find it uncomfortable to watch with subtitles, black and white and experimental editing, so they resist it, they don't want to engage because it's not easy entertainment. (L8)

Simultaneously, some lecturers emphasised the elements of teachability, including attributes that can enable a meaningful learning experience and/or develop new skills

for students, while accurately reflecting the values that are important to lecturers (lecturers' FL):

> but students are here to study; they got to watch something that they wouldn't have seen otherwise [towards] a more sophisticated understanding. (L14)

> I have to make sure that the films I choose are robust, rigorous and interesting to think about and write about, but also are enjoyable to watch. (L3)

> I put a lot of effort into finding content to screen that represents my values […] I rewrite everything every year […] after [learning] with me, they will get that filmmakers are very gender-diverse and multicultural. (L6)

10.4.2. FF/TV preparation for screening

The majority of survey respondents reported screening short film clips (82%) and/or short TV clips (56%) in class, but some also showed full films (44%) and full TV episodes (18%) in class. Figure 4 shows a more detailed breakdown of respondents' estimated durations for class screenings, most often choosing 1-5 minute segments.

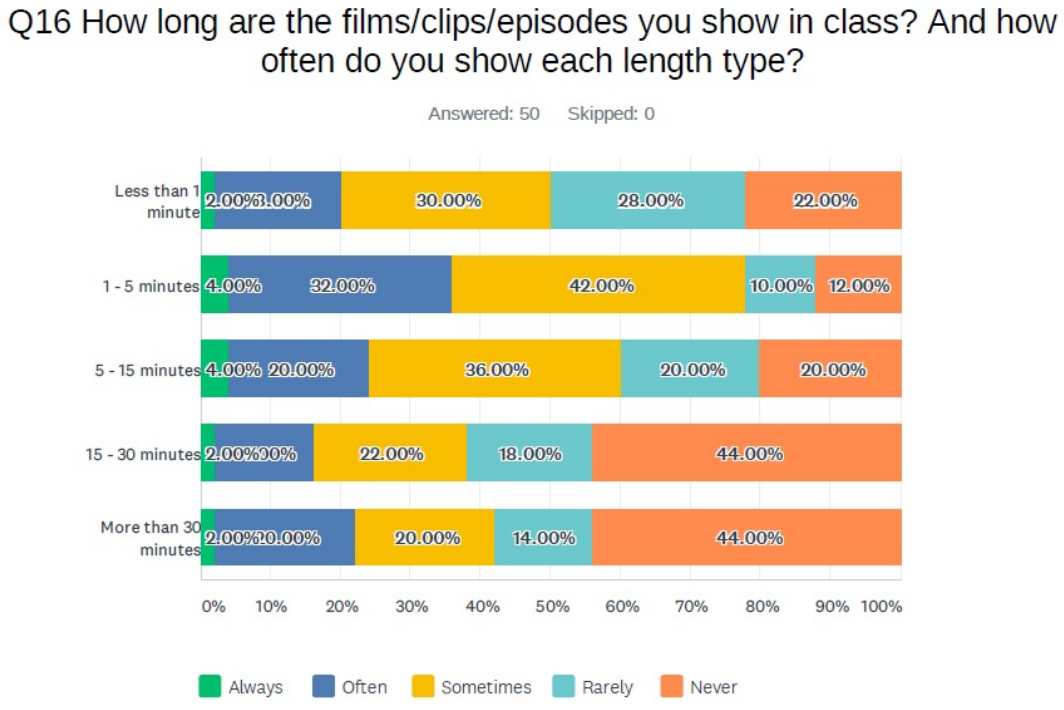

Figure 10.4. Length of FF/TV shown in class and use frequency

Those who reported using excerpts/short clips explained that long sittings of film viewing may result in a passive learning environment, which is in line with the redundancy and split attention effects. Short and more focused clips thus helped students remember and recall knowledge (principle of CLT):

> I try not to show anything for more than 10 minutes or 15 minutes, the shorter the better. Otherwise the whole atmosphere gets slacked; students become passive. (L16)

Some interviewees used short clips to provide examples, visually demonstrate content, and draw student attention to important finer details (Sexton, 2006), which may enable deeper and more nuanced understanding according to DCT:

> in an hour lecture I might show 5 or 6 different clips from different films to better illustrate the point that I'm talking about. (L1)

> I would show […] no more than 5 minutes, but more than one example […] not necessarily 5 continuous minutes but 1 minute from here 2 minutes from there. (L18)

> I'll show a bunch of clips from that film as well to demonstrate the concepts that I want [students] to pay attention to […] or to analyse in closer detail. (L14)

About 28% of survey respondents and 50% of interviewees recommended editing the FF/TV excerpts. Such editing can include segmenting long clips into shorter ones, trimming off unnecessary intercuttings, creating montages of key scenes, or even embedding interactive activities into the FF/TV content. Echoing the redundancy effect, split attention effect, interviewees concurred that these techniques help minimise distractions, produce a cohesive and straightforward structure for learning, and optimise class time:

> I tend to break the clips down beforehand into 6-minute blocks and 8-minute blocks that I know where to stop […] some movie scenes just stand alone quite comfortably. (L4)

> I trimmed the film scenes that are directly in line with the theme that I'm teaching […] I combined them together and then showed to students, usually less than 5 minutes. (L9)

On the other hand, showing FF/TV, often without interruptions, was usually practised by lecturers whose objectives included demonstrating how the subject matter develops over time, cultivating the emotional attachment students form with the story, and facilitating their engagement in collaborative discussions from the shared learning experience with peers:

> I might show the whole film for an hour during the lecture with a bit of an introduction about what the film is about. (L1)

> Long-form TV has allowed [sophisticated topics] to be looked at really expansively over several seasons […] issues can be looked at in much more complex ways than 90 minutes of a feature film. (L15)

10.4.3. FF/TV screening techniques

Lecturers can positively influence the effectiveness of FF/TV screenings by sequencing instructional elements. Many lecturers suggested using mixed-length screenings of both full FF/TV (either in class or as homework) for complete context or effect, then showing shorter excerpts or screenshots of scenes for close analysis alongside other activities. This technique allows students space for reflection without missing the full context:

> I'd show an entire feature film each week as the object of study. Then I'd lecture about it, and then in tutorials we might watch smaller clips from the same film. (L14)

> [students]'d watch the entire film before coming to the seminar. In the seminar we discuss the film, then I show shorter clips which we analyse in closer detail – meaning I'd show things several times and talk about it and

> getting [students] to talk about it in groups and then report back to the class. (L13)

Many survey respondents reported segmenting FF/TV clips by pausing (60%) to point out or explain something important (93%), ask students questions (90%), facilitate class discussion (53%), let students take notes (50%), allow bathroom breaks (10%), and refocus students with reminders (7%).

Many interviewees confirmed the benefits of pausing in enhancing the DCT through timely connections between FF/TV content and course content, especially to connect knowledge from different instructional materials. However, most revealed that they rarely planned when to pause or exactly what to say or do during those pauses:

> I would stop very frequently to make a point […] I would expect them to read beforehand so wherever I pause and ask questions [and facilitate] group activities […] but I don't properly plan when to pause; I just do that off the top of my head as I'm going through. (L10)

> if [the film] makes a point on something touched on previously, I may pause and say, 'Do you recall this or this is an example of ABC?', but that's not often planned. (L12)

Some interviewees with extensive knowledge of cinematography reported using the image-sound separation technique in which the visual data and the auditory data of FF/TV clips are separated from each other before screening. This aimed at teaching students how to recognise the multiple modalities presented in FF/TV and how the media can manipulate them into perceiving something that is not there ('anchorage' – Barthes, 1964), which can effectively advance students' all three FL domains:

> filmmaking separates image and sound before it mixes the two […] I show [students] the images without the soundtrack to get them to pay attention to colours, texture quality, meanings of the perceptual information they're getting visually. Then, we watch the clip again with just the soundtrack so we

> identify the different sounds. Then, we watch it the third time where I bring the two together and then see what new information emerges. (L13)

Instead of withholding and gradually releasing information to students, two interviewees disclosed the whole story before film-viewing to alienate students from FF/TV's emotional manipulation and make space for critical analysis of FF/TV content. Such practice may help minimise the redundancy effect caused by strong emotional reactions to FF/TV content, and simultaneously optimise the dual coding effect at the time of in-class viewing:

> Often I apply the 'alienation effect' devised by Bertolt Brecht […] basically you get the story at the beginning […so that] audience pay less attention to the affective impact and pay more attention to the cognitive and analytical context. (L18)

10.4.4. Intructional design

As L18 identified, a lecturer and their instructional design play a decisive role in delivering a coherent FF/TV-assisted pedagogy for student learning:

> Film, even a really good film, is never enough for the learner or the learning experience. You need the teacher to bridge between the film and the learning outcomes […] to appropriately and coherently scaffold and structure the content, and create a learning environment through which students can discover as much as they can from the film in relation to the subject matter. (L18)

Thematic analysis of accounts from other interviewees regarding their FF/TV-assisted instructional design yielded two key themes: coherence in content provision; and coherence between skills training and learning requirements.

10.4.4.1. Coherence in content provision

By choosing to communicate knowledge through representational texts, lecturers need to be careful about using FF/TV representations that provide false, misleading,

incoherent or contradictory information, as it would lead students to retain the misinformation from the FF/TV:

> for years I showed [a film], then I spent the course demolishing its claims […] but that crappy black and white thing we showed in Week 1, for many students, remained the more powerful image even after 3 months doing my course. (L5)

> I [use] films that contain different voices […] and explain how they're not actually telling one story although it's presented so […] but when I asked [students] in assignments, they'd just totally take it as 'Oh this is the truth'. (L1)

This phenomenon can be explained by the redundancy and split attention effect that distracted students from the correct information, while FF/TV's superior ability to create long-lasting memories compared to texts or spoken words (Cuevas, 2016; Paivio, 2007, 2013, 2014) made it easier to hold onto FF/TV content. It therefore makes such FF/TV use pedagogically and ethically risky for the high potential of misinformation retention. Exposing students to a factually debatable FF/TV representation requires a solid pedagogical foundation and multimodal forms of direct, consistent instruction to sufficiently prepare their cognitive processes before, during and after viewing:

> I've been very unsuccessful at dispelling this film […] I think the techniques that go with the use of film matter most – I didn't have guest speakers, interesting exercises or a whole semester to dispel it. (L17)

Responding to this problem, L13 listed a range of considerations he used to ensure the integrity of his pedagogy, which echoed the cost-benefit analysis recommended by CLT and DCT researchers to manage student cognitive load (Kalyuga & Singh, 2016; Markransky et al., 2019; Skulmowski et al., 2016):

> if we apply research merit and integrity to teaching, then […] do you have the skills to manage any fallout? Have you put in place safety nets? […] Can students do an alternative assessment task if required? […] What do you do to respect the diversity of the students that you're teaching? […] What are the values that you hope to gain by showing this film? What might be the risks? Do the risks outweigh the benefits or the other way around? (L13)

Although other lecturers did not demonstrate this rationalisation, they appeared to have considered it in their use of supporting materials and learning activities to supplement FF/TV use. Survey respondents named a range of these materials including PowerPoint slides (90%), still images (71%), books/book chapters (69%) and academic papers (63%). Plus, 'interesting exercises' referring to learning activities around FF/TV viewing (and guidance for implementation) also play a vital role in monitoring students' learning. Survey respondents reported using guiding questions (86%), discussion (80%) and teaching basic film analysis skills (43%). Using a variety of materials and activities can be expected to strengthen the dual coding effect between FF/TV and relevant course content by helping students tease out all the connections between the two information sources.

10.4.4.2. Coherence between skills training and learning requirements

Even with discipline-specific learning outcomes, FF/TV-assisted pedagogy is interdisciplinary in that students require knowledge and skillsets derived from film literacy. L8 suggested a more film-focused and direct approach to engage students in explicitly acquiring necessary skills:

> film is […] synaesthetic – you need to master many cognitive and sensory resources simultaneously to understand a film […] to unpack the invisible work behind it and work out how many senses being employed and in what way to achieve a certain effect [students] are not necessarily visually literate […] but literate in terms of themes and narratives […] it just hadn't occurred to them to read [film] in the same degree of detail I [teach them to]. (L8)

However, only 15 out of 50 survey respondents reported teaching cinematic terminology, and 18 taught basic film analysis. Four interviewees described how they specifically dedicated class time to teach students about film analysis:

> we spend one week in the course on learning film analysis skills [...] partly I'm teaching [discipline], partly I'm teaching film studies. We have readings about film terms, definitions, examples […] then we practice: I put up a film and ask them to tell me something about its narrative, mise-en-scène, and interpretation. (L1)

The timing of such instruction depends on teaching priorities. Providing guidance beforehand helps scaffold information and focus students' attention (worked example and expertise reversal effects); providing it afterwards allows more student autonomy in processing the information (that is, in developing students' VRT roles and FL in general):

> I ask questions before showing the clips so students understand why they are looking at these things […] any movie clip has hundreds of different aspects you can look at. (L4)

> [After film-viewing] I put up an Echo360 question: 'What's your first impression of the film?' […] it's important to hear the student voice before I control it; students need to get in touch with their own thinking before they hear from me. (L8)

In multimodal and contextualised teaching environments where multiple nuanced sources of information intersect such as with FF/TV pedagogy, identifying the majority of students' level of expertise or familiarity with learning with FF/TV is crucial in order to know which learning effects to observe. Many used the course level (i.e., first year, second/third year) as an indicator of this:

> if we can get first years to engage with the material we've won […] in second year, the task is really getting them to think about what's behind a story […] in third year they'd be talking about semiology, ideology, they're wrestling

> with all these things within themselves 'cause suddenly they start going, 'What's my ideology? How do I see the world? What am I?'. (L2)

When considering assessment, 76% of survey respondents reported having no specific methods to assess the effectiveness of their FF/TV use, 14% relied on student evaluation of teaching questionnaires, and only 10% reported using a range of assigments and activities to support FF/TV use. Many interviewees admitted having no assessment methods that specifically evaluate student learning related to FF/TV, which echoes the common gap between instruction and assessment in the literature about FF/TV pedagogy (Membrives et al., 2016). Several interviewees reported using qualitative and creation-based methods to get a more personal and accurate sense of students' content understanding and skill development progress:

> [students] write in a weekly reflective interactive online journal [about] an excerpt from a TV episode or film […] I'd give them feedback and I get a sense of how they were absorbing and responding to the materials […] they'd also be expected to […] pick one feature film to write an essay about […] and then they'd do an oral presentation in the tutorial. (L15)

> video essays […] and short reading responses to scaffold [students'] scholarly writing abilities and get feedback incrementally. (L14)

Though more time-consuming, this qualitative and multimodal approach promotes students' three VRT roles as FF/TV viewers: (1) finding gaps in the story and filling them with their own prior experience; (2) critically evaluating the story and characters; and (3) reflecting on how the film influences their own perception. Assessment design that echoes the visualisations or multimodal materials used in teaching and learning, rather than a single-modal testing method, is more helpful towards achieving learning outcomes (Skulmowski & Rey, 2021).

10.5. Discussion

Part of this study aims to provide lecturers a practical guide on specific ways to optimise their instructional design when including FF/TV. Table 1 integrates all research findings to propose a set of recommendations and further resources or assistance that lecturers can practically consult to advance their FF/TV-assisted pedagogy.

