'Going live': establishing the creative attributes of the live multi-camera television professional

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Abstract

In my capacity as a television professional and teacher specialising in multi-camera live television production for over 40 years, I was drawn to the conclusion that opaque or inadequately formed understandings of how creativity applies to the field of live television, have impeded the development of pedagogies suitable to the teaching of live television in universities. In the pursuit of this hypothesis, the thesis shows that television degrees were born out of film studies degrees, where intellectual creativity was aligned to single camera production, and the 'creative roles' of producers, directors and scriptwriters. At the same time, multi-camera live television production was subsumed under the 'mass communication' banner, leading to an understanding that roles other than producer and director are simply technical, and bereft of creative intent or acumen. The thesis goes on to show that this attitude to other television production personnel, for example, the vision mixer, videotape operator and camera operator, relegates their roles to that of 'button pusher'. This has resulted in university teaching models with inappropriate resources and unsuitable teaching practices. As a result, the industry is struggling to find people with the skills to fill the demands of the multi-camera live television sector.

In specific terms the central hypothesis is pursued through the following sequenced approach. Firstly, the thesis sets out to outline the problems, and traces the origins of the misconceptions that hold with the notion that intellectual creativity does not exist in live multi-camera television. Secondly, this more adequately conceptualised rendition, of the origins particular to the misconceptions of live television and creativity, is then anchored to the field of examination by presentation of the foundations of the roles involved in making live television programs, using multi-camera production techniques. Thirdly, this more nuanced rendition of the field sets

the stage for a thorough analysis of education and training in the industry, and teaching models at Australian universities. The findings clearly establish that the pedagogical models are aimed at single camera production, a position that de-emphasises the creative aspects of multi-camera live television production.

Informed by an examination of theories of learning, qualitative interviews, professional reflective practice and observations, the roles of four multi-camera live production crewmembers (camera operator, vision mixer, EVS/videotape operator and director's assistant), demonstrate the existence of intellectual creativity during live production. Finally, supported by the theories of learning, and the development and explication of a successful teaching model, a new approach to teaching students how to work in live television is proposed and substantiated.

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Statement of Original Authorship

The work contained in this thesis has not been previously submitted to meet requirements for an award at this or any other education institution. To the best of my knowledge and belief, the thesis contains no material previously published or written by another person except where due reference is made.

Signature

10th October 2012

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This work is dedicated to my mother Eva, who gave me my love of books.

Chapter 1

Introduction

Introduction

Film and Television degrees at Australian universities have fallen short of producing graduates with skills, best suited, to the live television industry. A premise, which aligns creativity to roles such as producers, directors and scriptwriters in a single camera production environment, has neglected to recognise the intellectual creativity of all the roles found in television. This thesis supports and demonstrates the existence of the intellectual creativity of people who work inside live television. It illustrates the existence of reasoned strategizing by all crewmembers that recall memories to action, 'in the moment' during 'real time' production. It demonstrates that it is at this point during a live production, defined as 'time-future', that the fundamental difference between television and film production becomes apparent. Furthermore, such an understanding highlights the fact that there is a need to develop well-resourced teaching models, to alleviate the shortage of suitable personnel, in the field of multi-camera live television production.

This thesis supports and validates the creative orientations of individuals who work in live television. It presents evidence to show that television professionals who perform roles including camera operation, vision mixing, director's assistant and EVS operation are creative in their roles. These professionals draw on a set of skills and attributes specifically attuned to the real time environment, in which they operate. After establishing the nature and process of intellectual creativity, the thesis applies these new understandings to the ways in which such understandings might inform future pedagogies, and deliver graduates better suited to fill the needs of the television industry.

In summary, the key contribution from this research lies in extracting the intellectually creative elements of live television crewmembers, previously classified as technicians or 'button pushers'. In addition, it seeks to outline an effective

teaching model that builds on the dispositions of people drawn to work successfully in live television.

As described in the abstract, the research was undertaken in order to address the problems faced by the television industry, and as established through professional reflective practice. Prior to degrees and courses the large networks provided their own training. However, with the Governments directive toward practical degrees, universities took over a large portion of the training, and at the same time, further in-house television training was removed to make way for greater profitability. According to Tim McDonald, General Manager Seven Sydney, the networks had to: "…find something to throw out and what we've thrown out is our cost base and 77% of our cost base is people" (Personal interview, Aug 26, 2008). This factor has contributed to the problems now faced by the industry. As the older generation of professionals retire there is a lack of new people with the skills and attributes to undertake roles in the television sector. Furthermore, in spite of the solid evidence (Attached as Figure 8 Appendix 1) that television production contributes more to the economy than film production, and the television industry has established their own courses to alleviate their problems, universities have maintained graduate outcomes more applicable to film production.

The second factor that has contributed to the shortfall in trained television professionals is the misconception of what constitutes creativity within the field of television. A lack of understanding has fed the 'prevailing orthodoxy' and led to teaching models aligned more toward creativity attributed to such roles as producers, directors and writers. These roles, based more significantly in the area of single camera production, have become the default form of teaching practice. In this way, the creativity of other roles is overlooked by the academy and industry alike, due in part to the contributions of crewmembers based on their 'creative output'. In this sense creative output is judged as a tangible product rather than the intellectually creative processes employed during the production process. As the creative output of the television professional happens in real time, and of the moment, it may not be observed and therefore, not seen to exist.

Presented with the problems faced by industry, and in my position as a professional reflective practitioner, the research sought to establish the type of person who works as a consummate professional in live television. It also sought to establish how professionals gain the intellectual, creative and craft skills to work in live television, and to explicate and expose these skills. My experience as a live television professional, and my position as a lecturer over many years, helped frame the hypothesis in view of the needs still present in the industry. As a professional reflective practitioner, I have worked on numerous real time genres including children's programs, news, sport, cooking, drama, music, current affairs, breakfast television, and light entertainment in several roles. In addition, my knowledge as a director and producer of live productions has informed this research.

This chapter provides a theoretical framing of the research, and a research plan through which the theory developed, is tested against data gathered in the field. As the concept of creativity is central to the research, the term is examined through a literature review that leads to a better understanding of the sort of intellectual creativity that permeates the field of live television. Furthermore, the background to the problems faced by industry, and the solutions they have adopted are examined. Finally, in order to begin to understand the field of live television, a more thorough explanation of live television, and how it is produced through multi-camera production, the core of live television, is outlined.

Chapter 2 situates television production and the pedagogical models within the history of the university. An examination of the university system is relevant to the problem in that professional, or practical degrees in Australia are often viewed as vocational, with this form of pedagogy not seen as liberal education. Therefore, the understanding that contextual analysis and intellectual creativity within craft skills areas, defined as 'vocational', does not seemingly exist, has an effect on pedagogies employed by the academy relevant to television production. The chapter makes out the case that this attitude presents as a bifurcation of theory from practice, with irrelevant resources and graduate outcomes aligned more toward single camera production, as the creativity of the live television professional is overlooked.

Chapter 3 situates theories of learning in support of the central contention that live television teaching techniques, seen as 'vocational', can engender 'creativity' through exploring previous research on how we learn and gain knowledge. It demonstrates the notions of memory, habitus, and more significantly the theories surrounding metis as a form of reasoned strategizing, during real time embodiment in a field. In addition, the chapter examines skills and attributes of consummate television professionals in line with the theories, and substantiates the existence of an intellectual creativity within the field of live television, aligned closely to metis.

Chapter 4 examines and evaluates the data during professional reflective practice and through qualitative interviews, in order to explicate the dispositions and learnt skills of the live multi-camera operator. In so doing, a set of consummate masteries is established in line with the existence of intellectual creativity. Further, it illustrates self-direction and a form of metis or reasoned strategizing defined as intellectual creativity.

Chapter 5 examines and evaluates the data through direct and participant observation, and illustrates the dispositions and learnt skills of the EVS operator, the director's assistant and the vision mixer. The sighting of intellectual creativity of each role is presented and validated. In addition, teacher/student evaluations, and analysis of an immersive degree are outlined in support of the hypothesis. It shows that immersion during live production enables reasoned strategizing and intellectual creativity to take place.