Table 10.1. Practical guide for designing instructional elements in FF/TV-assisted teaching

	THEORY-BASED RECOMMENDATIONS FOR LECTURERS' PRACTICES	FURTHER RESOURCES/ ASSISTANCE
FF/TV selection	- Understand that audio-visual representations, regardless of their genres, are constructed and manipulated to push certain agendas → focus on their suitability for ones' pedagogical requirements (as opposed to perceived accuracy) - Avoid the split attention effect by purposefully update knowledge about copyright regulations alongside one's own pedagogical requirements (as opposed to casually reading the rules) - Critically assess FF/TV's suitability against pedagogical requirements (as opposed to relying on personal preferences) - Brief and remind students regularly about the connection between FF/TV content, course content and learning outcomes, especially when providing trigger warnings (as opposed to generic one-liner warnings) - Prepare alternative viewing and/or consultation options	- Contact university libraries to obtain copies of FF/TV for teaching purposes - Request assistance from library staff to 'translate' copyright regulations into specific teaching contexts - Consult a learning designer/teaching specialist/academic developer - Seek FF/TV recommendations from film/media experts at the university
FF/TV preparation and screening techniques	For full emotional effect and/or familiarise students with in-class film-viewing process (FL domains): - Acquire legitimate full access to chosen FF/TV - Prepare general open-ended guiding questions before film-viewing (signalling effect) - Allocate pair/group/class discussion time as soon as possible afterwards (in-class, online forum, tutorials) to enable reflections and inspire conversations	- Research and test different interactive presentation tools and video editing software or platforms - Request university-wide subscription to relevant services if applicable - Collaborate and co-design FF/TV-assisted courses with a learning

		designer/teaching specialist/academic developer
	For close study of scenes and avoid cognitive overload and redundancy effect: - Use computer software to trim and edit FF/TV into shorter clips (preferably 1-5 minutes), or record timestamps for pausing (as opposed to spontaneous pausing) - Separate image and sound to advance students' understanding of FF/TV's 'anchorage' - Prepare specific guiding questions to link FF/TV to readings and course content - Apply 'alienation effect' - disclose storyline if using longer clips (5-15 minutes) to better focus students' attention on course-relevant information	
Instructional design (Constructive alignment)	Teaching film analysis and other relevant skills to students (three FL domains, VRT roles): - Scaffolded instructions to accommodate students' different levels of film literacy - Demonstrate step-by-step how to analyse and integrate FF/TV content with disciplinary content (worked example effect) - Provide opportunities for practice with lecturer's guidance (expertise reversal effect)	- Collaborate and co-design FF/TV-assisted courses with a learning designer/teaching specialist/academic developer - Consult and brief all members of your teaching team (e.g., co-ordinator, instructor, tutor, marker) to ensure all

	- Manage expectations and train students' FL by introducing and implementing a learning structure for FF/TV-assisted lectures (i.e., preliminary reading requirements, note-taking or journal keeping, discussion contribution, assessments) - If using FF/TV contradicting instruction (not recommended – always use cost-benefit analysis), utilise multimodal supporting materials and learning activities to ensure students retain correct information	instructional deliveries are consistent and coherent
	Assessment should echo the knowledge and skills learned through FF/TV-assisted pedagogy: - Use qualitative formats that enable individualised integration of knowledge (written/video essay, journaling/notetaking, oral presentation) - Use class activities and formative assessments to prepare students for summative assessments - Factor in students' different levels of FL when devising task requirements - Use students' responses to these assessments to identify effective and ineffective practices for improvement	
Student evaluation of teaching	Student feedback is an untapped source of information to enhance lecturers' FF/TV use: - Allow regular student feedback (e.g., check-in, check-out surveys with customised questions) throughout the course (as opposed to relying on end-of-term student evaluations) - Adjust and/or respond to feedback as much as practical to encourage students to engage with course materials and shape their attitudes towards FF/TV in university teaching	- Some interactive presentational platforms enable anonymous responses to questionnaires/surveys

Integrating the survey and interview data provided important insights into lecturers' rationale behind their pedagogical decisions and their own learning about FF/TV-assisted pedagogy. For example, many lecturers' negative attitude towards copyright regulations and troubles with trigger warnings could be linked to the missing context of their pedagogical requirements. Lecturers should seek to understand copyright rules specifically within their teaching contexts and acquire assistance to address them effectively. Similarly, students need to learn why the discomfort may be necessary when they confront real-life issues with proper guidance and know their right to alternatives. According to the split attention effect, when these connect sources of information are presented far apart, learners (both lecturers and students) may experience cognitive overload and thus feel overwhelmed and resist. The assistance from colleagues, learning designers, teaching specialists, academic developers (for lecturers) and the guidance from lecturers (for students) generate the worked example effect to familiarise each with the respective learning processes.

Although only two interviewees directly mentioned learning theories, several discussed the importance of cinematography, and many were utilising some of the applied learning effects of CLT and DCT in designing their instruction. For example, the majority of lecturers recommended using shorter clips, frequent pausing, or a combination of mixed-length FF/TV viewing, demonstrating they may have been aware of the limited capacity of the working memory (Cognitive Load) and the redundancy effect. The popular use of guiding questions is an application of the signalling and dual coding effect, in which relevant information between FF/TV and course content is flagged and paired together in students' mind during viewing to enhance memory

retention. When selecting FF/TV and designing assessments, several lecturers' concerns about approachability and teachability showed an awareness akin to the FL attitudinal domain. Most importantly, the methods of providing focused lectures/workshops on film analysis and image-sound separation emphasised the need for more explicit teaching and learning of three domains of film literacy (knowledge, skills, attitudes), which is in line with the worked example and expertise reversal effects to accommodate students' different levels of FL. To strengthen these FL domains in students, most lecturers recommended multimodal assessment methods that are compatible with multimodal teaching methods (Skulmowski & Rey, 2021), meaning more qualitative and individualised assessment formats. Many lecturers appeared to be switching between different kinds of supporting materials (readings, viewing, guiding questions), classroom activities (pair/group/class discussions), and qualitative assessment methods (essay, video essay, journaling, presentation) depending on students' levels and task requirements. Coherence in instructional design can be achieved through utilising a variety of supporting materials and class activities to facilitate a beneficial blend of critical pedagogy and research-based learning through FF/TV (Michelle Tan et al., 2020; Westwell & Ingle, 2020).

However, levels of awareness about evidence-based good teaching practices involving multimedia were uneven among participants and inconsistent even for the same individuals across different aspects. Many lecturers appeared in need of support within the layers of instructional design: several reported being overpowered by FF/TV's emotional manipulation and students' weak perception of accuracy in FF/TV representations, some were misguided about FF/TV's levels of accuracy and very few lecturers recognised the necessity of teaching students film analysis to address the

multimodal nature of FF/TV. Furthermore, some of the most commonplace FF/TV-assisted pedagogies still appeared to be unplanned, unstructured or absent. Lecturers would benefit more from preparing explicit reminders (such as a list of timestamps or key information) to enhance the dual coding effect of FF/TV content and relevant course content without burdening their own cognitive load, as well as minimise redundancy effect of tangents and distractions, or the split attention effect of ill-timed pauses. Regarding student evaluation of teaching, more lecturers should be encouraged to design and implement regular anonymous questionnaires/surveys and informal Q&A sessions to collect feedback throughout the course for impactful improvement to FF/TV pedagogy.

10.6. Conclusion

FF/TV representations are a powerful teaching tool. Their full potential in education, however, is still to be uncovered by a pedagogy that understands the interdisciplinary nature of the practice as well as the factors influencing student learning. Regardless of the discipline, a lecturer can significantly improve the effectiveness, safety and comprehensiveness of their teaching practices involving FF/TV if they carefully consider the insights offered by film literacy, CLT and DCT.

This study has identified a diverse range of teaching practices with FF/TV alongside their pedagogical merits and limitations, and categorised them into a disciplinary-neutral and goal-oriented guide. This guide provides a sense of direction and a good starting point to rationalise one's FF/TV pedagogy throughout the decision-making and planning. It is anticipated that the guide will encourage lecturers to reflect on their current practices, identify areas for improvement and take actions where

possible.

Future research may aim to investigate the ways in which this pedagogy can be scaffolded into training materials and platforms that allow easier and broader access by university teaching staff across disciplines. A wider scope of universities, disciplines, and media, coupled with a larger sample size may assist this aim.

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CHAPTER 11

EVALUATION OF TEACHING WITH FF/TV INTEGRATION

Statement of Authorship

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Overall percentage (%)	85%		
Certification	This paper reports on original research I conducted during the period of my Higher Degree by Research candidature and is not subject to any obligations or contractual agreements with a third party that would constrain its inclusion in this thesis.		
Signature		Date	15.02.2023

Co-Author Contributions

By signing the Statement of Authorship, each author certifies that:

i. the candidate's stated contribution to the publication is accurate (as detailed above);
ii. permission is granted for the candidate in include the publication in the thesis; and
iii. the sum of all co-author contributions is equal to 100% less the candidate's stated contribution.

Name of Co-Author	Edward Palmer		
Contribution to the Paper	Helped in data interpretation, manuscript 279onceptualization, structuring, revisions and evaluation.		
Signature		Date	05.10.2022

Assessing the Effectiveness of Feature Film and Television Series in University Teaching through Evaluation Quadrangulation and Action Learning

Multimedia technologies such as feature films and television series (FF/TV) are increasingly used by university lecturers to stay relevant in contemporary media-saturated society. However, institutional guidance on how to optimise the pedagogical integration of these materials is scarce, and most institutional Student Evaluation of Teaching (SET) questionnaires do not directly cover multimedia use in the classroom. Lecturers therefore are self-reliant in implementing a range of different evaluation practices to assess pedagogies with FF/TV. Using the four-quadrant model of evaluation and action learning, this study examines the advantages and shortcomings of various evaluation practices (e.g., SET questionnaires, observation, peer review) used by lecturers across disciplines who use FF/TV in their teaching. The study identified objectives and areas of evaluation that are specific to the context of teaching with FF/TV to guide (1) the development of new SET questions and (2) the integration of various TE practices into the full teaching cycle.

Keywords: teaching evaluation; student feedback; peer evaluations; teaching assessment; higher education

11.1. Introduction

Multimodal pedagogies, such as feature films and television series (FF/TV), have been used in universities for several decades and are now gaining more attention in lecturers' attempts to enhance student engagement (Bonsignori, 2018; Lim & Tan, 2018; Membrives et al., 2016; Recupero et al., 2021). The multimodal, narrative and engaging qualities of FF/TV have been found useful in accommodating students' diverse learning requirements, such as developing critical-analytical-nuanced-creative thinking skills (Bonsignori, 2018; Donnelly, 2014; Fleischer, 2018; Karasik et al., 2014). However, university induction programs typically do not cover the pedagogical use of multimedia, and professional learning for academics tends to lack film-related teaching-focused guidance (e.g., Andrist et al., 2014; Ansell, 2002; Donnelly, 2014; Peacock et al., 2018). Furthermore, research studies into the pedagogical use of FF/TV are mostly small-scale and discipline-specific. Facing such information scarcity,

lecturers mostly resort to online self-taught resources, experiment with different ways of integrating FF/TV, and handle problems as they arise on their own (Hobbs, 2006; Marquis et al., 2020). Although this is a perfectly valid approach to *new* pedagogical methods, the existing literature on pedagogies involving FF/TV is rich and cross-disciplinary; furthermore, multiple studies have called for developing more institutional support that harnesses the available knowledge to improve teaching quality around the media at universities (Donnelly, 2014; Marquis et al., 2020; Peacock et al., 2018).

There is strong interest and concern around teaching quality (Harrison et al., 2022) and this has made its reporting part of the competitive market for university student admissions (Hénard & Roseveare, 2012). This has commonly been done using student evaluation surveys where robust attempts at improving instruments for evaluating teaching quality have been undertaken (Hénard & Roseveare, 2012; Smith, 2008; Steyn et al., 2019).

Teaching evaluations (TE) of pedagogies involving FF/TV have typically discussed observation of students' reactions during class, student performance in assessment tasks, and informal ad hoc conversations with students (e.g., Ansell, 2002; Bluestone, 2000; Le & Lo, 2014). Discussion around the formal Student Evaluation of Teaching (SET) standardised questionnaires (e.g., SOLO, SELT, CEQ, NSS, QILT) widely used by universities (Arthur, 2020) was uncommon in these studies since they rarely included direct questions about technology or multimedia use in the classroom (Ballantyne et al., 2000; Jian, 2019). Standard SET questionnaires are therefore found to be unhelpful in evaluating innovative practices in teaching (Ghedin & Acquario, 2008; Smith, 2008; Kember, 2003), may have bias against female staff staff (Boring & Ottoboni, 2016; Keng, 2020), provide limited context to understand students' responses, and are unable to capture the complexities underlying

contemporary student learning experiences (Benton & Cashin, 2014; Smith, 2008). It is no surprise then that technology-based methods such as clickers, voting systems, student/audience response systems and classroom communication systems have been increasingly used to obtain more immediate and personalised student feedback (Wood & Shirazi, 2020).

The call for improvements to present practices of TE has brought more attention to students' perceptions of those evaluations. Students are generally found to be more motivated to provide feedback if they can see and understand how their evaluations impact teachers' practices, course content and format (Chen & Hoshower, 2003). They prioritise effectiveness of teaching techniques over a teacher's charisma in their evaluation (Pan et al., 2009), and they hold relatively similar views on what constitutes effective teaching regardless of the discipline (Kember & Leung, 2011). However, most students are not trained in ratings nor psychometrics (Shevlin et al., 2010) and view SETs as an act of compliance and therefore rush through the process (Ahmadi et al., 2001; Gaillard et al., 2011). They are not informed of how exactly their responses in SET questionnaires are used (Kember & Leung, 2011) and appear to have no faith in the evaluation process, which acts as a significant demotivator for engagement (Hoel & Dahl, 2019). Thus, they are not in the best position to provide consistently meaningful and reliable feedback (Chen & Hoshower, 2003). They are nonetheless a common method for measuring teaching quality and if FF/TV is going to be used in class then they are likely the tool that should be improved for use to measure student satisfaction in relation to FF/TV use.

Given the perceived importance of evaluations in improving teaching quality and the limitations of current evaluation practices, this study investigates how university lecturers in

Australia collect and analyse evaluations on their FF/TV use in their teaching and asks what available guidance or support they receive for these tasks. The survey and interview findings were analysed through the lens of Smith's (2008) Four Quadrant (4Q) model and its integrated Active Learning Cycle (ALC) to determine the key factors impacting effective TE of pedagogical use of FF/TV.

11.1.1. The Four Quadrant (4Q) model of evaluation

The 4Q model (Smith, 2008) posits that educators should draw data about their teaching practice or student learning issues from four broad sources to gain a holistic understanding of their teaching quality and enhance the validity of their approaches (Figure 1). It recognises the importance of having multiple sources of evidence to adequately demonstrate teaching effectiveness and provide sufficient data for teaching assessment (Smith, 2008). Items listed under the 'self-reflection', 'student learning' and 'student experience' quadrants are mainly suggestions to diversify lecturers' evaluation sources within each quadrant and enable quadrangulation. Items under 'peer review' provide examples of the types of teaching elements that peer reviewers would typically examine in a peer evaluation process.

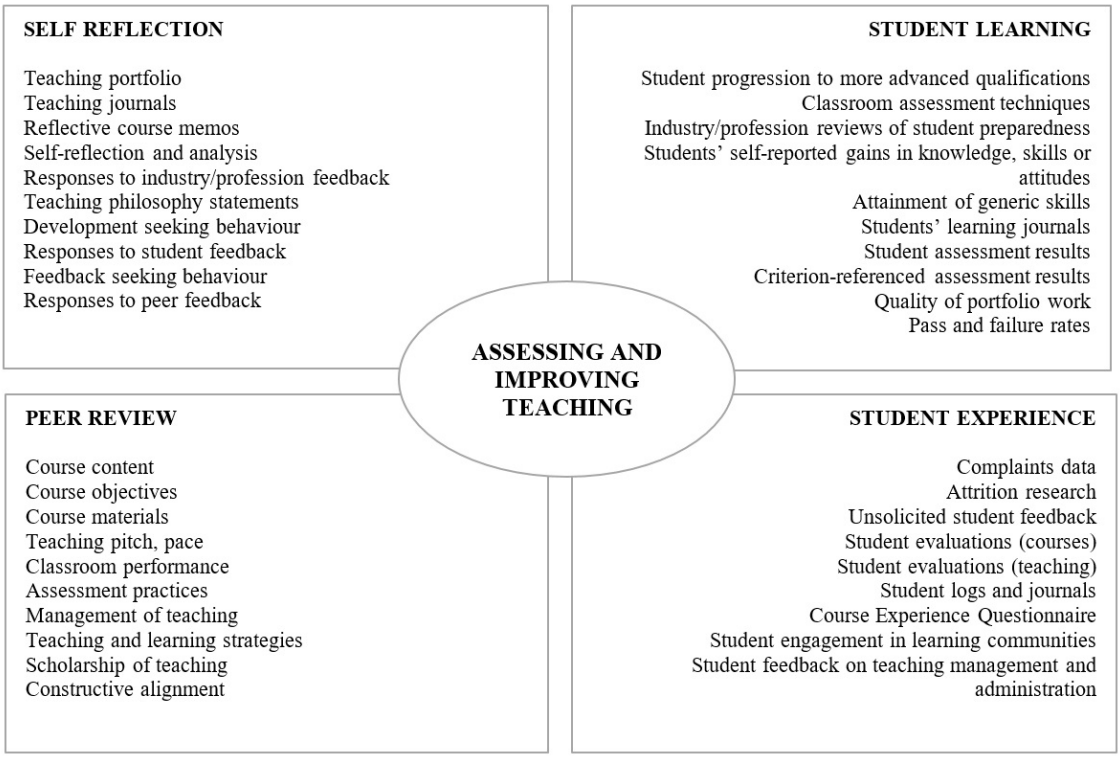

Figure 11.1. *The 4Q model of evaluation (Smith, 2008)*

11.1.2. Active Learning Cycle (ALC)

The Active Learning Cycle (ALC) brings together the 4Q model and action learning research (Pedler, 2017; Ravens, 1980) to emphasise the need for multiple 'iterations of action and evaluation and personal development and organisational development' to find the optimal approach to a teaching practice (Smith, 2008, p. 528). The ALC combines four main phases of teaching ((re)designing, teaching, evaluation, analysis) and the Action Learning Cycle (plan, act, observe, reflect), and then integrates the 4Q model to inform the evaluation stage (Figure 2). This model suits the self-taught and action-based nature of university teaching with FF/TV, in which lecturers develop their pedagogies mostly while 'doing it', especially when training is scarce.

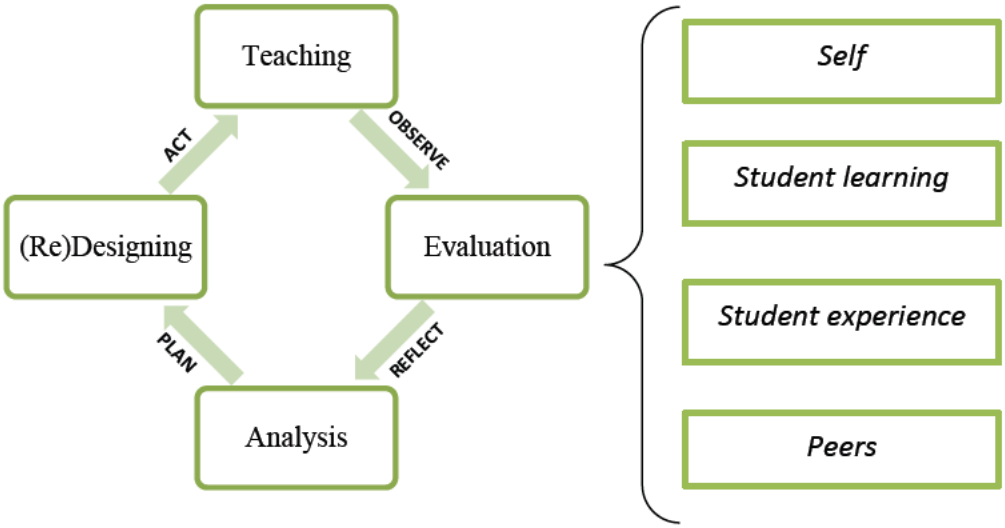

***Figure 11.2**. The ALC of evaluation (Smith, 2008)*

This study uses the 4Q model's four quadrants as a systematic guide for identifying, analysing and discussing participants' diverse experiences in evaluating their teaching effectiveness with FF/TV. The ALC is then applied to explore the relationship between TE and other phases of teaching, which in turn guides the discussion about how the former could be designed to assist the latter's requirements.

11.2. Methods

With ethics approval, a qualitative online survey (Appendix 1) was built in SurveyMonkey and distributed to lecturers at Australian universities via newsletters of higher education networks, email invitations, flyers, and snowball sampling.

The survey yielded 50 anonymous responses (N = 50) over approximately five months, 24% of which arrived between March and May 2022 (Australian universities were forced to move online due to COVID in March 2020 – Smith & Kaya, 2021). These mid-pandemic responses did not deviate from the main identified trends and patterns; some respondents explained they already had both face-to-face and online teaching arrangements in place. Most respondents held permanent teaching positions (68%), some

were casual teaching staff (12%) and some were on fixed-term contracts of one to three years (10%). The majority had between five to more than ten years of teaching experience (90%), and taught courses inclusive of FF/TV for more than five times (72%). Figure 3 summarises their disciplines; the total number exceeds 50 because some respondents used FF/TV in multiple disciplines.

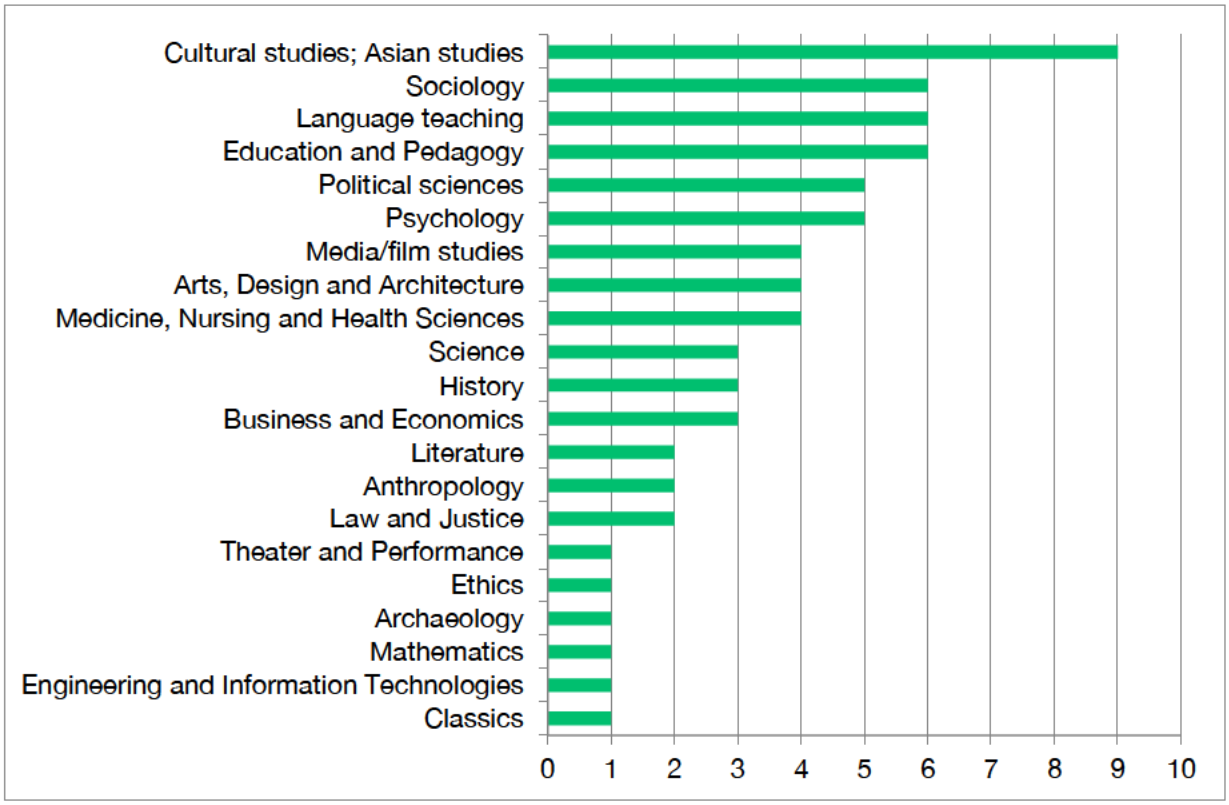

Figure 11.3. *Academic disciplines of survey respondents (N=50)*

Survey results were consolidated thematically to inform semi-structured questions for interviews (Appendix 2). Eighteen audio-recorded interviews that lasted 30-90 minutes provided a more in-depth understanding of each lecturer's experience with TE. Interviewees came from sociology, biology, gerontology, physics, technology, pedagogy and education, Asian/cultural studies, ethics/religion, academic writing and research, English language, history, and film/media studies. Interviewees had between two and over ten years of

teaching experience, and in different employment statuses. Several lecturers experienced teaching in countries other than Australia and across a range of different educational institutions other than state non-religious universities, which indicates a reasonable level of relevance and applicability of research findings to various teaching contexts outside Australia.

To distinguish participants, R1 to R50 is used when quoting survey respondents and L1 to L18 when quoting interviewees. NVivo12 was used to conduct thematic analysis (Braun & Clarke, 2006) of the data. Overall the survey asked 36 questions related to the pedagogical use of FF/TV. Two delved into the pedagogy and the need for evaluation of FF/TV use – the focus of this study.

11.3. Findings

11.3.1. Objectives for using FF/TV

Most lecturers were aware of constructive alignment and they commonly cited their course objectives as integral to their reasons for using FF/TV and implementing related learning activities and assessments. The study identified four interconnected categories of objectives regarding FF/TV use. Example quotes showcase both the objective categories and their relationships with each other:

(1) Skills training

> [teaching with film]'s very good with 21st-century skills: collaboration, empathy […] oral participation […] speech-giving and expressing yourself in a group […] a whole range of skills can be improved. (L17)

> First year, we're strong on [using film] to encourage [students] to find their own sources and research. It seems to work better than spoon-feeding them actually […] trying to make them more independent is the key thing. (L2)

(2) Emotional/cognitive engagement

> [film]'s visual and aural, you can immediately start discussion and debate about [students'] immediate reaction to the film […] that's always been part of my goal – to generate that classroom discussion […] because film is highly sensitive and sensory, [students' ability] to articulate what they've seen, what they've heard is really empowering and exciting. (L3)

(3) Model for film analysis and production

> my first-year course is absolutely holding [students] by the hand as we take them through the techniques of film construction and then we move along the scene, the social messages and so forth. (L8)

> I really like filmmaking […] I love playing with equipment, thinking, problem-solving, troubleshooting, trying to work out technical problems. I love storytelling through shot construction, mise-en-scène, lighting […] it's also about organisation […] in the classroom context, I'm organising the classroom, running a group of people to use equipment and be creative with a similar skillset. (L6)

(4) Illustration/visualisation (of abstract concepts, real-life events, diversity)

> I try to show a diverse array of films to expose [students] to different approaches and contexts to expand their perspectives. (L14)

> the student population is increasingly diverse in culture differences, age and gender […] forms of popular culture, particularly film and TV, can be a really useful way of getting complex issues across and getting discussion going. (L15)

These statements about the objectives of using FF/TV in teaching showed that many lecturers understood the importance of pedagogically accommodating student diversity regarding socio-cultural backgrounds, age, gender, learning levels and learning needs. In practice, most lecturers used a combination of the four objectives in their FF/TV use, but rather explained their TE practices (both collection and analysis) across several objectives.

11.3.2. Results related to evaluation quadrants

Among the 36 multiple-choice and open-ended survey questions about various aspects of FF/TV-assisted teaching (Appendix 1), two questions directly targeted lecturers' experience with evaluation of their FF/TV use in teaching. These two questions directly canvassed the general patterns of TE practices regarding the pedagogical use of FF/TV. Tables 1 and 2 categorise responses to the two survey questions directly about TE and student feedback based on the 4Q model.

11.3.2.1. 'Do you allow any forms of student feedback to help assess the efficacy of FF/TV in your courses?'

Thirty respondents (60%) selected 'Yes' and provided customised answers, while the remaining 20 (40%) said 'No'. Among the 60%, SET questionnaires appeared in the custom answers of 17 respondents. The other practices mentioned are categorised in Table 1.

***Table 11.1**. Evaluation practices other than SET reported by respondents*

Student learning quadrant	Students' work (online discussion forum, reflective essay, lecturer-prepared question handouts)	R5, R7, R15, R22, R28, R35
Student experience quadrant	Informal verbal/oral feedback	R9, R11, R18, R21, R22, R23, R33, R35, R40, R44, R46, R50
	Email check-ins	R23
	One-on-one consultations	R23
	End of topic/course interviews	R49
	Observation	R18

11.3.2.2. 'Do you use any evaluation methods to specifically assess the efficacy of the use of FF/TV in your courses?'

This question targeted practices of collecting evaluations from sources with less student involvement (i.e., peer review, self-reflection). 76% of survey respondents answered 'No'. The remaining 24% (12 respondents) answered 'Yes' and provided similar written answers to the previous question (Table 2).

Table 11.2. *TE methods reported by survey respondents*

Student learning	Analysis of students' works	R45, R44, R40; R33; R22
	Students' written reflections on online discussion forum	R20, R11
Student experience	Standardised formal SET questionnaires	R19, R20, R43, R48
	End of topic/course interviews	R49
	Observation of student reactions	R21, R20

Because there are no questions in formal SET surveys that directly address multimedia use in the classroom, lecturers generally relied on informal, ad hoc, or assessment-based practices to evaluate the effectiveness of their FF/TV use. Neither question revealed all four quadrants of evaluation with self-reflection or peer review practices absent from the survey responses. Interview data did address all four quadrants.

11.3.3. Quadrant 1: Self-reflection sources of evaluation

Participants rarely volunteered self-reflective notetaking as a source of evaluation, but they tended to confirm that they sometimes took notes based on observation to monitor how the course generally progresses, but not in a systematic way for evaluation purposes:

> I take notes myself […] sometimes I write notes under PPT slides […] but it's probably something I'll think about doing more systematically in the future, particularly in terms of a demonstration of film pedagogy itself and whether it's effective. (L15)

Lecturers also took notes of student feedback obtained by feedback-seeking behaviours such as periodically asking students direct questions, conducting short Q&A sessions, or sending check-in emails about how students were progressing through the film-viewing and accompanying class activities. Whilst these behaviours were usually informal, unplanned and anecdotal, lecturers sometimes integrated interactive software applications into their lecture presentations, especially after film-viewing, to seek feedback, survey students' real-time anonymous responses instantly and facilitate discussion afterwards:

> I've encouraged [students] often by saying 'Is this how you want to keep doing it?', 'Is there anyone struggling or not finding it useful?'. (L12)

> I haven't [sought feedback] formally but I've had discussions with students often by email […] deal with it more in a one-on-one situation. (L15)

> One of the first things I do is I put up an Echo360 blank question box that says, "What was your first impression of the film?". Students can privately enter their first impression of the film […] it's important to hear the student voice before I control it […] students need to get in touch with their own thinking about things before they hear from me. (L8)

Apart from feedback, several lecturers also reported seeking and advocating more targeted training to further develop their teaching practices. According to Smith's 4Q model of

evaluation (2008), these development seeking behaviours can be considered as an outcome of self-reflection on one's own pedagogy:

> There's a technical side [to teaching with film] and a pedagogical side. I'm probably a little weak in both […] I like to use [film] but I could learn from [training…] sessions. (L12)

> there are many different teaching techniques and I want to diversify and develop mine further. So far, I have very little opportunity and time. (L7)

11.3.4. Quadrant 2: Student learning sources of evaluation

All interviewees reported using assessment results as an indicator of teaching effectiveness. Rather than quantitative or standardised assessments, most lecturers seemed to favour qualitative and creation-oriented tasks such as discussion boards and oral presentations.

> [students]'d be expected to look at examples from popular culture beyond what was included in the topic content, read more widely to find a topic of research, and pick one feature film to write an essay […] and then they'd do a little oral presentation in the tutorial every week. Also, they write in a reflective interactive online journal every week [about] a magazine article or an excerpt from a TV episode or a short film […] they could also incorporate videos and images and other materials themselves, some get very creative […] I would give them feedback and I get a sense of how they were absorbing and responding to the materials for that journal assessment. (L15)

Some other lecturers reported on visible changes to students' attitudes towards important issues, worldviews and motivations to work and learn throughout the course:

> when [students] start communicating in a different way, seeing the world in a different way, actively seeking out readings […] there's a kind of 'Ohhh' moments where they cut through apathy. I work for that. (L2)

> academics have been saying ‘students don't care, they don't try, they don't do anything, they're not as good as they used to be’ for over a hundred years […] but really, the classrooms just aren't that exciting or interesting to their context, so [you need to] attack the motivation problem […] once you get students working, they start learning. (L17)
>
> this weekend at a dinner thing, a student about to graduate said to me, ‘You know this film you showed first year, it keeps coming back to me’. [Film] can have a delayed impact but also sometimes the most profound experience that will influence them in the future. (L14)

The occurrence of these encounters or observations tended not to appear immediately after FF/TV exposure, which resonated with many lecturers’ observation that FF/TV content can be cognitively challenging, and students therefore require time to process and review other materials.

11.3.5. Quadrant 3: Student experience sources of evaluation

Unstructured observation was practised by all interviewed lecturers. They explained that observing student reactions during and after FF/TV viewing helped determine how relatable or comprehensible the FF/TV content was, how different groups of students preferred to learn with FF/TV, and how often and accurately students referred to the FF/TV content in other learning activities:

> I always listen out for reactions/audience responses. If it's a funny film, are they laughing? If it's a sad film, is there any emotional tension? […] it's a really interesting way of knowing whether or not [students]’re engaged [or distracted]. (L2)

The lack of reactions from students was noted as an indicator of the cognitively challenging nature of processing FF/TV content and synthesising it with instruction and accompanying materials. Only a couple of lecturers who reported using unstructured observation elaborated how the initial ‘hook’ (i.e., indicator of emotional engagement) through FF/TV pedagogically aided students in achieving learning goals:

> if I ask a question [after film viewing] and [students] won't say anything, either the film has really deep themes or has been too intellectually challenging that [some students] can't respond to straight away; they might need to go back to the reading and think about it. (L3)

But they remained vague on whether or how they specifically sought to validate their interpretation of the observed reactions with other sources of evidence, or how they addressed any identified issues through observation.