Chapter 6 takes the previously presented data, and establishes a core set of consummate masteries of the live television professional derived from the four roles analysed. The masteries are based firmly on the proposition that live television professionals recall memories to action, 'in the moment' and into the future, during 'real time' production. It argues that it is during the stage of live production that intellectual creativity, although seldom observed, takes place. An equation that sets out the steps of how a live television professional achieves 'time-future', which is explained in-depth in the same chapter, illustrates the process. The equation also helps to show forms of 'aesthetic masteries', to illustrate that aesthetic masteries found in 'time', are where intellectual creativity exists within the field of live

television. This develops an argument central to the findings of the thesis that creativity is present in different forms, as expounded by the ancient Greeks and Romans, that creativity is both individualistic and communal. It also points to creative output as part of the *process* as well as the product, illustrating that creativity may not be easily observed, as the immediate practical aspects of individual and communal production obscure it.

Chapter 7 concludes that the evidence presented substantiates a need to rethink television production pedagogical models employed at Australian universities. It also puts the case for an immersive pedagogical model within the field of live television, and for open debate on future policies surrounding academic, government and industry policy.

Theoretical framing

The project set out to capture the innate dispositions of television professionals. It sought to establish which traits, including passion, self-discipline and commitment, might personify individuals who choose to work in the field of live television, and as a result the certain type of pedagogy that might be needed for these individuals. It also sought to demonstrate how such dispositions by individuals could be learned through certain pedagogies, and adapted to the field of live television, in order to realise the aesthetics that characterise creative work within this field.

The research explores theories in relation to the nature and production of knowledge, to argue for a particular type of education for live television practitioners. In so doing, it theorises and tests understandings of the intellectual and creative development of the live television narrative, in order to explicate the particular language of the field that remains obscure to outside observers. The approach is designed to illustrate these knowledge gaps in a way that informs pedagogical policy discussions, necessary for the appropriate outcomes. This thesis also explores the reasons why such research might contribute to alleviating current problems that confront the television industry, and better serve social and economic needs.

Television professionals are constantly using multiple semiotic modes to interact with one another and the production processes. During the Coldplay concert of October 2011, streamed live on the Internet through YouTube, an array of digital tools were utilised. The event was used to promote a new album and enabled viewers to experience a live concert incorporating interactive tools, including multiple camera angles and a director's cut. However, the core production values and consummate masteries of the multi-camera professional were identical to those of any live production, including live sporting events. The argument for developing applicable pedagogies lies in the set of multi-camera masteries, utilised by the crew prior to the distribution of the event, over the Internet. The production crew were live multi-camera television professionals, and not filmmakers. Their ability to work in real time was paramount to the success of the concert, and ultimately the video streaming over the Internet.

Based on the value of sport to the Australian economy (Figure 8 Appendix 1), and the amount and diversity of the live televisual experience to a substantial audience, sport was a focus of live television production throughout the research. It became evident from the research that the dispositions and skills employed by the live television professional during a sporting event, lead to intellectual creativity through a set of consummate masteries. My research and analysis sought to align the consummate masteries of the live television professional, with the needs of the audience, through live events such as sport. As sport plays such a significant part in Australia's economic and social sphere, as well as its outstanding contribution to the creative industries, live outside broadcast production roles employed during sporting broadcasts were used as a point of focus for the study. Further, they were also utilised to address the misconception that below-the-line professionals such as director's assistants, vision mixers, EVS and camera operators are not creative in the roles they undertake during live television production.

Finally, during the research it is evident that a team sport, like live television, happens in the moment, in real time. This factor drew out the essence of the research, and provided the correlation between the theories of learning in Chapter 3, and how those theories align to learning the live television process in Chapter 6. The theories of learning established that immersion teaching provides a suitable habitat for

creativity in the field of live television, and it is during the 'live production' sequences during immersive teamwork that intellectual creativity takes place.

Developing a research plan in line with the theories

As a professional reflective practitioner, with over 40 years in both industry and academia, I was aware of an inner creativity in all the roles I had worked in. It was this knowledge that prompted this research. Firstly, as a television professional I have worked in the public, private and pay television sectors, in addition to my freelance work. My background in live television spans a number of genres including news, light entertainment, breakfast programs, music programs, cooking, current affairs, drama and sport. My background is relevant to the research because I have worked in roles in both film and television, and know from experience that the roles I performed in film gave me more time to reflect on problems. It also gave me more time to try out different solutions. In live television there is no time to reflect, as the solution to a problem needs to be resolved in an instant.

Secondly, over a period of 24 years I have written courses, subjects, and assessment criteria, and taught at tertiary institutions in the UK, Australia, United Arab Emirates, New Zealand and Hong Kong, including six universities - four in Australia, one in the UK, and one in the United Arab Emirates. This global experience has given me a working knowledge of film, television, and new media curriculums in the English, American, Australian and New Zealand education systems. However, I have only found two degrees that provided the live television industry with intellectually creative graduates, with the skills and attributes, applicable to the television industry. The first, at Charles Sturt University was a highly structured, project-based model with very few electives, and the second at the New Zealand Broadcasting School, was a totally immersive project-based model with no electives.

The emphasis of this research, placed on sporting events, is a prime example of where the television industry is in need of professional operatives. As a professional crew member on live sporting events, I have worked as a director, camera operator, camera control unit operator, vision mixer, audio director and director's assistant. I have worked on numerous sporting events including the Olympic Games, cricket, car

racing, horse racing, marathons, tennis, all codes of football (rugby, soccer and AFL), equestrian events, sailing and boxing. My experience and understanding, developed during my career, had led me to conclude there was a need for differing approaches to educating filmmakers, as opposed to live television makers. These experiences, coupled with understandings developed through engaging with theories surrounding the development and mastery of various knowledge, forms part of this research, and the testing of my hypothesis in the field, led to a number of conclusions.

Firstly, professionals who produce live television including sports programs and live events, have a set of consummate skills and masteries that are different to film makers. This is not to say that film and television professionals do not have similar skills and masteries. It says that they take different paths to learn similar outcomes. Secondly, the major difference in learning comes from television professionals working in 'real time', as a synchronous team. Just as a sports team or orchestra work as individuals with consummate masteries to produce a highly choreographed performance, so too does the live television production team. And finally, television professionals learn to work inside the environment of live television as creative individuals, the same way in which a musician learns to play an instrument, or a soccer player learns how to manipulate the ball. All three operatives learn through repetition or practising their art, and recitation as in the performance or production.

Sternberg, cited in Tigner and Tigner, explains this further by suggesting: "…a person with practical knowledge is able to apply procedural information to everyday life" (2001, 172). This procedural information is learned through repetition. Furthermore, Sternberg suggests these "recurring situations… benefit from automatization that frees up attention for use elsewhere" (174). In this way, recitation of recurring situations allows for innovation, and with that Sternberg believes that "creative intelligence is thus closely linked to the experience of the individual" (174). Sternberg's theory is important in understanding the focus of intellectual creativity as an individualist attribute. It also helps to understand how it can be learned. This is not to say that creativity cannot be greater than the individual.

Repetition allows an individual to recall memories through recitation. Ricoeur (2004, 27), "designate[s] recollection by the enigmatic term of searching". In this way, recitation through repetition is not merely robotic; it is being ready to perform actions "…without having to repeat the effort of learning again, of re-learning as such" (26). When the musician, soccer player or television professional has achieved a level of 'knowing without thinking', the ability for the individual to become truly creative emerges. As Ricoeur suggests: "The rules of the art [of memory] are of two sorts" (62). Recollection as a form of intellectual labour begins with the easiest, which is the first part or "reproduction, and ending with the most difficult, which is production and invention" (188). The immersive model of learning fits comfortably with the theories presented here, as it enables students to repeat processes until they are refined, thus enabling time for innovation.

In the field of live television, individual creativity as invention of something new, is 'of the moment'. This innovation is obscured by the instantaneous production, happening in real time, by a large team. Even though the role of an individual may be known explicitly by the observer, creativity may not be recognised, as the innovation is happening as a creative strategy 'of the moment'. The strategy, as intellectual creativity, is a real-time assessment of the production process in-line with all the members of the team. Individual strategies respond to the needs of the team, and the production process. Creativity takes place as an individual action, or sets of actions by the team.

During immersion in the production process, the discipline and systems of using the tools to create live television are learned through repetition and recitation, as are the production processes. In the field of live television, the attainment of a set of consummate masteries is required by all the participants, for the production of creativity during total immersion in the environment of live television. Furthermore, the language that guides the creative expression is lost to all those outside the field of live television, and in so doing, is often written-off as a purely 'technical' transaction. However, immersion through simulation of a field has been found to underpin ways in which individuals learn.