On the other hand, most interviewed lecturers immediately mentioned SET questionnaires when asked about TE regarding FF/TV use as this is the only formal form of TE at all institutions. However, three lecturers pointed out the lack of coverage on FF/TV and other learning media use, and ten lecturers stressed the overall low response rates and inconsistent quality of feedback. Most lecturers seemed to rely on students' comments (oftentimes complaints) to assess the effectiveness of their FF/TV use, which further limited the usefulness of SET questionnaires towards FF/TV use in their current coverage:

> [SET questionnaires] don't really evaluate media use in class – everything is vague and grouped under 'learning materials' or 'learning media'. (L18)

> in terms of usefulness, [SET survey] is where [students] will complain about films they don't enjoy. (L8)

> [SET questionnaires]'re not very effective, not many students can be bothered […] you take a survey only because you've got a complaint […] it's not so much about my teaching but more the admin stuff, so I'm not getting anything back really. (L10)

> we do the [SET] at the end of each semester but many students don't […] sometimes I get useful feedback and I often make adjustments based on that, but sometimes they contradict one another. There has never been one strong message there, just little bits and pieces. (L14)

Some lecturers raised the complaint-driven motivation of students when providing feedback, which can be disheartening and thus make lecturers react defensively towards the feedback rather than serious consideration:

> when you take a survey, sometimes you only want to have a say because you've got a complaint [students] use their own little Facebook groups to complain about lecturer B or lecturer C. I don't want to have that negative feedback thing, that's why I'd rather have a conversation with the students. (L10)

Countering this tendency, a couple of lecturers recommended a pro-active, honest and open-minded approach to analysing negative student feedback:

> I get feedback every semester and I try to learn from it [students] don't always get it right, but if you look at your [TE] very carefully […] if you're honest […] you'll find things that are true and correct that you agree with and need to be changed. (L17)

> I'd write myself a paragraph saying what my initial actions were and then more about what actions I might take to address some of the comments. There's nearly always a couple of things to act on. (L4)

11.3.6. Quadrant 4: Peer review

As part of feedback seeking behaviours, peer review often arose in interviews when lecturers attested to the effectiveness of FF/TV. Lecturers generally made positive comments about the experience in that it was more personalised, relevant and helpful than standardised evaluation methods:

> I did a peer evaluation last year […] we can sign up to a scheme to have our teaching evaluated […] they send two people who have trained to be evaluators: one person from within the faculty, so they're probably used to teaching similar things to you, and one person from completely outside the faculty […] they usually say they learned a lot. (L1)

A few lecturers who played the evaluator role in the peer review process reported that the experience made them reflect on the disciplinary differences reflected in the use of FF/TV in teaching:

> I've certainly peer-reviewed other lecturers, particularly in Arts, where they would show an entire movie […] and then the students had to critique it […] it's interesting, [lecturers in our discipline] usually use short clips only. (L11)

Overall, regardless of the quadrant, L13 emphasised the importance of planning and integrating a range of ethical and practical considerations into the evaluation practices, which will be elaborated further in the Discussion:

> if we apply research merit and integrity to teaching, then […] do you have the skills to manage any fallout? Have you put in place safety nets, like if [students] have trouble, do they have someone they can speak to? […] Can they do an alternative assessment task if required? […] What do you do to respect the diversity of the students that you're teaching? […] What are the values that you hope to gain by showing this clip and having this discussion? What might be the risks? Do the risks outweigh the benefits or the other way around? (L13)

11.4. Discussion and recommendations

Survey and interview findings confirmed the trends identified in the literature regarding TE practices in higher education and those specifically related to FF/TV use. Standardised formal SET questionnaires emerged from the survey results as the most frequently mentioned evaluation practice, but lecturers largely viewed these questionnaires as a source of student complaints and conflicting information with little relevance and usefulness to their FF/TV teaching context. There were exceptions to this criticism in which an open-minded approach was recommended to filter through the collected data and find 'good advice' for teaching improvements. On balance, although open-mindedness is a helpful contributor, lecturers' attitudes towards SET questionnaires were mostly shaped by how other evaluation sources contextualise (i.e., explain, support, contradict or have no

correlations) their SET results. This finding reiterates the importance of using the four quadrants in collecting and interpreting TE data (Smith, 2008).

Research findings confirmed the importance of using other evaluation sources to fill in what SET questionnaires and unstructured observation lacked. These include student assessment results, students' learning journals, self-reported gains from students, lecturers' self-reflection and feedback seeking behaviours, and peer review practices. The overall findings are summarised in Table 3, which shows the reported objectives of FF/TV while drawing on the survey and interview results to identify where each evaluation practice sits in the four quadrants of evaluation. Table 3 also identifies methods suggested and inspired by participants.

Table 11.3. *Objective-based in-class methods of evaluation collection and usage*

Main objective of FF/TV use	Commonly associated learning activities/assessments	Possible evaluation collection methods	Possible evaluation analysis
SKILL TRAINING	• Lecture and provide readings on basic cinematography and film analysis • General and specific guiding questions • Formative assessments (e.g., weekly online journal, short essay writing) • Conduct error-detecting exercises • Pair/group/class discussion; online discussion forum on LMS • Individual or group project of film analysis	• Monitor and analyse students' work (Q2) • Maintain ongoing interactive feedback channels on LMS (Q3) • Schedule regular feedback sessions for each activity using interactive apps (Q2) • Conduct exit interviews or surveys (Q3) • Plan notetaking (e.g., templates, checklists, digital note-taking apps) (Q1)	• Study collected feedback for future adjustments (Q3) • Discuss feedback with colleagues, teaching specialists/learning designers from institutional learning and teaching centre (ideally those who co-design/co-teach film-inclusive courses) (Q4) • Compare informally collected feedback with SET survey results (Q2 and Q3)
EMOTIONAL ENGAGEMENT	• General guiding questions • Post-film pair, group, class discussions • References to film scenes throughout lectures	• Structured observation of student reactions and discussions (Q1) • Planned notetaking (Q1) • Devise guiding questions for self-reflection on teaching ethics (Q1) • Use interactive apps (e.g., Mentimeter, Echo360) to collect anonymous feedback (Q2)	
MODEL FOR VIDEO/FILM PRODUCTION	• Class discussion • Hands-on experience with equipment • Individual or group project of film production	• One-on-one interactions (Q2) • Informal Q&A conversations (Q2) • Monitor and analyse students' works (Q2) • Plan notetaking/recording techniques (e.g., templates, checklists, digital note-taking apps) (Q1)	

ILLUSTRATION; VISUALISATION	No clear patterns identified	Depends on learning activities and assessments	

The learner-oriented and qualitative approach to evaluation of the reported practices afforded more flexibility to accommodate student diversity and complexities of university teaching and learning, facilitated more meaningful conversations and interactions in and outside the classroom, and enabled more targeted pedagogical improvements. However, compared to SET questionnaires, the qualitative evaluation practices demand more time and effort to succeed in producing useful responses (Steyn et al., 2019). Given that pedagogy development with FF/TV is mainly self-taught, most lecturers appeared to implement qualitative evaluation in an unplanned and unstructured manner, dictated by their individual personal motivations such as employment status, scheduling, teaching philosophy and course objectives. This echoes Smith's (2008, p. 519) observation that any informal/optional provision of guidance, however well-designed and accessible, still relied on 'individual engagement' (i.e., self-motivation and application) of lecturers. This explained why the 4Q-ALC model was implemented as part of a formal process that facilitated collaboration between lecturers and academic developers.

Recognising the ubiquitous and established state of SET questionnaires across institutions globally, this study makes two practical recommendations towards optimising existing SET quesionnaires and promoting the integration of other available evaluation practices to assess and improve FF/TV use. Firstly, a specific FF/TV-related set of validated and reliable questions needs to be added to enhance the questionnaires' relevance to FF/TV use. Table 4 proposes some recommended sample questions under each theme related to the findings from this study.

Table 11.4. *Potential SET questions to address the specific aspects of FF/TV use*

Theme of consideration	Sample questions
Objectives	○ Based on your understanding, what were the main objectives of the lecturer's use of FF/TV in this course? Select all that apply.
Self Reflection (Q1)	○ Were there opportunities for you to reflect on how the lecturer's use of FF/TV in class relates to your own context? If yes, please provide some examples. ○ Were there opportunities for you to reflect on how the FF/TV content use in class suited your learning preferences? If yes, please provide some examples.
Student Learning (Q2)	○ Rating scale: How useful was the lecturer's selection of FF/TV content to help you achieve the intended learning outcomes? Please explain your rating. ○ Among the skills stated in the intended learning outcomes, which one(s) did the lecturer's FF/TV use help you improve? Select all that apply and please explain your selection.
Student Experience (Q3)	○ (Dis)Agree scale: The benefits and risks of used film clips was clearly explained to you prior to screening by the lecturer. ○ Were there any significant delays to your access to the FF/TV content required for the course due to technical issues?
Peer Review (Q4)	○ Rating scale: How useful were class activities that involved peer participation/collaboration in relation to FF/TV use? Please explain your rating.

For the latter purpose, the study integrates these themes into Smith's (2008) ALC model to address the specific concerns of teaching with FF/TV (Figure 2). A lecturer's entry point into the cycle depends on where they stand in their own pedagogy development regarding FF/TV. For example, if they start from the Designing phase, they need to undergo a comprehensive assessment, preferably with assistance from academic developers, to ensure their teaching design demonstrates alignment between the course and the FF/TV use objectives in teaching and learning activities. The design also needs to have transparent measures in place to

accommodate student diversity and monitor the impact of the lecturer's personal idiosycracies on the designing process. It also requires institution-approved measures to ensure the classroom use of FF/TV is lawful and ethically safe (i.e., trigger warning, copyright issues, teaching integrity as discussed by L13), and institution-provide technologies and resources to optimise teaching and evaluation processes related to FF/TV use is technologically well-prepared. The importance of this integrated understanding of collecting and using evaluations about FF/TV use echoes that of the TPACK (Technological, Pedagogical And Content Knowledge) model, in which technology use needs to consider the domains of pedagogy and content knowledge (Koehler & Mishra, 2009).

Furthermore, the designing process also involves planning accessible evaluation practices (other than SET) from all four quadrants to be used throughout the Teaching phase. These practices need to be structured around the goal of collecting student and peer feedback and establishing whether the teaching design satisfies all three themes. This goal is identical to adding SET questions, except feedback collection occurs throughout the Teaching phase instead of at the end. The fact that FF/TV-related evaluation practices reported in this study only covered a few of sources outlined in the 4Q part of the ALC suggests that there is much untapped potential of evaluation practices that can enhance teaching effectiveness with FF/TV in universities. This is why Smith (2008) recommended involving academic developers in the ALC as early as possible to explore the options before implementing lecture plans.

During the next step of putting the design into action (i.e., Teaching), observation of students' reactions and other learning indicators explicitly becomes a planned activity – rather than unstructured. The results of such observation inform the Evaluation phase. Ideally lecturers would already be collecting evaluation data using the planned 4Q sources by the

time students take SET questionnaires. The data collected throughout the Teaching phase can now be used to reflect on and contextualise SET results, facilitating a quadrangulative analysis of evaluation data. In the Analysis phase, the three themes then guide the comparison between the designed plans and the actual outcomes of those plans to identify any gaps in fulfilling the considerations. This informs the next round of planning to redesign (i.e., making necessary changes) the teaching and learning activities to reach more effective achievement of learning outcomes when teaching with FF/TV.

11.5. Conclusion

Overall, this study advocates Smith's (2008) rationale behind enforcing the 4Q-ALC model formally across the institution so that lecturers are both motivated and assisted by academic developers to conduct effective evaluation practices. The study identified objectives and areas of evaluation related to the 4Q model that are specific to the context of teaching with FF/TV in order to guide (1) the development of new SET questions and (2) the integration of various TE practices into the full teaching cycle.

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CHAPTER 12

CONCLUSION:

FROM MEDIA CONTENT USERS TO MEDIA-INCLUSIVE KNOWLEDGE CREATORS

The thesis aimed to substantiate the important role of feature films and television series (FF/TV) as integrated instructional materials in higher education, and to identify ways in which university lecturers can uncover the full potential of FF/TV in their disciplinary teaching. At the

beginning of the thesis, three research questions were posed in order to guide the data collection and analysis processes:

(1) What do lecturers already know and do in this space, and in what ways have institutions and academic developers been enabling teaching practices involving FF/TV?

(2) What are the key considerations that lecturers need to know to effectively integrate pre-made mass-consumed multimodal media content and technologies such as FF/TV into their pedagogy?

(3) What training and teaching evaluation resources would be useful to help transform lecturers from FF/TV users to FF/TV-enhanced knowledge creators?

Answers to these questions are presented across five results chapters. All phases of teaching with FF/TV – training, planning, securing necessary resources, delivery, evaluating and improving one's practice accordingly – are interconnected. While the results chapters provide the full context of the research findings, this chapter organises them into the order of the proposed questions to specifically answer each question. In doing so, this concluding chapter fulfils the research aims of informing our collective awareness and knowledge base about the pedagogies practised at the intersection of education, media and entertainment, as well as identifying future research directions.

12.1. What do lecturers already know and do in this space, and in what ways have institutions and academic developers been enabling teaching practices involving FF/TV?

Most lecturers involved in the project were aware of FF/TV's multiple merits in teaching and learning. Coming from different disciplines, they described a range of practices that they used to integrate FF/TV into the instructional phases and processes. However, the majority of

participants in this project tended to highlight the merits and trivialise the challenges they encountered as unavoidable 'technical issues' or simply reported 'no problem'. As reported in Chapter 9, many of those participants also reported relatively low levels of awareness about elements of film literacy and technological knowledge, which indicated blind spots in their knowledge about various technologies involved in the pedagogical integration of FF/TV. Unlike most survey respondents whose involvement with the project stopped at the survey, interviewed participants were engaged in reflection and elaboration on their answers about challenges with FF/TV. In such cases, many recalled a range of challenges that had been identified previously in the literature (and thus informed the survey); two also admitted to having insufficient experience.

While these findings are line with the existing literature on the use of FF/TV in teaching, this research specifically identified four distinct pairs of merits and challenges that often go hand in hand. Using an interdisciplinary theoretical framework including Cognitive Load Theory (CLT), Dual Coding Theory (DCT), Visual Literacy (VL) and Film Literacy (FL), the research demonstrated that certain merits and challenges actually share the same roots that lecturers should be more aware of when designing instruction with FF/TV. These pairs involve four aspects of teaching with FF/TV: student engagement, information retention, diversity/sensitivity accommodation, and student learning environment (Figure 12.1).

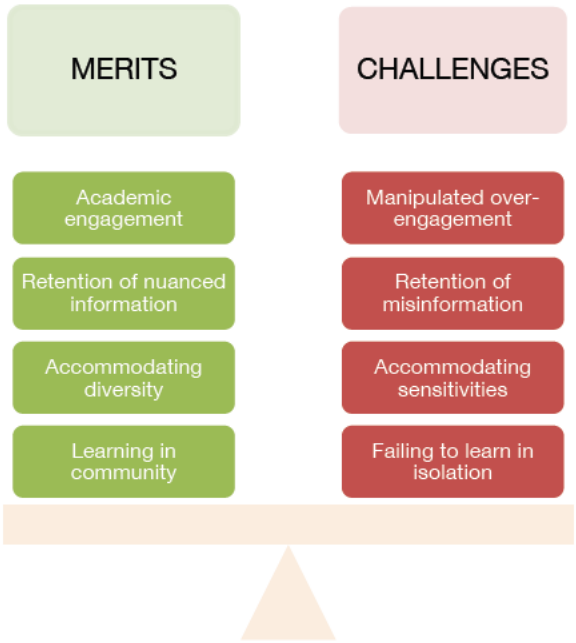

Figure 12.4. Four pairs of merits and challenges of using FF/TV in teaching

The first pair – academic engagement versus manipulated over-engagement – evolves around the emotionally engaging qualities of FF/TV towards the audience that make FF/TV appealing instructional materials but may also distract or confuse if not strategically framed in instruction. The second pair – retention of nuanced information versus retention of misinformation – refers the FF/TV's ability to form long-lasting memory of information upon exposure, irrespective of the nature of the information, which may result in counter-productive learning outcomes if their content is incoherent with instruction. The third pair – accommodating diversity versus accommodating sensitivities – addresses the idea that the rich and relatable coverage of FF/TV content is helpful in catering to students' increasingly diverse backgrounds, interests and learning preferences, although the same coverage makes it more challenging for lecturers to navigate sensitive content that might trigger students from certain backgrounds. The fourth pair – learning in community versus failing to learn in isolation – brings together the beneficial effects of FF/TV on students' attitudes towards

learning when screened communally, as opposed to problems that the same FF/TV representations can pose when consumed individually.