Scott Magelssen (2009) in, "Theatre Immersion and the Simulation of Theatres of War" discusses the use of immersion to train American troops for Middle East combat, in a facility at Fort Irwin dubbed the 'Sandbox'. Situated in the Mojave Desert, it is a virtual space mirroring the real Iraq, designed to keep apace of counterinsurgency strategies. According to Honore and Zajac, quoted in Magelssen (2009, 47):

> Theatre immersion rapidly builds combat-ready formations led by competent, confident leaders who see first, understand first, and act first; battle proofed soldiers inculcated with the warrior ethos man the formations.

The theatre replicates, in detail, the conditions the soldiers will operate in, and provides, "realistic, hands-on, repetitive training…designed to illicit intuitive soldier responses" (ibid 47). Moreover, according to Wagstaffe, as quoted by Magelssen (2009, 70): "Adaptability is the watchword at Fort Irwin", suggesting that although the training is repetitive there is also room for innovation. The immersive process of learning strategies and systems through repetitive, real life situations, by the combatants, is the same as on-the-job training described by Colin Dallimore, a freelance EVS professional. Dallimore pointed out that:

> Working in the on-air department was one of those things that was *[sic]* a huge responsibility for such *[sic]* an early age but you also had to be on the ball. You couldn't make a mistake that was the other thing. The discipline, mentally, was taught straight off the bat for me. You had to be there, you had to do it right (Personal interview, Oct 26, 2008).

The on-air department is purely a real time experience, and as Dallimore demonstrates, when the professional has learned the basic systems and processes effectively, her/his ability to solve problems (either technically or creatively) becomes enhanced. The point of 'consummate knowing' allows the professional to make adjustments, decisions, and counter moves to add to the creative output of a production, with all the other team members; just as a soccer player manipulates the ball during a game, judging all the elements of the game including the position of other players, his speed, direction, and desired outcome.

The complex nature of the interaction of a television crew during the live production process is second nature to me, just as it is for Dallimore, when describing the team at the cricket:

> You've really got to be on the ball for everyone's sake not just mine for myself but other people are relying, at times on that organisation that we all do. Like I might say, "what's the number for that event?" because I didn't get a chance to get it because I was doing something, well the guy next to me will say, "It's these three numbers". So we're all helping each other out; exceptionally as well, which is good (Personal interview, Nov 26, 2008).

At the point when any experienced professional knows their job intricately, and the part their colleagues play in the collaborative process, the production unfolds seamlessly. The explicit language that is live television takes place in the moment, and into the future. It is during this phase that the dispositions that characterise the television professional, and the position they have reached inside the field of live television, allows creativity of thought and action, to augment the collaborative production.

The initial investigations into learning centred around repetition and recitation, supported by professional reflective practice, and the data presented in the qualitative interviews, supports the research strategies and methods employed, and outlined below.

Research strategies and methods

All of the elements of the dispositions of live television professionals, and the characteristics of the environment in which they work, led to a process of learning through reflective action. The theoretical framing of the hypothesis, and the approach to the investigations, led to the conclusion that Action Research was the key research methodology. Therefore, the strategies required for examination of the theories, in relation to the nature and production of knowledge particular to the education of live television practitioners, led to the use of a mixed qualitative methodology with:

An emphasis on the qualities of entities and on processes and meanings that are not experimentally examined or measured (if measured at all) in terms of quantity, amount, intensity, or frequency (Denzin and Lincoln eds. 2008, 14).

Research in the form of qualitative interviews, observational and participatory observation research, and professional reflective practice was used to establish the roles of live television practitioners, and demonstrate the existence of creativity in the live television environment. The investigations also sought to establish that the lack of a language essential to extricating the creative nature of live television production, might have impeded pedagogical discussion, and policy development necessary to:

1. Deliver employable graduates with the masteries and skills applicable to live televisual narratives and the changing face of television.
2. Explicate and explore the creative characteristics of the live television professional.

Over the course of the investigations, action research began to emerge as a means to produce a broad examination of the objectives. Action research sets out to undertake investigations that are socially responsible, politically informed, and committed to praxis and social change (Denzin and Lincoln eds. 2008, 46). Action research as a "process of systematic reflection, enquiry, and action carried out by individuals about their own professional practices" (Frost quoted by Costello, 2011, 5), was found to provide a thorough foundation for further methodologies. Not only is action research an individualistic form of investigation and critical analysis, it is also beneficial in that it is a collaboration of knowledge by all stakeholders, to undertake a process of inquiry, and formulate actions based on the results to implement change.

The use of action research here directly involves the field of live television, with the observation and examination of individuals including myself, working in the moment. According to Marshall and Rossman (2006, 98), observation "entails the systematic noting and recording of events, behaviours and artefacts (objects) in the social setting chosen for study". Observations were undertaken on three levels

firstly, as *direct observation,* secondly, as *participant observation* (Norton 2009), and finally, in my capacity as a *professional reflective practitioner* (Costello 2011).

In context, professional thinking is more often than not influenced by a number of factors, "both internal and external that affects our day-to-day work and that have to be taken into account in our professional thinking" (Bannigan and Moores 2009, 345). In this respect, in my capacity as an action researcher, I am examining the problems from both inside and outside the field. I am at once an observer and a participant.

Direct observation was undertaken at a live international cricket match at the Gabba in Brisbane, in October 2008. During direct observations, the people involved were aware they were being observed. Based on my knowledge and experience in the live television field, I was able to observe the production process, and the use of the language associated with the event, as it happened in real time, on two levels. Firstly, during the interaction of all the crew whilst participating in the collaborative process of the live broadcast and secondly, direct observation of the individuals who were being analysed in their specialist areas of live production. The specialists were the director's assistant, the vision mixer and the EVS operators.

The length of direct observation during the live cricket outside broadcast, on Sunday 26 October 2008, began at 0830 and continued through until approximately 1130. The first hour and a half of continuous monitoring was the set-up stage, with the second hour and a half constituting a portion of the live broadcast. Continued observation of the entire broadcast was not undertaken, as the time allocated for the live part of the broadcast enabled me to establish contemporary roles, within the formulaic content of a cricket match. Observation covered sequences of bowling, batting, fielding, scores established through runs, and the change of bowlers and batters. It also included production setup, and live and pre-recorded programming, as well as specific observation of the director's assistant, vision mixer and an EVS operator. The collaborative process undertaken by all roles during the live broadcast was also noted. Emphasis was placed on television as a spontaneous medium, as it is this fact that sets it apart from film production. As an observer, I approached the task

with five questions. The interpretation of the observations was *descriptive* for question 1, and *evaluative* for the remainder of the questions listed below.

1.   What types of job roles are being undertaken?
2.   What types of skills are required for the job?
3.   What impact does technology have on these jobs?
4.   What type of instantaneous interaction do the participants require?
5.   Why do participants make mistakes?

The observations provided data on the current practices of television production in two major areas of live outside broadcasts. Firstly, central production, where the director's assistant and vision mixer work in very close collaboration with the director, and secondly, videotape operations. 'Videotapes' is a production area used by the EVS team who provide all the program segments, replays, and sound and vision for compilation into edited footage. Videotape also records the program as a back up for archival use. The observation process was not intrusive, as it focused on production processes and procedures rather than the cultural, or social environment of the outside broadcast.

The second method of observation, or *Participatory Action Research (PAR),* is seen as reflective practice and reflection-in-action (Reason and Bradbury 2001). PAR was utilised to examine an immersive multi-camera television course during my work at the New Zealand Broadcasting School (NZBS). Reason and Bradbury (2001, 512), define participatory action research as:

> A recognized form of experimental research that focuses on the effects of the researcher's direct actions of practice within a participatory community with the goal of improving the performance quality of the community or an area of concern.

In this way, PAR suggests the person doing the study is part of the group under observation (Norton 2009, 107). The intention of participatory action research is to preclude the use of disassociated outsiders. PAR as inclusive research, does not locate a problem, collect and analyse the data to find solutions, without the inclusion of the community they are working for (Reason and Bradbury 2001, 512). As PAR is

designed to identify problems that are specific to the stakeholder's, the methodology was relevant to the case stated above. That is, students learning how to work as part of a live television crew. During the process of participatory action research, as a problem is found, solutions are established and applied directly to the problem.

Participant observation, and reflective practice attempts to eradicate concerns expressed by Webb, Schirato and Danaher (2002, 46), that "qualitative research tends to lack a theoretical or reflexive dimension", meaning it "simply reproduces rather than tests the knowledge systems on which the research is based" (46). In this instance, reflection in action played a significant role in providing a strategy in which to nurture and develop the ways, to understand and teach the processes of live television.