By linking these separate merits and challenges, the research emphasises that the issue of awareness in this space is not about 'full awareness' or 'no awareness'. Rather, lecturers operate on fluctuating levels of awareness depending on the aspect of teaching with FF/TV that is accentuated by their own teaching experience with FF/TV. There are also other factors impacting such awareness such as each individual's background expertise (qualifications, training experience relevant to pedagogical FF/TV use), disciplinary-specific curriculum requirements, the characteristics of their student populations, the quality of their teaching evaluations, and the self-taught methods that each individual use to improve their FF/TV integration.

Although a holistic awareness of FF/TV's dual merits and challenges is necessary for successful integration of FF/TV into teaching, this research found that there has been a serious lack of institutional guidance and academic development in this space. The mostly self-taught nature of the teaching practice identified throughout the literature and research findings point to an unfortunate reality that lecturers have been integrating FF/TV into their teaching without a fully informed awareness of these FF/TV dual traits or the trained skills to effectively reconcile them. To worsen matters, multiple lecturers complained about the abrupt termination of certain technological facilities and services at some universities, impacting their ability of deliver lectures that involved FF/TV. Research findings suggest that institutions have the tendency to make decisions on technological provision and changes in isolation from considering the pedagogical needs of the lecturers (the users).

12.2. What are the key considerations that lecturers need to know to effectively integrate FF/TV into their pedagogy?

In this research, FF/TV are viewed as a form of media technology that is used in university teaching. Since the focus of the project revolves around the development of good pedagogy with FF/TV irrespective of the discipline, the TPACK model was used to guide the analysis of lecturers' experience with FF/TV based on the relationship between Technological Knowledge (TK), Pedagogical Knowledge (PK) and Content Knowledge (CK). In doing so, the use of relevant technologies and the design of instruction around FF/TV can be properly situated in meaningful teaching and learning contexts. This research identifies three required types of technologies and four pedagogical processes that lecturers need to undertake to integrate FF/TV into their teaching.

12.2.1. Three types of technologies required for FF/TV integration

Understanding clearly what technologies are required for this teaching practice and how to appropriately apply them to different planning and delivery processes is crucial to effective pedagogical integration of FF/TV. These processes include film production, film delivery and film integration; there are thus three corresponding types of technologies, which have been changing over time (Figure 12.2). All three types of technologies include a practical aspect and a theoretical aspect. The practical aspect involves the physical tools, devices or computer software applications (i.e., the technologies themselves) and the practical skills (i.e., technological knowledge – TK) required to use them appropriately. The theoretical aspect covers the relevant pedagogical knowledge (PK) and content knowledge (CK) specific to their teaching contexts that lecturers need to utilise for optimal use of those technologies in FF/TV integration.

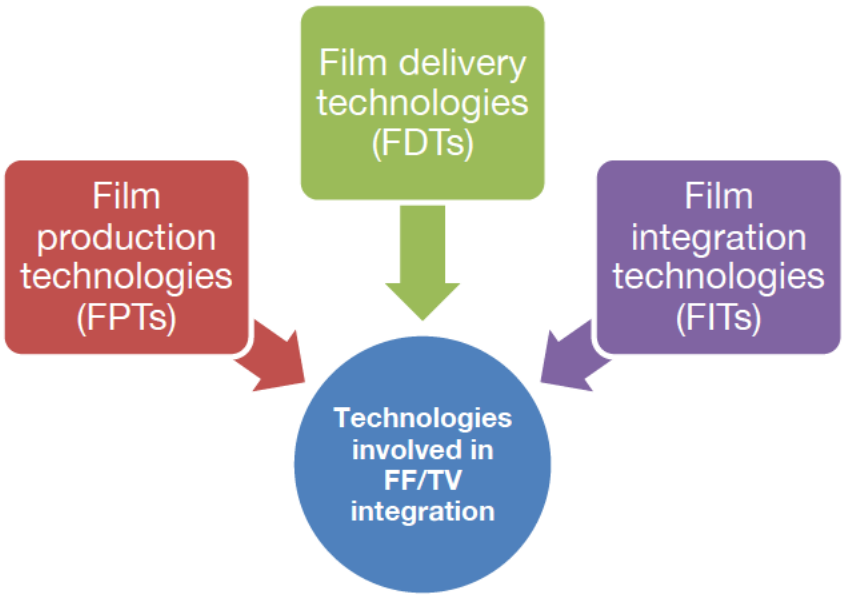

Figure 12.2. Three types of technologies involved in pedagogical FF/TV integration

In the context of teaching with FF/TV, the domain of Film Production Technologies (FPTs) includes both the physical equipment required for filmmaking and the film grammar conventions that regulate cinematographic techniques (i.e., film literacy). Film Delivery Technologies (FDTs) refer to the knowledge and skills related to sourcing legitimate FF/TV content that is compatible to classroom facilities (e.g., DVD/Blu-Ray/4k players, download access, streaming services, classroom media facilities for film screening), and to operating those technologies smoothly. Film Integration Technologies (FITs) refers to the awareness, access to and skills to use film integration technologies (FITs) (e.g., video trimming tools, student response systems, presentation software applications) to design learning and implementing activities and/or assessments inclusive of FF/TV.

Ideally institutions are responsible for providing relevant technologies and reliable user training across all three types to fulfil lecturers' needs when integrating FF/TV. However, this has not usually been the case in Australian universities. Through the lens of TPACK

(Technological, Pedagogical And Content Knowledge), multiple awareness and knowledge blind spots were identified throughout the survey and interview data, which appeared to have seriously affected the effectiveness of FF/TV integration towards achieving learning/teaching goals. For example, the scarcity of FF/TV content available through university libraries, compounded with obsolete DVD facilities in classrooms, was reported to hinder lecturers' ability and motivation to invest in pedagogy development with FF/TV. Some lecturers with extensive TK industry training as their CK (e.g., media/film production courses) showed blind spots in PK, resulting in sub-optimal methods being adopted for screening FF/TV and designing instruction around FF/TV. All three domains of knowledge — TK, PK and CK — need to work together for effective FF/TV integration; the lack of academic development resources that focus on the pedagogical side of FF/TV integration is a common cause of blind spots, resulting in sub-optimal use of FF/TV in teaching.

The study proposes a guiding framework that demonstrates how learning about these three types of film-related technologies helps improve lecturers' TK, TPK and TCK. As illustrated in Figure 9.3, learning how to use FDT boosts lecturers' general TK by exposing them to different methods of sourcing media content and screening them for teaching using the classroom facilities available to them. Learning how to analyse FPT integrates TK and CK – hence developing TCK – as lecturers need a working knowledge of cinematography to critically analyse and assess FF/TV's suitability for disciplinary teaching. Learning how to use FIT meaningfully combines TK and PK – hence, developing TPK – as lecturers need to be aware of what technological tools can best enable integrating FF/TV content into their planned learning activities and assessments.

12.2.2. Four pedagogical processes of teaching with FF/TV

As detailed in Chapter 10, four broad processes are crucial to responsible integration of FF/TV into teaching. These include selecting FF/TV, preparing it for teaching, screening and designing instruction.

While each lecturer had their own set of priorities, the majority filtered FF/TV selection through balancing availability, safety requirements (legality, appropriateness) and pedagogical requirements (accuracy, relevance, approachability/teachability). Each requirement has serious implications on the subsequent design and delivery of FF/TV-enhanced pedagogies. Many lecturers realised the importance of segmenting FF/TV content into small clips and building instruction and learning activities around film-viewing to minimise distractions, reduce students' cognitive load, enhance the formation of memory about the learned knowledge and monitor triggers more effectively. Four different techniques were identified from the dataset that can effectively address the challenges of screening full texts and also help students manage their multimodal cognitive tasks. These include mixed-length screenings, pausing, image-sound separation and the alienation effect. Each of these techniques was practised by lecturers to monitor students' cognitive load, provide the appropriate amount of guidance to students, teach them film literacy and critical film analysis, and safeguard them from emotional manipulation of FF/TV. Several interviewees recognised the paramount role that instruction plays in the success or failure of integrating FF/TV. When designing instruction for lessons that involve FF/TV pedagogy, it is good practice for lecturers to consider whether their instruction is coherent in terms of content (do all elements present a united message?), skills training and requirement (are there elements in instruction to address the skills required of students to achieve learning outcomes?), and learning

environment (is the classroom setting optimal for delivering instruction and student learning?).

Adopting a discipline-neutral and goal-oriented approach, Chapter 10 selects and provides concrete recommendations on a range of commonly used instructional means across disciplines (e.g., lectures, guiding questions, discussion, readings, slideshows, and learning assessments) based on the principles of FL and CLT/DCT-applied learning effects.

12.3. What training and teaching evaluation resources would be useful to help transform lecturers from FF/TV users to FF/TV-enhanced knowledge creators?

This question targets the entry (training) and exit (teaching evaluation) points of delivering teaching with FF/TV. Motivated by the ultimate goal of transforming university lecturers from FF/TV users to FF/TV-enhanced knowledge creators, the research identified four domains of academic development (AD) and three principles of teaching evaluation (TE), in which recommendations were made to improve the quality of university teaching with FF/TV.

12.3.1. Four domains of academic development

This research found that systematic and reliable institutional support was essential in advancing university teaching with FF/TV. As discussed in Chapter 8, four domains of academic development (AD) provision by universities need to be adequately provided before lecturers can significantly and consistently succeed in integrating FF/TV into their disciplinary teaching teaching. These include (1) access to FF/TV resources and relevant technologies; (2) technological and media awareness and skills; (3) film literacy (cinematography, film analysis, trigger warnings); (4) pedagogies using FF/TV. The first domain lays the foundation for the design and delivery of AD resources in the other three domains.

Access to more diverse and FF/TV titles (typically via library services) that are free from copyright constraints helps expand lecturers' choice when it comes to FF/TV selection, which increases the likelihood of identifying the optimal content for teaching (especially with more science-focused courses). Access to compatible FDTs enables more effective integration of FF/TV into instruction and smoother FF/TV viewing experience for students in class. Built on the institutional provision of relevant resources and technologies, basic AD should aim to keep lecturers updated on what is available and copyright-legitimate to use in class, how to search for them, and to train lecturers to use the provided technologies effectively for their contexts. To achieve these aims, universities are strongly encouraged to involve library staff and academic developers or teaching and learning staff in a collaborative discourse (such as the Learning by Design model discussed in Chapter 5) to create in-demand workshops, online tutorial videos, and on-demand one-on-one consultations. Such involvement and collaboration need to be established over time, so that non-teaching staff acquire an updated understanding of lecturers' teaching requirements related to FF/TV.

More advanced pedagogy-focused AD resources about film literacy typically would include coverage about cinematography, film analysis and trigger warnings. Rather than one large workshop on cinematography, these resources should seek to scaffold knowledge into different levels and types of needs so that lecturers can select what is the most suitable and efficient method for them to learn. This research therefore recommends inviting lecturers with film or media expertise to collaborate with academic developers to organise regular theme-based interactive forums for lecturers across disciplines. In addition, professionally created online resources with recordings of those forums, alongside glossaries of cinematographic terms, examples, explanations, and further readings/videos, would be

immensely helpful. These AD resources seek to help lecturers understand how FF/TV representations achieve effects on viewers, guide them through the unpacking and interpreting processes of FF/TV content, and inform their cultural understanding behind the legal requirements of trigger warnings.

Directly addressing the practical aspects of FF/TV-assisted pedagogies, AD resources need to also integrate all three elements of TPACK (TK, PK, CK) in designing and delivering FF/TV-enhanced teaching. Lecturers need the practical access and skills to bring suitable FF/TV content into their classroom, and they also need to know how to align such media integration with their stated learning outcomes. In other words, lecturers require targeted assistance in ensuring their FF/TV-inclusive pedagogies (12.2.2) are actually effective prior to implementation. Towards this goal, this research highlights the importance of understanding and explicitly applying film-related theories (visual literacy, film literacy) and evidence-based learning theories (dual coding, cognitive load, multimedia learning) into instructional design. Since this requires a cross-disciplinary expertise of content knowledge, pedagogy and media technology (FF/TV), collaboration among lecturers, teaching specialists, learning designers, academic developers and staff with media expertise is recommended.

12.3.2. Three principles for good practices of teaching evaluation

The current practices of collecting and using teaching evaluations (TE) related to FF/TV integration have been found to be lacking, informal and unstructured. For example, the most common method of contemporary TE is the use of SET questionnaires, which do not substantially cover any media use in the classroom, let alone FF/TV, and have been generally found to make little contribution to actual teaching advancement. Lecturers mostly rely on unstructured observation, student assessment outcomes, verbal feedback and other

unplanned methods to determine the effectiveness of their FF/TV use. Most participants appeared to not have thought about TE at all regarding the FF/TV element in their teaching.

This arguably has led to a waste of valuable information sources that could improve the quality of FF/TV-enhanced teaching. To prevent this, the research identifies three key principles to guide the necessary changes to the current TE practices specifically related to FF/TV use.

First, the collection of TE data needs to be quadrangulated from sources in four broad quadrants, which include self-reflection, student learning, student experience, peer review (specific sources can be found in Figure 5.2, Chapter 5). This allows lecturers to obtain a comprehensive and objective understanding of their teaching effectiveness with FF/TV.

Second, the results of such quadrangulated TE collection need to be systematically interpreted and applied to inform all phases in the teaching cycle, including planning (upon training acquisition), designing/re-designing of instruction, teaching/acting, observing and analysis of teaching performance. This principle aims at correcting one common flaw of SET questionnaires in that there is no formal step to ensure student feedback from those questionnaires is properly and transparently used for teaching improvement (Figure 11.5).

Third, the development of such a forward teaching cycle including the TE phase needs to consider a three-fold set of considerations – pedagogical considerations (PC), contextual considerations (CC) and technological considerations (TC). As explained in Chapter 11, this principle helps ensure that not only the well-rehearsed factors (e.g., constructive alignment or risk management) but often overlooked factors (e.g., lecturers' preconceptions/biases and students' diverse contexts) are also thoroughly considered (Figure 11.4).

Specific recommendations are also detailed in Chapter 11 regarding FF/TV specific questions to be added to SET questionnaires (sample questions included – Table 11.4) and in-class methods of effective TE collection and usage based on lecturers' main objectives of FF/TV use (Table 11.3).

12.4. Future directions

There is a wealth of informally gained knowledge about FF/TV use in teaching and informal initiatives that has undeniable merits when facilitating pedagogical changes (Pleschová et al., 2021; Roxå and Mårtensson, 2009, 2015; Thomson et al., 2020). However, exclusively informal AD in multimodal teaching practices depends on too many fluctuating and unpredictable circumstances of individual lecturers to provide good and consistent teaching quality to students. Formal AD can address this shortcoming by lifting the burden of starting from scratch for lecturers new to multimodal teaching, or the intimidation of constantly updating self-taught methods for more experienced lecturers. Considering the value of formal training in enhancing educators' perceptions and attitudes towards various pedagogies (Chadha, 2015; Vilppu et al., 2019; Norton et al., 2010; Ödalen et al., 2019), adding formal layers to the practice may also help alleviate resistance from educators who view FF/TV use as frivolous (e.g., Marquis et al., 2020; Peacock et al., 2018; Sealey, 2008). Formal AD therefore can harness existing knowledge to, and promote more consistency in, FF/TV-assisted teaching practice and subsequently student learning.

Many participants in this research advocated multiple benefits in formalising the pedagogical integration of FF/TV as a recognised teaching method and adopting a collaborative learning-by-design approach when supporting the collective development of FF/TV-enhanced teaching. However, they also voiced concerns about major obstacles that are

deeply rooted in the research-first mindset at many universities and how teaching has been situated in disciplinary silos. To overcome these obstacles shared across disciplines and teaching contexts, as demonstrated throughout the findings, all stakeholders – lecturers, academic developers, leaders of departments, faculties and universities – play different yet complementary roles in building institution-wide provision of such integrated formal AD.