The participatory action research took place during an intensive seventeen-week immersion course at the New Zealand Broadcasting School. The use of the term 'immersion' refers to the nature of the course; in so much as the students participate in a learning environment that closely resembles industry practice, rather than a classroom. The immersion does not suggest students, or professionals learn without thinking, but rather immersion provides an individual with the capacity to self-reflect, and in so doing the intensity of learning is enhanced and reapplied.

The first three weeks of the course were utilised to introduce students to the roles they would inhabit during live productions. They also gained competency in craft areas such as studio camera, vision and audio mixing, record and replay using hard drive and videotape, and production roles such as director's assistant. Repetition inside an immersive environment enabled the students to resolve problems in their individual roles, with memories unsullied by large passages of time. While they worked together as a team they supported each other, and provided solutions to other people's problems, which they had already solved themselves. In this way, the solutions and knowledge gained were reinforced.

In my position as lecturer, and in my capacity as a producer during productions, the students and I were challenged to find solutions every day. Not only did I use my professional experience to find answers, I was also able to gauge the level of

assistance I could give to each individual during live productions. The de-briefing process built into the course after each production, enabled deliberate times for reflection, and collaborative input into finding solutions.

The third phase of data collection and analysis involved professional reflective practice in my capacity as a camera operator, on live harness racing. Reflective practice is found in Bourdieu's notion of reflexivity, which Wacquant describes as "the inclusion of a theory of intellectual practice as an integral component and necessary condition of critical theory of society" (Bourdieu and Wacquant 1992, 36). In order to define professional reflective practice, it is broken down further into two parts. Firstly, Donaghy and Morss, as quoted by Bannigan and Moores (2009, 1), propose reflective practice "draws on experience as its source of knowledge". Secondly, critical analysis resulting in applied solutions, described by Schon (1983, 21), as "professional activity consists in instrumental problem solving made rigorous by the application of scientific theory and technique". According to Bannigan and Moores (2009, 345), "professional thinking occurs in the milieu of practice". In television terms, as professionals, we cannot separate our professional thinking from our professional environment.

The notes taken during all observations constituted a broad understanding of the interaction of individuals, and their roles in relation to the environment under observation. Table 1 outlines details of the participatory action research, observational research and professional reflective practice.

Table 1: Details of the research

Location	PAR	Date	Words	Advisory Committee
New Zealand Broadcasting School	Digital Film & Television Degree	Feb 2009- July 2009	5,073	First year multi-camera course (22 students)
Location	**Direct Observation**	**Date**	**Words**	**Subject matter**
Gabba, Brisbane	Cricket OB	Oct 26 2008	3,438	Vision Mixer, DA, EVS & overall production
Location	**Professional Reflective Practice**	**Date**	**Words**	**Subject matter**
Gold Coast	Harness Racing	Nov 6 2008	1,736	Camera operations & overall production

Other methods used to investigate the theories as presented, included the recorded transcripts of in-depth qualitative interviews. The research sought to explicate through the interviews with television industry representatives and academics that have come from industry, the production characteristics of the live television environment, and the creative practice of professionals that inhabit that space. They also sought to establish what problems the industry had in relation to graduate outcomes.

As there was a need to focus on the expertise of specialists teaching television and/or film, or industry professionals, interviews were used to collect the data (Marshall and Rossman 2006, 105). In a number of cases the specialist respondents had knowledge and experience as teachers and industry professionals. The interviews were *semi-structured,* and followed predetermined open-ended questions (attached as Appendix 2). However, flexibility was allowed through further queries to the respondent's answers (Norton 2009, 99). Due to this lack of constraint, the interviewees were encouraged to add relevant information to the queries, which may otherwise have been overlooked.

Eleven elite interviews were undertaken during the period August 18, 2008 to November 27, 2008. All the interviews conducted by me were either face-to-face or over the phone, and averaged from thirty to forty-five minutes. The group of interviewees consisted of four focus groups from industry, education, in-house training and professional practitioners. As three television professionals had been observed during a live broadcast, they were interviewed after the production.

The interviews included four focus groups involved in the education, training and production of television. The four groups were:

1. Four interviews with either lecturers or course leaders in higher education, with responsibility for film and television degrees. Each of the respondents had worked in the film or television industry, with three working in live television.

2. One interview with the Manager**,** Training Quality and Accreditation at the Australian Broadcasting Corporation (ABC). The ABC had the reputation as one

of the biggest trainers of television professionals in the early days of television in Australia

3. Two interviews with heads of production for television broadcasters at Seven and Network TEN. These interviews aimed to provide information about the industry, and the requirements of broadcasting employers from university graduates and other employees. Both interviewees had worked in various capacities in live television during their careers.

4. Four interviews with industry practitioners were conducted across a range of jobs including vision switcher, EVS operator, director's assistant, producer/director and scriptwriter. These interviews aimed to provide information about industry requirements of graduates, from the perspective of broadcasting peers.

Respondents 1-8 in Table 2 were conducted in person. Respondents 10 and 11 were interviewed over the phone after having been observed during an outside broadcast (OB) of the cricket.

Table 2: Qualitative interviews

	Respondent	**Position**	**Company**
1.	Tim McDonald	Managing Director	Seven Sydney
2.	William Fitzwater	Writer/Director/Producer	Freelance
3.	Craig Delahoy	Manager, Training Quality & Accred.	ABC
4.	David White	Director of Sport	Network TEN
5.	Anonymous	Executive Producer/Director Sport	Freelance
6.	Anonymous	Department Head	AFTRS
7.	Ian Lang	Head	VCA
8.	Michael Sergi	Lecturer	University of Canberra
9.	Anonymous	Directors Assistant	Freelance
10.	Hugh Johnson	Vision Switcher	Freelance
11.	Colin	EVS Operator	Freelance

Each interview was transcribed and keywords, phrases and descriptions, were gathered and compared across all of the respondent's answers. The information collated began to show the key skills the industry saw as pertaining to employable

university graduates. It also highlighted the contrast between graduate expectations, degree outcomes, and the needs of the television industry. The data showed sufficient evidence of a lack of understanding of the roles observed, and graduate outcomes out of step with the television industry.

As stated previously, the imbalance in graduate outcomes has arisen, in part, in what constitutes creativity inside the field of live television. (FIX) This misconception, from people outside the field of live television, has flowed through to how live television is taught, and regarded in the academy. Therefore, prior to examining the origins of the prevailing attitudes toward television production, through its place in the industry and the education system, it is necessary to explore the concept of creativity. With an understanding of this important concept, and how intellectual creativity may fit within the field of live television, as either an individualistic or communal process, the thesis examines theories of learning, and observes the dispositions and learnt skills of people who work in live television. In so doing, it sets out to establish the consummate masteries of each role. With the consummate masteries of each role in place, a set of aesthetic masteries, particular to the creative live television practitioner based on time happening in the moment, and into the future, demonstrates how intellectual creativity emerges during reasoned strategizing, within the live production phase of program making.

Creativity

Creativity is considered to be the discovery of something innovative or new. However, there are differing schools of thought around individual creativity and collective creativity. On the one hand it is seen an individual innovation, and on the other as a collective process of thoughts and actions to produce something new.

The earliest concept of creativity is found in Greek literature. The Greeks believed creativity came about when the Gods or Muses "breathed creative ideas into the artist" (Weisberg, 1986, 1), inspiring individuals to produce creative works. The inspiration (from the Latin to *breathe in*) was articulated as an unconscious process. In this way, the individual was not aware of the origins of their inspiration, believing it came from the Gods or Muses. For example, individuals who received the

blessings of the nine daughters of Zeus were given a touch of divine genius to create such things as poems, dance, comedy and music (1).

The Roman interpretation of creativity was spiritual, however in the later Classical Roman world, the Roman concept of *epithet genius* as "an attendant inner spirit" (Negus and Pickering 2004, 138), was attributed to everyone from birth, and was described as a *daemon.* In this expanded understanding of the concept, the daemon was found within particular groups and within particular localities, and therefore was not "confined to a few singularly endowed individuals" (138), as in Greek mythology.

However, in the eighteenth century the term genius became a superior individual of extraordinary creative achievements. The exclusivity of the person possessed, was compelled by the daemon to "strive towards the dizzying heights of artistic achievement" (Negus and Pickering 2004, 138). The "divinely inspired" artist was seen as "the fittest agents for the gradual secularising transition from God to Man" (139).

It is the Roman notion of creativity, and the assorted adaptations of this understanding of creative practice that have ebbed and flowed during various historical transitions to the current day that inform understandings of the activities of the television professionals under study. In the live television arena such a conception of creativity, as new and innovative ways of problem solving, can inform reflections on their simultaneously collective and individual process of learned experiences and reflection, resulting in innovative solutions in a way expressed in the words of Aristotle who wrote:

> All Art has to do with production, and contrivance, and seeing how
> any of those things may be produced which may either be or not be,
> and the origination of which rests with the maker and not with the
> thing made (MobileReferences, Nicomachean Ethics IV, 106).

However, for those who see creativity as the *result* of *individual* output, the work of those for whom creativity is contained in the *process* of producing an output is obscured. In this way, the creativity of the group, and various individuals within the

group, is obscured by the end product, which in turn is more often than not, in the live television field, credited to the producer, writer and director.

Such a conceptualization denies the reality that, in the performing arts and the multi-media industries spawned by the twentieth century, creativity is nearly always a collective process. In light of 'the team', the processes involved in creativity stem from both the individuals inspiration and acts, inclusive of, and in addition to, those of the team. Therefore, to observe all creativity inside the field of live television, this research must examine the processes of production as well as the end product itself. The following section on intellectual creativity seeks to more fully situate the persons, and operations under study, in a context wherein the particular features of their creative activities are more open to investigation.

- *Intellectual creativity*

Kleiman in, *Towards Transformation: conceptions of creativity in higher education,* sought to adapt creativity to the educational field. In his work he pointed out:

> Creativity is something that is new to individuals…the transfer and adaptation of ideas from one context to another…it involves exploring new territory and taking risks (Jackson and Shaw quoted by Kleiman 2008, 210).

The first form as quoted by Kleiman (2008, 209), from the National Advisory Committee on Creative and Cultural Education (UK), suggests: "Creativity is imaginative activity fashioned so as to produce outcomes that are both original and of value". 'Imaginative activity' is an important aspect of this definition as it shows creativity is produced through action. The second definition by Knight, as quoted by Kleiman (2008, 209) suggests:

> Creativity constructs new tools and new outcomes - new embodiments of knowledge. It constructs new relationships, rules, communities of practice and new connections - new social practices.

In this regard, creativity goes beyond action to construct other forms including social practices. This second form of creativity requires intellect, and interaction with wider

communities. According to Chapman, intellectual creativity is one form of creativity that provides individuals with:

> The capacity for synthesising a vast array of material, for discovering new connections and for ordering the material into simple hypotheses…and the ability to pull arguments or theoretical models apart (Chapman, 2002).

In this way, individuals have the ability, through reason, to analyse all the information presented to them, and through new ways of integrating selected parts of the information can find innovative outcomes. This suggests that intellectual reasoning is at the basis of creativity.

In *Nicomachean Ethics VI,* as translated by Barnes (1984), Aristotle outlined intelligence in three forms, each with their own distinctive outcomes. These forms were *understanding,* or "knowing", *action* or "doing", and *production* or "making". These forms provided us with the "designations of *theoretical, practical,* and *productive* intelligence" (*Nicomachean Ethics* VI Books IV-VII). According to Tigner and Tigner (2000, 171), Aristotle's "theoretical, practical, and productive intelligence" is similar to Sternberg's "triarchy of analytical, practical, and creative intelligence" (171). Tigner and Tigner, go on to propose that Steinberg's creative intelligence, and Aristotle's productive intelligence both "involve designing and making"(171). Furthermore, citing Aristotle, Tigner and Tigner, point out that productive intelligence is "the reasoned application of technical skills, as those of the architect" (174). This form of intelligence, translated as practical wisdom, is in Aristotelian terms, found in a practically wise person or *phronimos*. This practical wisdom defined as *phronesis* (169), or practical intelligence, "provides guidance to one's dispositions to act" (174). In this way, intellectual creativity is both academic and practical. It is a productive intelligence guided by reason, resulting in innovative outcomes. Further, in the context of film and television, Philip Hodgetts, a consummate professional of 30 years in the area of production and business, on the his personal blog proposes:

> Creativity is problem solving. Finding a creative solution means finding a solution to an insolvable problem. Good editing is highly creative because there are many problems to be solved: what's the

story, where's the story, how do I convey the story in the available time, how do I make this scene flow, and how do I … keep true to the Director's intention? These are creative decisions that require skill, experience and creativity to solve.

Designers are creative… These are particularly creative as they involve both science and "art" or, more accurately, aesthetics (Hodgetts, 2011)

The application of science and art in the form of aesthetics is at the heart of the intellectual creativity, found inside the field of live television. However, the work of craftsmen other than artists, sculptors, musicians, writers and the like, defined as 'applied', was not viewed as creative. The view of creativity as 'high art' that reinforced a distinction between 'fine' and 'applied' art was drawn from a deeply hierarchal view of creativity, where "creation was part and parcel of the late Romantic elevation of the artist/author as genius" (Pope, 2005, 39). In this way, the 'artist' was seemingly the only person capable of creativity. This definition does not take in to consideration all the forms of intelligence described by Tigner and Tigner, Sternberg and Aristotle. Furthermore, Aristotle believed art, in its strict and proper sense, must be "a state of mind, conjoined with true Reason, apt to Make" (Nicomachean Ethics VI, Book IV).

In the context of this thesis, intellectual creativity presents as aesthetics through reasoned strategizing, derived from a set of consummate skills and attributes. Intellectual creativity, in terms of live television production, involves the ability to produce new and innovative outcomes during the live production process. The outcomes are based on one's ability to think logically, analyse, strategize, and respond to the output of the team, utilising all the skills and attributes acquired in the field of live television. However, this thesis argues that the processes of live television are symbolically stripped of the notion of intellectual creativity, due in part to the fact that it is subsumed in both course design and presentation, under the more generic heading of mass communication.

In this context, Professor Alan McKee, found an aversion to academics by the television industry, and an inability by academics to see beyond television as a 'mass

medium' (McKee 2005, 97-98). McKee, articulates this conundrum in the following way:

> The degree of nastiness, which has been shown by researchers in Film and Television studies, towards those who work in television has often been breathtaking. Theories of ideology and the media often discount the creative, intellectual work of those who work in television, casting them instead as agents of oppressive ideologies—who are either quite unconscious of the work they do in reproducing dominant discourses (thoughtless); or who actively collude in maintaining the hegemony (unethical) (2005, 99).

The above extract serves to illustrate that universities that lean toward the traditions of liberal education tend to perceive television production as intrinsically 'generalist', and not an intellectually creative medium. Therefore, universities have a tendency to leave television production education to the vocational education sector, implicitly undervaluing the particular creative intelligence developed. Universities see television production as a particularly vocational aspect of the mass communication field, rather than part of a creative realm that is live television production.

In furthering this idea, I argue that in part, political manoeuvring by policy stakeholders has sought to marginalise the television industry within universities, as 'mass communication'. As a result, the specialisations of television professionals, are more often than not, observed by outsiders as technical operators who push buttons, an understanding that I argue, leads to a misrecognition of the essentially creative activities television professionals exhibit during program production. Such understandings extend to academia, where increased emphasis on the 'core business' of teaching and research can appear at odds with degree content described as vocational training. In so doing, there is an added failure to acknowledge the intellectual and creative capacities required by industry, contained within the skills described as vocational.

The following section seeks to outline the origins of the misinterpretation, of the nature of creativity, within academia. As a result, it will provide a means through which to allow for alternative understandings that inform pedagogies, thus allowing the creative development of aspiring live television professionals.

Background to the problem

In Australia there are twenty-three universities and numerous specialised colleges offering courses in film, television, and new media. The emphasis of the research is centred on university degrees rather than degrees offered within the TAFE system. The reason for this focus is due to the evolution of 'screen' degrees within the university system, and the application of particular graduate outcomes to those degrees. Evidence gleaned from a course analysis outlined in Chapter 2 shows only three Australian universities offer an undergraduate degree or major in multi-camera television. The other degrees only offer units in multi-camera television. The three universities are Charles Sturt University in Wagga Wagga, New South Wales, Curtin University in Western Australia and Bond University on the Gold Coast in Queensland. My research suggests that only Charles Sturt University has a degree that is aligned to industry needs. Due to a very small number of degrees with a focus on multi-camera television, and the lack of suitable graduates, the television industry began to formalise their own training and certification system in 2004 (Innovation and Business Skills Australia 2006, 3).