While change is identified as necessary, lecturers agreed that it will be gradual. Future research may be dedicated to exploring sustainable pathways for incorporating formal AD and informal initiatives by lecturers regarding FF/TV pedagogy development; for harnessing diverse expertise of existing teaching and academic staff to design accessible AD programs that are carefully scaffolded to accommodate different need levels and busy schedules; for transferring knowledge and skills between experienced and emerging teaching communities so that past effort can be paid forward; and for including student perception and feedback more effectively in the design and implementation of said processes. Towards this aim, future research should first seek to assess the effectiveness of frameworks, models, principles and recommendations proposed in this research across different teaching contexts, disciplines and levels. This will help identify both strengths and weaknesses under each different circumstance to guide educators' and academic developers' application or implementations of the research findings.

Future research could expand the scope of data collection (media analysis, website analysis and sample size of surveys and interviews, research location) to further understand the causes of challenges with using FF/TV in teaching and find ways to address them. The media analysis should be explanded to include other forms of mass-produced and mass-consumed audio-visual materials also commonly used in teaching, such as documentaries or

music videos, that also share many key similarities with FF/TV. Such inclusion will enhance the practicality and relatability of the practice as some educators might have personal preferences against FF/TV, which might lead them to dismiss the relevance of the project to their own practice, even though it could offer them helpful insights. Likewise, future research should expand the scope of website analysis to include teaching-focused universities to yield a wider and more updated outcome of academic development availability related to pedagogical use of FF/TV. Both will likely cover a more diverse population of university lecturers and their individual practices across more disciplines to generate a more interdisciplinary and inclusive understanding of FF/TV's merits and challenges in teaching. Given the predominantly qualitative and sophisticated nature of the information being asked of participants, this understanding may contribute a more appealing participant recruitment to expand the sample of survey and interview participants.

12.6. Closing remarks

This thesis asserts the values and challenges of using feature films and television series in 21st-century university teaching, which deserves more attention and investments from both lecturers and institutions to uncover the full potential of these media technologies. Each thesis chapter provides the practical and well-grounded information and tools to pave a road directed towards future improvement of our lecturers' integration of feature films and television series in teaching across all disciplines. This thesis in its entirety seeks to guide future researchers and projects towards the next important landmark.

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APPENDICES

APPENDIX 1 – SEARCH MATRIX & ANALYSIS OF GO8 UNIVERSITY WEBSITES

THE UNIVERSITY OF ADELAIDE								
Course	**Duration**	**Targeted participants**	**Compulsory?**	**Delivery mode**	**Assessment**	**Fees**	**Content/ Learning outcomes**	**FF/TV related content?**
Graduate Certificate in Education	6 months full-time or part-time equiv.	- Bachelor degree or equivalent - Successful completion of an Australian year 12 qualification with a minimum pass in an accepted English language subject - English tests accepted: IELTS, TOEFL, Pearsons, Cambridge	No	F2F	Seminar participation, essays, reports	$11,750 (full) $17,500 (International student)	Educational Policy Studies Curriculum Development and Innovation Pedagogical Engagement and Learning Assessment and Evaluation in Education	No reply
Workshop: Introduction to University Teaching	3.5 hours	All new academic staff, sessional staff and tutors	Yes	F2F	None	Free	Focus: student-centred learning environments, active learning, feedback, assessment and interactive presentation strategies (for small and large classes). It will also enable you to begin the development of your teaching philosophy through reflective practice.	"We do use a little of Ferris Bueller's day off in the first workshop, but not much after that. I am happy to help you out, especially if you have any other dear [sic] of how we could use film and tvs heroes to make our workshops better."
Workshop: Developing Educators	7.5 hours	All new academic staff, sessional staff and tutors	No	F2F	None	Free	Explore ways in which 21st century students learn and support you in building engaging learning environments through a Universal Design for Learning (UDL) framework.	No reply

Sessional Teaching Program	Self-access	Everyone	No	Online, reading-based resources	None	Free	Total 12 modules: (1) Learning and Teaching Guide, (2) How Students Learn, (3) Learning Environments, (4) The Learning Curriculum, (5) Student Diversity, (6) Lectures for Effective Learning, (7) Tutorials for Effective Learning, (8) Practicals for Effective Learning, (9) Fieldwork for Effective Learning, (10) Online for Effective Learning, (11) Assessment for Effective Learning, (12) Evaluation for Effective Learning.	No FF/TV involved

THE UNIVERSITY OF MELBOURNE								
Course	**Duration**	**Targeted participants**	**Compulsory**	**Delivery mode**	**Assessment**	**Fees**	**Content/ Learning outcomes**	**FF/TV related content?**
Seminar: Learning tasks and feedback – Using video in assessment	2 hours	Staff in need	No	F2F	None	Free	One way to approach assessment is through the lens of Universal Design for Learning (UDL). The three principles of UDL identify how multimedia is integral for supporting all learners. In this presentation, [presenter] will briefly highlight [their] integration of UDL through the use of video tasks and feedback to better engage and support student learning.	"The seminar that I had with staff was about the use of video capture (e.g., screen capture of assignments and such) with instructor voice over as effective feedback mechanisms for students. There wasn't any TV of film involved."

Melbourne Teaching Certificate	Semester-long program, total 10 hours (one-day intensive forum + one optional consultation + half-day final forum)	University and affiliated staff with teaching or student support responsibilities	Yes	F2F	Completion of 2 seminars, a written assignment and a presentation	Free	On completion of the Melbourne Teaching Certificate, participants should: -Demonstrate theoretical and practical ideas and strategies for enhancing learning and teaching; -Collaborate with colleagues from diverse academic and teaching backgrounds; -Critically discuss challenges experienced in their particular teaching contexts; -Acquire an appreciation of the scholarly underpinnings of learning and teaching practice in higher education; -Gain insights into the particular teaching environment of the University of Melbourne.	No reply
Foundation of Teaching and Learning for Graduate Researchers	3 workshops, 2 hours each, total 6 hours	Currently enrolled graduate researchers at the University who are new to teacher	Yes	F2F	Completion of all 3 workshops	Free	On completing the FTLGR program, participants can expect to: - Be able to discuss principles of effective university teaching - Gain practical ideas and strategies to facilitate student learning - Understand how to present material in a clear, organised and engaging way - Have had opportunities to discuss challenges experienced in a variety of teaching contexts - Make valuable contacts with peers from diverse academic backgrounds - Gain insights into the particular teaching environment of the University of Melbourne.	“A handful of programs discuss using different delivery methods/mediums for instruction (including, at times, video), but I don't believe this is what you are asking. I’ll keep an eye out for anything that fits your description.”

Melbourne Teaching Certificate for Graduate Researchers	2 half-day intensives, 1 optional consultation, 1 half-day final forum delivered in each semester	Graduate researchers of the University with some teaching experience and who have already completed the Foundations of Teaching & Learning seminar series, sessional tutors and demonstrators	Yes	F2F	N/A	Free	Same as Melbourne Teaching Certificate	No FF/TV involved
Graduate Certificate in University Teaching	Part-time, delivered over a one or two-year period	- An undergraduate Bachelor's degree (in any discipline) or equivalent - Current employment at an Australian university or higher education institution with significant curriculum design and/or teaching responsibilities	No	F2F and online	Completion of 4 subjects	$3,348 for each subject or free for some academic staff	Semester 1, 2019 - Effective University Teaching - Designing a Curriculum - Teaching in Practice Semester 2, 2019 - Designing a Curriculum - Project on Teaching and Learning - Facilitating Online Learning	No reply

AUSTRALIAN NATIONAL UNIVERSITY								
Course	**Duration**	**Targeted participants**	**Compulsory?**	**Delivery mode**	**Assessment**	**Fees**	**Content/ Learning outcomes**	**FF/TV related content?**

Teaching and Learning at ANU: Foundations (non-award certificate)	2 hours per module, 20 hours total	- All academics (Levels A to E) new to the ANU and/or new to teaching - Experienced lecturers wanting to reflect on and discuss their teaching - Research-focused academics adding a teaching role to their activities - Professional staff with learner centred support roles	No	F2F, online forum	Must attend and participate in all 10 modules. Write 3 short reflective pieces (each approximately 400 words) on key aspects of university teaching As a capstone activity, contemplate their teaching in a brief teaching philosophy statement (400 words). Join the online course forums which will allow an extension of the class discussions. Write a minimum of 7 posts throughout the duration of the course.	N/A	**Core Modules** Module 1 - What makes a quality educator? Module 2 - Teaching for learning Module 3 - Small group collaborative learning Module 4 - Course design Module 5 -Assessment and feedback Module 6 - Inclusive teaching Module 7 - Technology-Enhanced learning Module 8 - Curriculum design Module 9 - Evaluation of teaching and learning Module 10 - Your teaching philosophy **Optional Modules** ·Module 11 - Postgraduate Supervision ·Module 12 - APD Pathway to the EFS	"Foundations is a course designed to equip ANU staff with strategies, tools and frameworks which assists them to be effective as University educators. There is no media training content, and I'm not aware if this training is available at ANU."

THE UNIVERSITY OF QUEENSLAND								
Course	**Duration**	**Targeted participants**	**Compulsory**	**Delivery mode**	**Assessment**	**Fees**	**Content/ Learning outcomes**	**FF/TV related content?**
Graduate Teaching Associates Program	8 hours	N/A	N/A	N/A	N/A	N/A	• Developing a Teaching Philosophy • Lesson planning • Motivating and engaging with students • Managing group dynamics • Giving and receiving feedback • Assessment, marking and moderation • Face-to-face teaching and active teaching strategies • E-learning and technological aids • Case-based and problem-based learning • UQ policies regarding teaching & learning • Engage in peer review and educational evaluation	"We do provide some media training for lecturers; see: https://staffdevelopment.hr.uq.edu.au/course/ELEVPD (Educational Video Production) https://staffdevelopment.hr.uq.edu.au/course/ELVPSW (Writing and Presenting Educational Video). There are not explicit elements in the programs you have noted."

The Teaching@ UQ Program	4 sessions, 4 hours each, 16 hours total	academic staff new to UQ, with approval from their supervisors	N/A	F2F and online	The program will include some 'homework', which includes: - A plan to undertake a teaching observation, and be observed as you teach over the semester. - A brief writing task (which can be used in an appraisal document). -Some mini online learning tasks before and between sessions. - Opportunity to attend further staff development activities.	N/A	Participants are asked to attend four 4-hour sessions over the course of a semester: - 2 sessions pre-semester that provide an orientation to **teaching practice and UQ systems**. - 1 mid-semester session to explore questions around **assessment and teaching evaluation**. - 1 final session for **consolidation, reflection** and 'where to from here'.	"We don't do a lot in regards the use of films or TV in our professional development activities, none at all in Teaching@UQ. All workshops on video have the main messages: awareness of what is available through the library (e g. https://guides.library.uq.edu.au/how-to-find/video/feature-films), copyright considerations and some considerations about how to use video (generally inclusive of all video) effectively to promote learning. Many academics are developing video to use in their courses, I can provide more information about this or people to talk to. I know of a few academics who have done some research about the use of video –either in class or as student submitted assessment, but not specifically on film/TV series."
Tutors@UQ	Session 1: Two hours prior to start of semester Session 2: Two hours prior to start of semester Session 3: One hour follow-up session during semester	New tutors from any discipline	N/A	F2F	N/A	Free	This course will enable participants to: 1. Explore professional expectations for tutoring at UQ 2. Engage in effective teaching practices to enhance student learning 3. Develop self-efficacy in taking on a new tutoring role 4. Have the opportunity to connect with a network of tutoring colleagues to support ongoing professional practices.	No FF/TV involved

UQ Learning & Teaching Focused Network	2 hours	Primarily teaching focused (TF) staff, but open to all UQ staff interested in scholarly approaches to teaching,	No	F2F	N/A	N/A	-Connects TF academics from across UQ -Promotes sharing of practices, nurtures support for career development, enables consultation on strategic planning -Exchanges information relevant to TF roles	No FF/TV involved
Active Learning in Large Classes (previously Effective Learning)	2 hours	N/A	N/A	F2F	N/A	N/A	This course will enable participants to: -Identify the features of effective and ineffective lectures/ lecturers -Consider the role of the lecture within a whole of course context -Consider strategies for creating imaginative, integrative and engaging lectures -Evaluate the effectiveness of their lectures -Enable students learning	No FF/TV involved
Enhance Your Teaching with Educational Technologies	2 hours	N/A	N/A	F2F	N/A	N/A	-Identify UQ expectations -Explore the pedagogy behind using ed technologies, look at examples of the tools being used and walk you through the experience of setting up and implementing the tools for yourself	No FF/TV involved
Introduction to Curriculum Design	2 hours	Curriculum leaders and course and program coordinators	N/A	F2F	N/A	N/A	This course will enable participants to: -Become familiar with UQ policies and guidelines for effective course and program design -Become familiar with developing learning objectives -Identify effective teaching, learning and assessment activities to achieve intended objectives -Design and map a course to constructively align their course with a graduate profile -Consider ways to manage curriculum integrity and quality.	"I didn't provide any detail to any of my colleagues about content from feature films and TV series. I'm also not aware of anyone who does do that kind of development work. I have always had a sense that the library staff tend to deal with the use of those kinds of resources in teaching but I could be wrong there."

Writing and Presenting Educational Video	2.5 hours	N/A	N/A	F2F	N/A	N/A	This course will enable participants to: -Develop a script using a structure that emphasises increased student engagement -Write a script ready to use in the teleprompter (including mark-ups to identify how this should look) -Draw on skills learnt to deliver the script to the camera -Use feedback to adapt the delivery as required.	No FF/TV involved

UNSW SYDNEY								
Course	**Duration**	**Targeted participants**	**Compulsory**	**Delivery mode**	**Assessment**	**Fees**	**Content/ Learning outcomes**	**FF/TV related content?**
Graduate Certificate in University Learning and Teaching (GCULT)	1.5 years	-New and experienced UNSW teaching and educational development staff -Participants must have completed a three year undergraduate degree at a recognized university -All candidates are required to be actively engaged in teaching in higher education throughout the duration of the program	N/A	F2F	N/A	N/A	Core courses offered within this program are: EDST5121 Introduction to University L&T (6 UOC) EDST5122 Student Learning in HE (6 UOC) EDST5123 Educational Design (6 UOC) EDST5124 Enhancing L&T (6 UOC)	No reply

Foundations of University Learning and Teaching Program (FULT)	4 modules, 10 hours per module, total 40 hours	Must be employed by the University and be teaching, or supporting design and development, within a formal university course and/or workshops and/or seminars for students or staff	Yes for new continuing & fixed term teaching staff	F2F, online	-Learning and teaching philosophy statement (500 words) -Review or critique one course outline (500 words) -Learning & teaching in context 300-500 words -Meta reflection OR Peer Review Reflection (500 words)	N/A	Module 1: Student Learning and Teaching Module 2: Educational Design Module 3: Assessment and Feedback Module 4: Reflection and Evaluation	“In our Foundations in University Learning and Teaching program we do not provide official media training, rather we provide examples of how to create a short welcome video for students in the online environment. Neither do we incorporate TV series or feature films."
Beginning to Teach for ECRs and HDRs	8 weeks with total about 16 hours	UNSW Early Career Researchers (ECRs) and Higher Degree Research candidates (HDRs) with little to no experience of teaching	N/A	F2F, online	N/A	Free upon admission	-Demonstrate understanding of some key elements of learning and how they relate to teaching and to their disciplinary context. -Plan, facilitate and evaluate a short teaching session that aligns aims and approach with outcomes. -Give and receive feedback to colleagues regarding teaching and to students regarding assessment of learning.	No reply

APPENDIX 2 – APPROVED EMAIL FORMAT FOR REQUESTING INFORMATION/DOCUMENTS

Form 1: General request addressed to university staff in Learning and Teaching units at Go8 universities for information and documents about academic development

Dear Ms/Mr.,
My name is Ngoc Nguyen. I'm currently a PhD candidate in Education at the University of Adelaide under the supervision of Dr. Cally Guerin and Professor Peter Pugsley. My research is about the use of feature films and TV series by lecturers in teaching undergraduate courses across all disciplines in Australian universities. The practice has been around for decades but upon reviewing the literature and having first-hand experience, I believe there might be a meaningful gap in how lecturers can effectively and optimally use these entertainment-oriented media to enhand teaching and learning. My research therefore aims to accommodate the need for a more comprehensive and systematic approach that can benefit lecturers, and in effect student learning.

I am using a variety of research methods to examine different aspects of the topic, among which document analysis accounts for the part about relevant formal training provided by institutions to their lecturers. Such training can be in the form of workshops, short courses, seminars or online resources made available to lecturers of different employment statuses.

I am therefore writing to ask for some information regarding academic development at your institution, [insert name of university]. I am hoping that you could provide me with some information pertaining to whether or not [insert name of university] is currently offering opportunities in academic development for lecturers to gain some training in how to properly use feature films and/or TV series in teaching. If yes, would it be possible for me to obtain the information about those opportunities, especially if they include the use of feature films and TV series in teaching?

Looking forward to your reply. Thank you for your time.
Regards,
Ngoc N. Nguyen (Ruby)
PhD Candidate | Postgraduate Representative
Faculty of Arts | School of Education
University of Adelaide
Level 8, Nexus 10 Building, 10 Pulteney St, Adelaide SA 5000
Email: ngoc.nguyen@adelaide.edu.au

Form 2: Specific request addressed to the staff in charge of specific training courses/workshops/seminars whose contents potentially cover the use of feature films and TV series in teaching

Dear Ms/Mr.,
My name is Ngoc Nguyen. I'm currently a PhD candidate in Education at the University of Adelaide under the supervision of Dr. Cally Guerin and Professor Peter Pugsley. My research is about the use of feature films and TV series by lecturers in teaching undergraduate courses across all disciplines in Australian universities. The practice has been around for decades but upon reviewing the literature and having first-hand experience, I believe there might be a meaningful gap in how lecturers can effectively and optimally use these entertainment-oriented media to enhand teaching and learning. My research therefore aims to accommodate the need for a more comprehensive and systematic approach that can benefit lecturers, and in effect student learning.

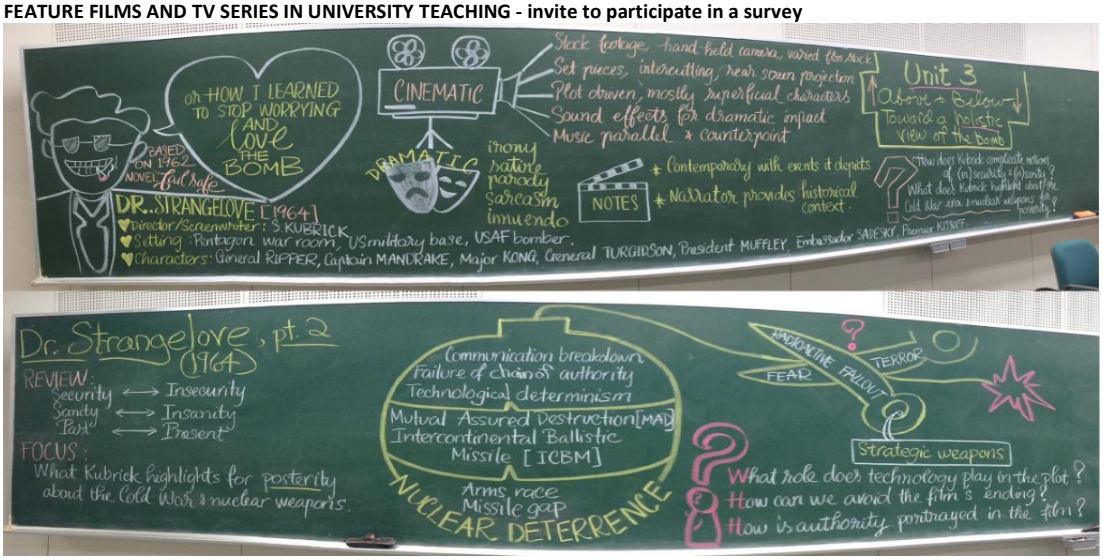
I am using a variety of research methods to examine different aspects of the topic, among which document analysis accounts for the part about relevant formal training provided by institutions to their lecturers. Such training can be in the form of workshops, short courses, seminars or online resources made available to lecturers of different employment statuses.

Upon studying the official university websites, I have notice the following list of programs that might be relevant to my research topic. Would you be able to inform me if any contents they cover relate to the use of feature films and TV series in teaching? If yes, what specific aspects do they cover?
Looking forward to your reply. Thank you for your time.
Regards,
Ngoc N. Nguyen (Ruby)
PhD Candidate | Postgraduate Representative
Faculty of Arts | School of Education
University of Adelaide
Level 8, Nexus 10 Building, 10 Pulteney St, Adelaide SA 5000
Email: ngoc.nguyen@adelaide.edu.au

APPENDIX 3 – HIGHER EDUCATION NETWORK NEWSLETTERS RECRUITMENT

(AARE)

FEATURE FILMS AND TV SERIES IN UNIVERSITY TEACHING - invite to participate in a survey



We would like to invite you to participate in an anonymous online survey that investigates how university lecturers in Australia are currently using feature films and TV series (FF/TV) in teaching. This survey is a part of an ongoing PhD research project that works towards improving the efficacy of FF/TV in higher education pedagogies. Your experience in teaching with FF/TV, however much or little, will be valuable to this research.
To know more and complete the survey, please go to https://www.surveymonkey.com/r/FFTVEDUFINAL
The survey is open until January 31, 2020.
This research project is approved by the Human Research Ethics Committee on August 6, 2019; approval number H-2019-139.
Thank you for your time, and please forward to other lecturers.
Further information: ngoc.nguyen@adelaide.edu.au or cally.guerin@adelaide edu.au

(HERDSA)

FEATURE FILMS AND TV SERIES IN UNIVERSITY TEACHING - invite to participate in a survey

The survey is open until January 31, 2020
We would like to invite you to participate in an anonymous online survey that investigates how university lecturers in Australia are currently using feature films and TV series (FF/TV) in teaching. This survey is a part of an ongoing PhD research study that works towards improving the efficacy of FF/TV in higher education pedagogies.
Your experience in teaching with FF/TV, however much or little, will be valuable to this research.
Survey and details URL: https://www.surveymonkey.com/r/FFTVEDUFINAL
Thank you for your time. Please feel free to forward to other lecturers.
This research is approved by the Human Research Ethics Committee on August 6, 2019; approval number H-2019-139.
Further information: ngoc.nguyen@adelaide.edu.au or cally.guerin@adelaide edu.au

APPENDIX 4 – ONLINE SURVEY

PART 1
BACKGROUND INFORMATION

1. Which of the following categories best describes your employment status as a university lecturer?

Full time equivalent, FTE; permanent

Full time equivalent, FTE; fixed-term contract for over 3 years

Full time equivalent, FTE; fixed-term contract for 1-3 years

Full time equivalent, FTE; fixed-term contract for less than 1 year

Full time equivalent, FTE; casual/sessional contract

Other (please specify)

2. Which of the following disciplines best describe the courses where you use FF/TV in teaching? Please select all that apply.

Education and Pedagogy

Cultural studies; Asian studies

Business and Economics

Law and Justice

Medicine, Nursing and Health Sciences

Linguistics

Language teaching

Sociology

Anthropology

History

Literature

Psychology

Political sciences

Classics

Geography

Arts, Design and Architecture

Engineering and Information Technologies

Science

Mathematics

Other (please specify)

3. How many times have you taught the courses where you use FF/TV?

- ○ First time
- ○ 2-5 times
- ○ More than 5 times

4. How long have you been active in teaching duties?

- ○ Less than 3 years
- ○ 3 - 5 years
- ○ 5 - 10 years
- ○ More than 10 years

PART 2
ACADEMIC DEVELOPMENT/ TRAINING

5. Have you received any kind of training (formal or informal) on how to effectively use FF/TV in teaching?

- ○ Yes
- ○ No

6. What aspects of using FF/TV in teaching has your training provided you? Please select all that apply.

- ☐ Basic concepts about film literacy *(e.g. auteur, diegesis, editing, flashback/ flashforward, focus, genres, story/plot, scene sequence, editing, sound, 3-act format)*
- ☐ Skills and competencies to work with FF/TV *(e.g. perceptive/aesthetic or critical/intercultural/communicative competencies of film literacy; narrative/dramatic/aesthetic or cinematographic dimensions of film)*
- ☐ Specific methods of showing FF/TV *(e.g. length, flow, classroom setting, frequency, verbal parallels)* Additional
- ☐ materials to accompany FF/TV *(e.g. books, PPTs, handouts, articles, documentaries)* Additional tools to assist the
- ☐ film showing *(e.g. computer software, learning models)*
- ☐ Classroom activities or tasks to accompany film viewing *(e.g. group projects, guiding questions, group discussion, note taking)*
- ☐ Communication with students *(i.e. how to handle different reactions to FF/TV from students)*
- ☐ Assessment *(i.e. assess how effective your use of FF/TV in class is)*
- ☐ Student feedback *(i.e. how to collect feedback from students about the use of FF/TV)*
- ☐ Other (please specify)

7. How do you get access to such training? Please select all that apply.

- ☐ Through academic development courses/workshops/seminars provided by my university
- ☐ Through taking formal professional development on my own initiative
- ☐ Informal self-training (e.g. tutorial videos on YouTube, research articles on pedagogy, etc.)
- ☐ By chance (outside my university)
- ☐ Other (please specify)

8. How familiar are you with each of the following elements of film literacy?

	Not aware	A little familiar	Quite familiar	Very well familiar
Basic concepts (e.g. auteur, diegesis, editing, flashback/ flashforward, focus, genres, story/plot, scene sequence, shot)	○	○	○	○
Mise-en-scene (e.g. decor, lighting, space, costume, acting)	○	○	○	○
Editing (e.g. devices in transition, matches and duration; styles in continuity and montage)	○	○	○	○
Sound (e.g. sound editing, sources of sound, quality)	○	○	○	○
Narrative structure (i.e. introduction, conflict, resolution)	○	○	○	○

9. Do you know if your University has offered any form of training on the use of FF/TV in teaching for lecturers?

- ○ Yes, they do.
- ○ Yes, they did in the past but not anymore.
- ○ No, but they will soon offer some.
- ○ No, there is none.
- ○ I'm not sure.

10. If possible, can you provide more details about the training offered by your University? (e.g. organizers, admission criteria, costs, recurring or not, etc.)

PART 3
UNIVERSITY TEACHING WITH FEATURE FILMS & TELEVISION SERIES (FF/TV)

11. How often do you use FF/TV in teaching your courses?

- ○ Occasionally
- ○ Frequently
- ○ Extensively

12. How many times do you usually watch a piece of FF/TV yourself before deciding to use in a course?

- ○ Once

- 2-3 times
- 3-5 times
- More than 5 times

13. Which of the following activities do you usually do while watching the FF/TV yourself to help you prepare them for teaching? Please select all that apply.

- [ ] Saving the URL to my slides/notes.
- [ ] Taking note of important things to talk about.
- [ ] Taking note of important time stamps to pause.
- [ ] Transcribing.
- [ ] Taking screenshots of important scenes.
- [ ] Looking up more information about the FF/TV.
- [ ] Other (please specify)

14. Why do you use FF/TV in teaching your courses? Please select all that apply.

Because...

- [ ] they are low cost and easily accessible.
- [ ] they motivate students to come to class or prepare for class.
- [ ] students are highly exposed to the media.
- [ ] they promote class discussion and student participation.
- [ ] they contain humor, which relaxes and engages students better.
- [ ] they help accommodate different learning styles (audio, visual, narrative, verbal, etc.)
- [ ] they engage students through emotions, senses and relevance.
- [ ] they offer a broader context.
- [ ] they create a safe communal zone.
- [ ] they help reduce stress and participation anxiety.
- [ ] they enable multimodal learning.
- [ ] they enable the development of multiliteracies.
- [ ] they help promote interdisciplinary learning.
- [ ] they enable active learning of various cognitive skills.
- [ ] they help students remember information better.
- [ ] they enable deeper/more nuanced understanding.
- [ ] they help train students in morality.
- [ ] they help students transfer the knowledge and skills they learn into practice.
- [ ] they can influence or change students' perception on certain issues.
- [ ] they provide a visual representation of abstract concepts.
- [ ] they provide a visual representation of real-life problems.
- [ ] they can show a variety of perspectives or complexities.
- [ ] they guide students in determining what case study they want to pursue.
- [ ] they help introduce unfamiliar subjects or changes.
- [ ] they are good fillers.
- [ ] they are a reward to encourage good behaviors from students.
- [ ] Other (please specify)

15. How do you use FF/TV in teaching your courses?

- [ ] I show full film(s) in class.
- [ ] I show full TV episode(s) in class. I
- [ ] show short TV clip(s) in class.
- [ ] I show short film clip(s) in class. I
- [ ] assign viewing as homework.

16. How long are the films/clips/episodes you show in class? And how often do you show each length type?

	Always	Often	Sometimes	Rarely	Never
Less than 1 minute	○	○	○	○	○

1 - 5 minutes	○	○	○	○	○
5 - 15 minutes	○	○	○	○	○
15 - 30 minutes	○	○	○	○	○
More than 30 minutes	○	○	○	○	○

17. Do you pause while showing FF/TV in class?

- ○ No.
- ○ Yes, frequently.
- ○ Yes, sometimes.

18. Why do you pause while showing FF/TV in class? Please select all that apply.

- ☐ For students to take notes.
- ☐ For students to ask questions.
- ☐ For me to ask students questions.
- ☐ For me to point out something important.
- ☐ To facilitate discussion among students.
- ☐ For bathroom breaks.
- ☐ Other (please specify)

19. How do you usually set up the classroom/lecture hall during showing FF/TV?

- ○ Usual setting (students sit freely).
- ○ As a movie theater.
- ○ Group sitting (students are assigned to sit in the same groups every time).
- ○ Group sitting (students are assigned to sit in the different groups every time).
- ○ Group sitting (students self-group)
- ○ Other (please specify)

20. Are feature films/TV series the only materials you use in class?

- ○ Yes
- ○ No

21. What kind of materials do you use in addition to FF/TV? Please select all that apply.

- [ ] Non-film videos
- [ ] PowerPoint slides
- [ ] Textbooks
- [ ] Handouts
- [ ] Books/ Book chapters
- [ ] Academic papers
- [ ] Images
- [ ] Documentaries
- [ ] Other (please specify)

22. Do you provide students with any guidance or instructions on how to work with the FF/TV in your courses?

- ◯ Yes
- ◯ No

23. When do you usually provide students with guidance or instructions on how to work with the FF/TV? If you do multiple times, please select all that apply.

- ☐ Before showing.
- ☐ After showing.
- ☐ While showing, without pausing.
- ☐ While showing, during pausing.
- ☐ Anytime when students request it in class.
- ☐ Other (please specify)

24. What kind of guidance about working with the FF/TV do you provide for students? Please select all that apply.

- ☐ A basic introduction to the films being shown (title, director, characters, length, setting, etc.)
- ☐ Technical concepts about film studies (e.g. auteur, diegesis, editing, flashback/ flashforward, focus, genres, mise en scene, story/plot, scene sequence, shot, etc.)
- ☐ Basic skills to work with film (e.g. perceptive/aesthetic or critical/intercultural/communicative competencies of film literacy; narrative/dramatic/aesthetic or cinematographic dimensions of film, etc.)
- ☐ Guiding questions
- ☐ Worksheets
- ☐ Other (please specify)

25. Have you ever used any additional tools to assist you with the use of FF/TV in your courses? (e.g. computer software, learning models or self-created materials)

- ◯ No
- ◯ Yes, I use

26. Do you assign any tasks or activities for students alongside FF/TV viewing?

- ◯ Yes
- ◯ No

27. What kind of tasks or activities do you assign? Please select all that apply.

- [ ] Group work/ Group project
- [ ] Guiding questions
- [ ] Class discussion
- [ ] Note taking that follows specific guidelines
- [ ] Reading/ listening comprehension tasks
- [ ] Writing assignments
- [ ] Other (please specify)

28. Do you use any evaluation methods to specifically assess the efficacy of the use of FF/TV in your courses?

- ○ No
- ○ Yes, I use

29. Do you allow any forms of student feedback to help assess the efficacy of FF/TV in your courses?

- ○ No
- ○ Yes, I use

30. Have you encountered any problems with using FF/TV in teaching?

- ○ Yes
- ○ No

31. What kind of problems have you encountered? Please select all that apply.

- [ ] Unpredictable reactions/ interpretations caused by emotional distress triggered as an effect of FFs (expectations fulfilled or subverted)
- [ ] Fiction-reality tension leading to controversial representations/ distorted portrayals that confuse students
- [ ] FF/TV's high persuasiveness and harming students' thinking abilities
- [ ] FF/TV's entertaining qualities distract students' from taking issues seriously or in the same scale as in reality
- [ ] FF's tendency to oversimplify complex/ nuanced subjects to resolve within screen time
- [ ] FF's sensitive/ inappropriate contents for mass audience
- [ ] Students' passive consumption of FF/TV's subjectivity
- [ ] Students' low ability to discern bias, weak arguments and/or inaccurate information
- [ ] Students' low ability to transfer learned knowledge into real-life situations
- [ ] Students' lack of knowledge about concepts shown in films, resulting in them drawing invalid conclusions/generalisations
- [ ] Students' lack of background knowledge in audiovisual and film studies concepts

- [ ] Assessment issues (lack of objective methods, difficult to measure)
- [ ] Copyright issues
- [ ] Time consuming to prepare/plan lectures
- [ ] FF/TV taking up class time out of curriculum
- [ ] Lack of provided guidance, recommendation and evidence of film use for lecturer
- [ ] Other (please specify)

32. What would you recommend for lecturers who might face similar problems you have encountered? Please select all that apply.