The need for professionals with knowledge of HD systems is now an industry standard. The lack of trained personnel within the television industry increases with the introduction of new technologies, and with the loss of skilled personnel from an ageing workforce seeking retirement. In addition to the five free-to-air networks, training problems, and the introduction of HD and 3D television has inflamed the skills shortage within the industry for large production companies, such as Global, Foxtel and Cutting Edge.

On closer examination of the industry's problem, it became apparent that the area of live television was in the deepest trouble. Therefore, the television industry along with educationalists from the TAFE sector, sought to find solutions to the problem. In 2004, a group of Australian educationalists and industry representatives responded to the broadcast industry problems by developing the Cultural Pathfinders Project. In so doing:

Broadcast industry employers sought a means of developing skills for the next generation of digital workers (Innovation and Business Skills Australia 2006).

Furthermore in 2005, The Society of Motion Picture and Television Engineers (SMPTE), discovered that: "Not only was the brain drain in the Media industry real, but [they were losing] the learning culture that existed prior to the nineties. It just … went away" (SMPTE 2007). Due to the loss of specialist training within the networks, and the ageing workforce, the television industry identified shortages in the areas of outside broadcast camera operators, EVS operators, directors assistants (live), technical managers, vision switchers, lighting directors, videotape operators and broadcast engineers.

To overcome "the strong belief in the industry that we have, or will soon have, an engineering skills shortage which will severely impede the sector's growth and innovation" (MITC 2007), SMPTE set up the Media Industry Technologist Certificate (MITC). The introduction of the Media Industry Technology Certification by the Society of Motion Picture Television Engineers, and Global Television's, Television Trainee Operators College (TTOC), saw the television industry, as major stakeholders, leading the effort to overcome the problems presented by lack of training. However, the MITC is on the back foot, and has had to overcome a number of stumbling blocks since its inception. The uptake on the certificate, and the support by industry is not as expected because:

Education, training and certification [needs to be seen as] important before workers in the media industry will bother to put themselves through the pain of gaining formal knowledge (Personal communication, (John Maizels, Fellow of the SMPTE, Broadcast Engineer, Technical Director and versatile television professional Aug 17, 2012).

The TTOC was set up with government funding in collaboration with North Sydney TAFE.

According to Tim McDonald, General Manager Seven Network Operations Sydney, at the time the TTOC was being run by Global:

> The only thing the industry doesn't like about it is the industry doesn't necessarily want Global to run it commercially. The industry wants Global to create more and more people who can work (Personal interview, Aug 26, 2008).

However, due to the loss of government funding, and a lack of financial support by the networks, North Sydney TAFE now runs TTOC without any input from Global, but with collaboration from Charles Sturt University's, Bachelor of Arts (Television Production).

It should also be noted here that SMPTE classify television professionals who use certain types of equipment as operators, technicians and engineers. The research found that a division by the screen industries into technical and nontechnical has had a significant impact on the approach we have to teaching television production at Australian universities.

Although, the days of on-the-job training by the big networks may have disappeared, in reality the move toward this form of learning has begun again. This is due to the division between what the television industry needs, and the type of graduate, degrees produce. In relation to training, The Australian Broadcasting Corporation has played a major role in where the industry is today. Before university degrees, and other courses run by TAFE and private colleges, television industry training was done in-house. The Australian Broadcasting Commission as it was originally called, was highly regarded as a training provider. Craig Delahoy, Manager, Training Quality and Accreditation at the Australian Broadcasting Corporation (ABC), described how training at the ABC finished nearly 20 years ago:

> It was all wound up and it was all for budgetary reasons. When you think about it we were putting through about 50 people a year through a five-year program. So at any one time in the ABC around the country there were 250 people employed as trainees. And then at the end of the five-year program we were lucky if 3, 4 maybe 5 stayed with the ABC… The rest were getting poached by the commercials or moving into freelance or the film industry (Personal interview, Aug 27, 2008).

McDonald described one of the major issues that have affected industry training. He believes it's due to the fact:

> The networks are no longer stewarding people through their business anymore. It was almost a pseudo apprenticeship. That stopped a number of years ago and that stopped for a couple of reasons and one of them was the training levy that disappeared. We were all using that as our only way of maintaining training (Personal interview, Aug 26, 2008).

McDonald is referring to all the free-to-air networks and the ability they had to train their personnel to specific company standards. Due to the size of the large networks there was always a pool of experienced professionals to fill the roles required. The training provided in-house by the ABC was more structured than the commercial stations, however the ABC also had the same pool of experienced people learning on-the-job. When the training levy was lost, the networks were pushed to find ways to save on spending, and as McDonald pointed out:

> The expectation of the markets is that our profitability goes up every year and not down... we've got to find something to throw out and what we've thrown out is our cost base; and 77% of our cost base is people…And that whole infrastructure of training, development, support, finance, administration and all those sort of things have collapsed into a tiny little bunch (Personal interview, Aug 26, 2008).

Training incentives may exist, however the networks pushed by their shareholders to make a profit, are loathed to invest in training. The industry, based on freelancers rather than full time staff is saving money, as the freelancers come in, do the job, and come back only when they are needed. Over the last two decades, university and college courses have endeavoured to fill the gap in training people for the film and television industry. However, the majority of courses available in the early years were film production courses, as liberal arts degrees. Television as a university discipline has never really existed in a pure form, except as part of other degrees, for example Journalism. One exception is the degree at Charles Sturt University. This degree will be discussed in more detail in Chapter 2.

Open debate by academics, on education and training for television production, is more often than not included in debate on media studies, and the liberal arts, rather

than production processes, and industry theories. Significant research done in the field of television production pedagogies in Australian universities is difficult to locate. Research done by Annabelle Sheehan (1992) and Annette Blonski (1992), on film and television education in Australia was an exception. International research tends to concentrate on the types of degrees on offer, rather than the evaluation of the outcomes in line with the industry (Niven 1962; Kock, Kang and Allen 1999; Kang, Wolfe and Kang 2002; Bell 2004). However, John Rosenbaum (2001), from Park School of Communications, has produced a paper on practical creativity in the area of television production. Interestingly, the paper was presented in, The International Journal of Engineering Education, as Rosenbaum believes television production and engineering share similar challenges when designing pedagogies. It is suggested:

> Engineers bring mathematics and science to bear on practical problems, molding natural materials and harnessing technologies for human benefit. Creativity is often a key component in this synthesis; the spark motivating efforts to devise solutions to novel problems, design new products and improve existing practices (Gibney quoted by Rosenbaum 2001, 17).

Unfortunately, in Australian universities very little research on pedagogical methods, in the area of television, has been done. In addition, there is little debate on the skills and attributes required to participate, as a consummate professional, in the field. Industry led initiatives such as, The Media Industry Technologists Certification (MITC), and Global's government sponsored training college for the television industry, highlight the need for universities to work more closely with the television industry. While new technologies and distribution platforms sees a merging of television and film practice, open discussion is paramount.

The state of the industry fluctuates and evolves in respect to audience demand and new technologies that ultimately have an effect on job roles. In 1990, the Victorian Arts and Entertainment Industry Training Board (VAEITB), concluded that: "It is very difficult to quantify the scope of employment because of the largely unknown effect of the external forces acting on the industry" (Sheehan 1992, 36). In addition, the size of production budgets has an effect on the job roles taken on by television personnel. According to VAEITB: "The nature and scale of production will regulate

the grouping of occupations employed on a project" (36). In small budgets a number of job roles may be performed while on a larger budget, job roles may be more defined.

As the creative screen industries begin to merge, employing similar technologies, the need for flexibility and understanding of all roles is apparent. However, liberal educational models at Australian universities maintain traditional pedagogies, more in line with film production. This is due to a belief that intellectual creativity does not appear to exist inside this mode of communication known as television. A language that describes television as 'mass communication' does nothing to contradict this perception because the technology of the medium over-powers the content, and the intellectual creativity required to produce it. In order to understand where intellectual creativity exists inside the field of live television, one must first understand live television itself. The following section introduces live television, and provides further understanding of the multi-camera production process, and the roles of the people who make live multi-camera television. It also seeks to develop a case for immersive learning in line with the instantaneous collaboration of the team, during 'real time' production.