- [ ] Provide more detailed instructions or tools for students to critique films
- [ ] Provide different materials other than FF/TV for comparison
- [ ] Use a variety of activities (e.g. discussion, note-taking)
- [ ] Teach students how to interpret POVs and contents of the medium
- [ ] Enable assignments of film production
- [ ] Enable individualized viewing/ remove communal experience
- [ ] Pause film for discussion
- [ ] Use error detecting tasks and post-viewing feedback session
- [ ] Show only the first 1/3 of the films for setting background
- [ ] Assign full films as homework, show only parts in class
- [ ] Make more use of class discussion to optimize the benefit of showing full films
- [ ] Get more targeted training agendas on integrating films into disciplinary teaching
- [ ] Build better tools, investigate more about actual learning outcomes compared to perceived ones
- [ ] Conduct more research on different aspects of the method, share results more systematically
- [ ] Other (please specify)

33. Have you ever used or thought of using FF/TV in languages other than English?

- ○ Yes
- ○ No

34. What is the reason why you consider(ed) using FF/TV in languages other than English? Please select all that apply.

Because...

- [ ] the film seems to be the optimal choice at the moment.
- [ ] I want to promote cultural diversity.
- [ ] I teach that language.
- [ ] I have the available resources to access and use the film.
- [ ] someone recommended the film to me and I see fit.

- [ ] I want to engage international students.
- [ ] Other (please specify)

35. When you plan to use FF/TV in a language other than English, have you ever had difficulty with any of the following issues?

	Yes	No
Availability in classroom usable format(s)	○	○
Copyrights	○	○
Finding subtitles	○	○
Nonequivalent translations/ untranslatable words or phrases	○	○
Pronunciation/ spelling of foreign names	○	○
Student reception	○	○

36. Are there any other relevant issues that you would like to address? If yes, please specify.

- ○ No
- ○ Yes:

As mentioned in the Survey Preamble, you are also invited to participate in the Interview stage of this research project.

Purpose: Share more about your teaching practice/philosophy involving the use of FF/TV or discuss about how we can help the media reach the optical efficacy in higher education pedagogies.
Method: one on one semi-structured; in person or online.

If you are interested, please provide your email address here: https://bit.ly/2MOLICt. The research team will contact you for further information. This will ensure the anonymity of your survey responses. Thank you very much for your time!

APPENDIX 5 - SURVEY PREAMBLE

PROJECT TITLE: Towards the optimal efficacy of feature films and TV series (FF/TV) in higher education pedagogies
HUMAN RESEARCH ETHICS COMMITTEE APPROVAL NUMBER: H-2019-139 PRINCIPAL INVESTIGATOR: Cally Guerin
STUDENT RESEARCHER: Ngoc N. Nguyen STUDENT'S DEGREE: Doctoral
Dear Participant, you are invited to participate in the research project described below.

What is the project about?
This research project is about the use of feature films and TV series (FF/TV) in higher education teaching. As part of the ongoing conversation about the use of media technologies in teaching and learning, this project enquires into the best ways to use FF/TV in higher education and develop related recommendations for academic development courses for university teaching staff.
Who is undertaking the project?

This project is being conducted by Ngoc N. Nguyen. This research will form the basis for the degree of Doctor of Philosophy in Education at the University of Adelaide under the supervision of Dr. Cally Guerin and Associate Professor Peter Pugsley.
Why am I being invited to participate?

You are being invited because you lecture at the undergraduate level/ Master's coursework and have experience in *voluntarily* (not a teaching requirement) using feature films and/or TV series (FF/TV) in university teaching.
What am I being invited to do?

You are being invited to take the following survey questionnaire regarding your own personal interest and/or experience in using FF/TV in teaching your courses. The submission of completed responses will be taken as an indication of your consent to participate in the survey.
How much time will my involvement in the project take? The survey will take 10-15 minutes to complete.
Are there any risks associated with participating in this project?

There is no foreseeable risk associated with participating in this interview.

What are the potential benefits of the research project?
You may become more informed of the potential benefits as well as detrimental effects of FF/TV as a teaching material. The research project may hopefully become a channel through which individual lecturers such as yourself can mutually learn and inform each other towards best practice in using FF/TV for teaching. In effect, the research project may help improve the quality of teaching and learning in university through bettering the transition of FF/TV from entertainment to education.
Can I withdraw from the project?

Participation in this project is voluntary. You can withdraw anytime. Your submission completed responses will be taken as an indication of consent to participate in this project.

What will happen to my information?
Confidentiality and privacy: Participation is anonymous. Pseudonyms in form of letter and number combination code will be used during data analysis but only the metadata will be available in any resulting presentations or publications. The utmost care will be taken to ensure that no personally identifying details are revealed.
Storage: Responses will be securely stored in the researcher's account of University of Adelaide Box, whose access is only available to the researcher and her supervisors.
Publishing: Only the metadata will appear in the outcomes of this research project, including journal articles, conference presentations and conference papers.
Sharing: Since this research aims to gather information about individual teaching practices using FF/TV so that lecturers can learn from each other, the collected data will be shared and likely used in future research and/or teaching practices by other researchers.
Your information will only be used as described in this participant information sheet and it will only be disclosed according to the consent provided, except as required by law.
Who do I contact if I have questions about the project?

Dr. Cally Guerin

Email address: cally.guerin@adelaide.edu.au Telephone number: +61 8 8313 3043
Dr. Peter Pugsley

Email address: peter.pugsley@adelaide edu.au Telephone number: +61 8 8313 5620
Dr. Ben McCann

Postgraduate Coordinator

Email address: benjamin.mccann@adelaide.edu.au Telephone number: +61 8 8313 5149
What if I have a complaint or any concerns?

The study has been approved by the Human Research Ethics Committee at the University of Adelaide (approval number H-2019-139). This research project will be conducted according to the NHMRC National Statement on Ethical Conduct in Human Research 2007 (Updated 2018). If you have questions or problems associated with the practical aspects of your participation in the project, or wish to raise a concern or complaint about the project, then you should consult the Principal Investigator. If you wish to speak with an independent person regarding concerns or a complaint, the University's policy on research involving human participants, or your rights as a participant, please contact the Human Research Ethics Committee's Secretariat on:
Phone: +61 8 8313 6028

Email: hrec@adelaide.edu au

Post: Level 4, Rundle Mall Plaza, 50 Rundle Mall, ADELAIDE SA 5000

Any complaint or concern will be treated in confidence and fully investigated. You will be informed of the outcome.
If I want to participate, what do I do?

If you want to participate, please complete the following survey.

Your submission completed responses will be taken as an indication of consent to participate in this project.

APPENDIX 6 – ETHICS CLEARANCE

Our reference 33819

THE UNIVERSITY of ADELAIDE

RESEARCH SERVICES
OFFICE OF RESEARCH ETHICS, COMPLIANCE AND INTEGRITY
THE UNIVERSITY OF ADELAIDE

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EMAIL hrec@adelaide.edu.au

CRICOS Provider Number 00123M

06 August 2019

Dr Cally Guerin
School of Education

Dear Dr Guerin

ETHICS APPROVAL No: H-2019-139
PROJECT TITLE: Towards the optimal efficacy of feature films/TV series in higher education pedagogies

The ethics application for the above project has been reviewed by the Low Risk Human Research Ethics Review Group (Faculty of Arts and Faculty of the Professions) and is deemed to meet the requirements of the *National Statement on Ethical Conduct in Human Research 2007 (Updated 2018)* involving no more than low risk for research participants.

You are authorised to commence your research on: 06/08/2019
The ethics expiry date for this project is: 31/08/2022

NAMED INVESTIGATORS:

Chief Investigator:	Dr Cally Guerin
Student - Postgraduate Doctorate by Research (PhD):	Ms Ngoc Nhu Nguyen
Associate Investigator:	Associate Professor Peter Charles Pugsley

CONDITIONS OF APPROVAL: Thank you for your considered responses to the matters raised. The revised application provided on 06/08/19 has been approved.

Ethics approval is granted for three years and is subject to satisfactory annual reporting. The form titled Annual Report on Project Status is to be used when reporting annual progress and project completion and can be downloaded at http://www.adelaide.edu.au/research-services/oreci/human/reporting/. Prior to expiry, ethics approval may be extended for a further period.

Participants in the study are to be given a copy of the information sheet and the signed consent form to retain. It is also a condition of approval that you immediately report anything which might warrant review of ethical approval including:

- serious or unexpected adverse effects on participants,
- previously unforeseen events which might affect continued ethical acceptability of the project,
- proposed changes to the protocol or project investigators; and
- the project is discontinued before the expected date of completion.

Yours sincerely,

Dr Anna Olijnyk Convenor
Dr Douglas Bardsley Convenor

The University of Adelaide

APPENDIX 7 – CONSENT FORM FOR INTERVIEWEES

Human Research Ethics Committee (HREC)

CONSENT FORM

1. I have read the attached Information Sheet and agree to take part in the following research project:

Title:	Towards the optimal efficacy of feature films and TV series in higher education pedagogies
Ethics Approval Number:	**HREC-2019-139**

2. I have had the project, so far as it affects me, and the potential risks and burdens fully explained to my satisfaction by the research worker. I have had the opportunity to ask any questions I may have about the project and my participation. My consent is given freely.

3. Although I understand the purpose of the research project, it has also been explained that my involvement may not be of any benefit to me.

4. I agree to participate in the activities outlined in the participant information sheet.

5. I agree to be: Audio recorded ☐ Yes ☐ No

6. I understand that my participation is not anonymous, I can withdraw anytime within a period of one month following the completion of the interview.

7. I have been informed that the information gained in the project may be published in a journal article/thesis/conference presentations.

8. I have been informed that in the published materials I will not be identified and my personal results will not be divulged.

9. I agree to my information being used for future research purposes as follows:
   Any researcher undertaken by any researcher(s) ☐ Yes ☐ No

10. I understand my information will only be disclosed according to the consent provided, except where disclosure is required by law.

11. I am aware that I should keep a copy of this Consent Form, when completed, and the attached Information Sheet.

Participant to complete:

Name: Signature: Date:

Researcher/Witness to complete:

I have described the nature of the research to

(print name of participant)

and in my opinion she/he understood the explanation.

Signature: Position: Date:

APPENDIX 8 – PARTICIPANT INFORMATION FORM FOR INTERVIEWEES

HUMAN RESEARCH ETHICS COMMITTEE APPROVAL NUMBER: H-2019-139
PRINCIPAL INVESTIGATOR: Cally Guerin
STUDENT RESEARCHER: Ngoc N. Nguyen
STUDENT'S DEGREE: Doctoral
Dear Participant, you are invited to participate in the research project described below.

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Who is undertaking the project?

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Why am I being invited to participate?

You are being invited because you lecture at the undergraduate level/ Master's coursework and have experience in *voluntarily* (not a teaching requirement) using feature films and/or TV series (FF/TV) in university teaching.

What am I being invited to do?

You are being invited to take the following survey questionnaire regarding your own personal interest and/or experience in using FF/TV in teaching your courses. The submission of completed responses will be taken as an indication of your consent to participate in the survey.

How much time will my involvement in the project take? The survey will take 10-15 minutes to complete.

Are there any risks associated with participating in this project?

There is no foreseeable risk associated with participating in this interview.

What are the potential benefits of the research project?
You may become more informed of the potential benefits as well as detrimental effects of FF/TV as a teaching material. The research project may hopefully become a channel through which individual lecturers such as yourself can mutually learn and inform each other towards best practice in using FF/TV for teaching. In effect, the research project may help improve the quality of teaching and learning in university through bettering the transition of FF/TV from entertainment to education.

Can I withdraw from the project?

Participation in this project is voluntary. You can withdraw anytime. Your submission completed responses will be taken as an indication of consent to participate in this project.

What will happen to my information?
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Storage: Responses will be securely stored in the researcher's account of University of Adelaide Box, whose access is only available to the researcher and her supervisors.
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Sharing: Since this research aims to gather information about individual teaching practices using FF/TV so that lecturers can learn from each other, the collected data will be shared and likely used in future research and/or teaching practices by other researchers.
Your information will only be used as described in this participant information sheet and it will only be disclosed according to the consent provided, except as required by law.

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Email address: cally.guerin@adelaide.edu.au Telephone number: +61 8 8313 3043

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Email address: peter.pugsley@adelaide.edu.au Telephone number: +61 8 8313 5620

Dr. Ben McCann

Postgraduate Coordinator

Email address: benjamin.mccann@adelaide.edu.au Telephone number: +61 8 8313 5149

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Phone: +61 8 8313 6028

Email: hrec@adelaide.edu.au

Post: Level 4, Rundle Mall Plaza, 50 Rundle Mall, ADELAIDE SA 5000

Any complaint or concern will be treated in confidence and fully investigated. You will be informed of the outcome.

If I want to participate, what do I do?

If you want to participate, please complete the following survey.

Your submission completed responses will be taken as an indication of consent to participate in this project.

APPENDIX 9 – INTERVIEW CHECKLIST

Participant Code: _ _ _ _ Date: _____/____/_____ Time: ____:____

INTERVIEW THEMES & TOPICS (LECTURER)

1. Self-introduction
2. Participant Information Sheet
3. Consent Form (2 copies)
4. Participant Code
5. Recorder
6. Follow-up emails

BACKGROUND

(1) FF/TV as a teaching requirement?☐ Yes ☐No

(2) Institution

(3) Employment status

(4) Discipline

(5) Length of teaching

(6) Length of using ☐ FF ☐ TV in teaching

(7) Genre

(8) Source (DVDs, streaming sites, downloaded files)

(9) Language: ☐ English ☐ Other languages

(10) Form: ☐ full films ☐ full TV episodes ☐ film clips ☐ TV clips

INITIAL

(1) Motivation/ Reason

(2) Method

(3) How and why has it changed?

CURRENT

(1) Are you currently teaching any course that uses FF/TV?

(2) Any other active courses?
(3) FF and/or TV?

(4) Different pedagogies for each course?

(5) How do you think FF/TV differ from other media used in education?

(6) Why?

(7) How? – Length of clips/episodes/films
- Preparation
- How do you make the choice/decision to use a certain piece? (relevant content, form, popularity, availability)
- Classroom setting
- Pause

- Additional materials
- Assessment

(8) Student focus: - Guidance for students? When?
- Training for students on how to work with FF/TV?
- Tasks? Activities?
- Student feedback?

(9) Efficacy?

(10) Challenges? Difficulties?

(11) Solutions?

ACADEMIC DEVELOPMENT/ TRAINING

(1) Have you ever attended any training related to the use of FF/TV in teaching at your current of previous institutions?
(2) Have you ever sought information or guidance by yourself about how to use FF/TV in teaching?
(3) How necessary do you think having knowledge and skills to work with FF/TV for lecturers?
(4) How necessary do you think having knowledge and skills to work with FF/TV for students?
(5) Why?
(6) This research plans to develop guidelines and recommendations for optimal teaching practice with FF/TV & then introduce them into existing contents in AD at universities, probably in sections about media technologies in education. How do you think that would work out?
(7) Are there any other possible channels through which we can provide access for lecturers interested in using FF/TV in teaching to this useful guidance?
(8) Voice? Rationale?
(9) Is student voice necessary in informing your pedagogy?
(10) If there is a possibility or opportunity to survey student opinion in a course where you use FF/TV to match with your perception, would you enable it to happen?

FILM / VISUAL LITERACY – MULTIMEDIA LEARNING

- Visual literacy theory (Visual language – thinking – learning – perception –communication)
- Film literacy
    - Competencies
        - Perspective (disciplinary knowledge – film/media knowledge)
        - Aesthetic & critical
        - Intercultural
        - Communicative
    - Dimensions of film
        - Narrative (plot & characters)
        - Dramatic – fictional (performance)
        - Filmic/technical
            - Basic terms
            - Mise-en-scene
            - Cinematography
            - Editing
            - Sound
            - Analysis

Multimedia learning effects