An introduction to 'live' television

In order to place the term *'live television'* in context, the term *television* is used to define programs and events produced, and viewed via a television receiver, or small handheld devices including mobile phones. While, *live* television is defined as a televisual narrative produced in a linear sequence, in *'real time'*. At the time the live televisual narrative is being made, it is broadcast simultaneously to an audience. In this way the viewer is experiencing the televisual narrative at the exact same time as the television team are producing it. The viewer on the other hand, does not see film in real time, as it is compiled shot by shot in a nonlinear sequence over a length of time, and distributed months or even years later.

In the context of this thesis - television is 'live', although "the time of the television event and the time of the transmission, and the time of reception [need to be] one in the same to be determined – live" (Heath and Skirrow quoted by Marriot 2007, 27).

Live television is considered *instantaneous* meaning: "coincidence of transmission and reception" (27). However, instantaneous transmission "is contingent upon the temporal status of the material transmitted" (36). Therefore, what appears to be a live transmission is not necessarily instantaneous. However, instantaneous programs considered to be live television are extended here to contain what is referred to as '*real time*' television programs. Programs such as *The Footy Show* are both instantaneous, and real-time. Parts of the program, such as the panel of presenters, are live, while other parts are recorded 'as-live', and inserted into the show as it occurs in real time. The compilation of live, and pre-recorded segments is then transmitted at the same instant. On the other hand, the *Tour de France* can be considered a live broadcast as it is transmitted directly to the viewer. Real time television programs from large-scale, open-air events or outside broadcasts (OB) to small productions, shot inside a television studio, are usually shot in a multi-camera format.

Multi-camera television production, or the multi-camera television event, forms the basis of live television. The use of multiple cameras cut in real time to produce a program is complex. Live television provides the viewer with an experience not found in film. According to Marriot, television permits us:

> To import, temporarily, the localities of others into [our] own immediate environment without the necessity of being physically present in the space where those individuals are encountering the world (Marriot 2007, 26).

Basically, this means that the television viewer is able to observe the lives of others in another location, as a '*televisual narrative*'. The televisual narrative takes place at the same time the viewer's narrative is taking place. The stories or televisual narratives may be real or fictitious scripted narratives, such as a soap opera. Television professionals refer to this type of televisual narrative as '*live television*'. The live television event is no less a narrative than any other form of production. Every form of live television tells a story of some kind. For example, a game of football is an account of two teams in their quest to win a match. During the event the audience is privy to the highlights and misfortunes of the team, and its players. The audience are experiencing the lives of the players, as the players themselves

encounter the real world. In order to produce real time, live television, the use of an unobstructed and fluid form of linear narrative takes place, known as multi-camera television.

- *Understanding multi-camera television*

Multi-camera production is at the heart of live television. It is the single most important point in understanding the difference between film and television production. Multi-camera production allows the televisual narrative to be created in real time, as a linear narrative. It allows the viewer to see the narrative unfold at the exact same time as the crew producing the narrative see it. It is the same as a spectator standing on the sideline watching a game of soccer. The players are participating in the game at the exact same time as the spectator is watching it unfold. Multi-camera television means that at least two or more cameras are utilised to produce the program. In sports coverage the number may be in the hundreds. These cameras are linked via cables, wireless or satellites to a control room in a studio or an outside broadcast van, and are compiled as one output whilst the program unfolds in real time. At the same time the live sound is collected, mixed, and enhanced with other sounds including music, to augment the mood of the narrative.

All the components of a *live* multi-camera television program including the sound, the pictures, the graphics, the music, the lighting, and the people who appear on the screen are transmitted to the viewer, to appear at exactly the same time the people who make the program see and hear them. On the other hand, a program that has a delayed transmission is referred to as *pre-recorded*.

A good example of a multi-camera television program is a sporting event, or a studio based sports program that includes a variety of sporting segments known as pre-recorded segments. The segments include pre-packaged highlights of earlier games, interviews with players or coaches, and opening titles and closing credits. The pre-packaged segments are inserted into the content of the program whilst it is happening in real time, or as the program is broadcast live. Sports programs that are real time, multi-camera productions, may include all football codes, the cricket, car and bike

racing, *The Melbourne Cup* and studio-based programs such as *The Footy Show,* described earlier. However, as the actual *Melbourne Cup* race is transmitted all over the world the instant the race takes place, it is referred to as *live-to-air*. In the context of this research the terms, 'as-live' also includes the term 'recorded as–live', or 'pre-recorded'.

Many genres or types of television programs are made using multi-camera production techniques. These programs can include news, current affairs, gardening, cooking, children's, talk shows, festivals, game shows, light entertainment, breakfast television, music, special events and soap opera dramas (soaps), that may be recorded live in front of an audience. The next step is outlining who works in live television, and what happens during the multi-camera production process, that sets it apart from single camera production.   Once the foundations of multi-camera production are understood, the roles to be examined can be put into context and the part each person plays when participating in a live program can be observed and examined more thoroughly.

Who works in live television?

It is necessary to demystify the field of live television in order to understand the how, and where, each person fits into the production process. Once the people and the processes they employ are understood, a structure will emerge of how the team operates in real time, in the present, and into the future. In Australia the majority of programs made for television are made by production companies for television networks, or on-sold to distributors. Production companies can range in size from a couple of people who contract a television crew for work as it is required, to large companies with ongoing commitments.

Within this type of environment the nature of television production crew roles tend to morph and blend to fit the job in hand, and more importantly, the budget allocated for the job. On one hand, a large budget with an emphasis on certain production qualities allows producers to contract people with specialist skills. While on the other hand, a large budget does not necessarily mean more specialised crew, as often

money can be swallowed up in other areas including transport, accommodation, and hire of special equipment including planes, helicopters and the like.

In light of this information, and a deliberate sporting focus, the generalist skills of a live events production crew will be outlined here, with an emphasis on stand-alone specialisations. Where job roles are merged the effects of the combined skills will be investigated. It is also noted that Australian television production roles are often a mix between those of Britain and the United States, with roles being recognised by two or more names, and job descriptions dependent on the factors described in the above paragraphs.

A television production generated inside a multi-camera environment will incorporate key personnel. In a number of production companies, and in particular the world of film, these are called 'above the line' personnel. The remainder of the crew fall into the 'below-the-line' category. The terms 'above-the-line' and 'below-the-line' do not reflect standard groups of personnel, but shift to exclude or include crew due to the size of the budget, and the complexity of the production. With this in mind, 'above-the-line' personnel may include:

- *Executive Producer (EP)*

An EP may be in charge of several productions at a time. They manage the budget and liaise with the network or television station, distributors, advertisers, financial backers, actors, performers, on-air personnel and key agents for above-the-line crew. Many Executive Producers work on a freelance basis in Australia today, and generally specialise in certain areas of production, for example sport.

- *Producer*

Producers are in charge of a single production, or possibly a segment from a production (segment producer). They are responsible for bringing together all production elements, cast and crew, and maintaining the smooth operation of the daily workings of the production.

- *Associate Producer (AP)*

The AP assists the producer in all production matters.

- *Production Manager (PM)*

The PM organises every aspect of the production and schedules crew, cast, equipment, facilities, and all other production requirements down to the last minute, and to the last cent. They are responsible for day-to-day budget matters.

- *Director*

The director is responsible for taking the ideas and concepts of the producer, and in collaboration with the producer, transforming them into a finished program, within budget, and on time. Their responsibilities are vast, and cover all production cast, performers, on-air personnel and crew. In collaboration with other key personnel, they work on all aspects of the production, including facilities and equipment requirements, camera and sound coverage, performance and post-production.

- *Sound Designer*

The sound designer, in collaboration with the producer/s and director, design a plan of the sound track or coverage for a production including dialogue, music and sound effects.

Personnel generally found in the '**below-the-line**' category include:

- *Director's Assistant (DA)*

The DA sometimes referred to as the producer's assistant, assist the director/producer throughout the entire production process. Their job is quite complex and can involve tasks ranging from location and studio continuity, and all manner of record keeping, to producing production schedules and program timing. This role will be discussed in depth and analysed further.

- *Floor Manager (FM)*

The FM is a key figure in the multi-camera environment. They are in charge of all the personnel found on the studio floor. On large events transmitted live, or recorded outside the studio, they are responsible for coordinating the director's requirements 'on-the-ground' including cueing on-air personnel, and maintaining the smooth running of the production outside the OB van.

- *Assistant Floor Manger (AFM)*

The AFM assists the FM according to the requirements of the production.

- *Graphic Artist*

The graphic artist designs all forms of graphic work – meaning text, illustrations, and visual special effects included in a production, in collaboration with the producer, director and production designer.

- *Character Generator Operator*

The CG operator inputs and recalls text, including credits, sports statistics and bottom of frame superimpositions (BOF) - meaning a persons name, and possibly their title, into a computer for use by the vision mixer in a live production.

- *Autocue /Teleprompter Operator*

The autocue operator inputs, and recalls copy (script) for use by on-air personnel via an autocue, which is a computer screen reflected in a mirror, set in front of the camera lens. The operator controls the speed of the copy as it crawls up the screen to allow the reader to produce a well paced, easily understood 'piece to camera'.

- *Statistician (sport)*

During live sporting events, such as cricket, a statistician may perform the role of 'in-putting' and 'recalling' game statistics into the character generator for use by the vision-mixer. These include the score, balls bowled and wickets taken.

- *Stage Hand*

The stage hand assists the floor manager, set dresser, props manager and camera operators on the studio floor as required.

- *Broadcast Engineer*

A broadcast engineer is a chief technician who maintains all the equipment used in the studio, and on the outside broadcast, including remote units, and additional equipment such as satellite dishes. They may also be responsible for the stations television tower (transmitter) used to broadcast the television signal to the home viewer.

- *Outside Broadcast Supervisor*

As the name suggests, the OB supervisor is in charge of all operations crew, and all the equipment used by the OB. It is their responsibility to ensure broadcast quality sound and vision is either transmitted direct to the viewer, or sent to the station without any technical problems.

- *Technical Director (TD)*

The TD or technical producer is in charge of the operations crew on the studio floor and the control room or OB van, and the equipment during the production of a program. It is their responsibility to ensure broadcast quality sound and vision for transmission or recording.

- *Vision Mixer*

A VM is similar to a live editor. They operate a vision-mixing desk, which enables numerous sources including cameras, graphics, videotape outputs and satellite feeds to be cut together in real time. The desk is capable of numerous special digital effects, which can be set-up, stored and retrieved during record or transmission.

- *Camera Control Operator (CCU)/Vision Control Operator*

The CCU operator works with lighting and the cameras to produce and match broadcast quality pictures from multiple cameras. A remote CCU panel over-rides the set-up for each individual camera, which allows the CCU operator to align the brightness, contrast and colour of all the cameras from one point.

- *Camera Operator*

A camera operator in the multi-camera environment is responsible for the set-up of their camera prior to the production, in collaboration with the TD and CCU operator. During productions they operate a studio camera – meaning a camera that can move in any direction including to, ped (pedestal) up/down, crane up/down, track left/right, pan left/right or tilt up/down, and zoom in/out and focus, as part of a multi-camera team under direction or offer shots to the director as required.

- *Lighting Director*

The LD is responsible for lighting, and works in collaboration with key crew to develop set floor plans including, the presenter's position, camera positions and audio and lighting. The LD plots the lighting and any changes required during the production, rigs, points and focuses lights, and may operate the lighting desk. The LD supervises the lighting assistants.

- *Audio Director (AD)*

The AD is responsible for television sound, and works in collaboration with key crew to develop a sound plan. The AD supervises audio assistants including boom operators, and operates the audio panel from a sound proof booth.

- *Technician*

Technicians assist in the set-up and maintenance of all equipment under supervision.

- *Videotape (VT) Supervisor, Operator/EVS Operator*

A VT operator is responsible for the set-up of videotape machines prior to record or replay to broadcast standards. During live productions they record the program, ready tapes for replay, and log the content of each videotape for post-production or highlights etc. They are also responsible for editing on-the-run packages during live programs, such as cricket. The EVS operator's role is the same as that of a VT operator, however the EVS is a computer-based system that records onto a hard drive. An EVS operator may be in charge of four different camera angles depending on the production set-up.

- *Audio Assistant*

An audio assistant assists the audio director by running cables, changing microphones (mic) and batteries during live shows, operating a crane mic, and helping to locate and solve problems.

- *Boom Operator*

A boom operator, or boom swinger, operates the mic that is attached to a long pole called a boom. This allows the operator to pick up sound without getting in the

cameras way. The boom operator must work closely with the camera operators and lighting to avoid being seen in shot, or casting boom shadows on the set.

- *Lighting Assistant*

The lighting assistant assists the lighting director on the studio floor during all stages of production.

In addition to the crew are on-air personnel who can be divided into three categories: actors (dramatic), performers (dancers, singers, jugglers etc.) and presenters (comperes, news readers, hosts).

As seen from the overview of production personnel, the number of crew involved in any single production is significant, therefore the data collected and collated for this research concentrated on just four roles. The roles are vision mixer, director's assistant, camera operator and EVS operator (EVS is a standard acronym used in the industry that has no long form. It is based on the name of the product). These roles, multi-camera television positions often described as technical, were chosen as they gain little attention in Australian universities.

Several texts including Zettl's, *Television Production Handbook,* which is found in a large number of Australian university libraries, divides the crew positions into 'above-the-line' and 'below-the-line', and categorises all crew into nontechnical and technical production personnel (Zettl 2006, 369). One important factor is that the text states that: "Generally, above-the-line personnel include the non-technical personnel" (371). The list of crew roles listed as technical include the videotape operator, vision mixer and camera operators. The term 'technical' has had an impact on the understanding of the intellectual creativity found in television under this classification, in both the industry and education.

Making Live Television

The following section details how the crew, described above, go about making a live television production. Not everyone is involved in all aspects, however it is necessary to understand how they work in collaboration, and the reliance on each

other throughout the process. The phase that is central to this research is 3. Production.

As described above, outside broadcast personnel range from studio hands to executive producers. For those people who have not seen a multi-camera television crew in production, it is difficult to understand the complexity of the operations, and the types of jobs undertaken to put a live program to air. The term used in the television industry for the process of making a television program is called, the production. Television productions begin long before the viewing public sees them. There are five stages involved in production, and each stage may be broken up into various sub stages to allow a greater understanding of the entire process.

The five stages in television production are:

1. Development
2. Preproduction
3. Production
4. Postproduction
5. Transmission or Distribution

The number and variety of personnel employed, or contracted to work on a television program, from a few people to several hundred, varies in the size, type, and cost of the production. An overview of the entire process will locate four crewmembers that will be analysed, and the part they play in making television. The process outlined below covers a variety of genre, and does not necessarily relate directly to a live multi-camera production. However, the procedures involved during stages 1, 2, 4 and 5 are similar.

- ***Development***

Development of program ideas or a concept is the first stage of a production. A program's development may involve pitching ideas to distributors, or funding bodies and investors, along with allocation of funds to write draft scripts, and produce pilot programs for a series.

- ***Preproduction:***

Preproduction can commence years in advance of the program being distributed, or transmitted, particularly if it is a one-off program such as *The Rugby World Cup.* Regular programs, including weekly sporting events, and programs including *The Footy Show* will take less time in preproduction once the format of the program has been established.

Each of the four stages, in making a live television program, is broken down into sub stages that are an overview of the production process, and are not indicative of every production undertaken. The order of each stage is by no means definitive, as each stage may take place in conjunction with several others, and may or may not happen in the order outlined below.

- ***Preproduction: Sub Stage 1.***

I. *Research*

During the research stage the programs *producer/s* will allocate tasks to the *researchers* to provide background information to the program.

II. *Contracts, clearances and permits*

The production department will undertake prescribed work to deal with copyright clearances for items needed for the production, including the music to be used in the story if it has been selected, and the reproduction of any pictures, graphics, or sounds that don't belong to the broadcaster.

Contracts will be negotiated and drawn up for the cast and crew, and location agreements will be organised with local authorities and/or private individuals if the program is being shot on government, council or private property. Permits need to be obtained from third parties who are not directly connected to the production.

III. Script

Depending on the style of sporting program, a writer commissioned by the producers may write a script, or a producer may write it in collaboration with the on-air personnel.

IV. Budget

The cost of the entire program will be itemised by the production department. According to the size of the budget, and the variety and combination of production companies, or networks involved, different people will be contracted to oversee the programs costs. The personnel in this area can include *production accountants, production manager, line producers,* and several *production assistants.*

- **Preproduction: Sub Stage 2.**

I. Production schedules

A preliminary production schedule is established to set out the time frame of how long it will take to produce the program. In short, the schedule is broken down into minutes, hours, days and weeks, and provides the cast and crew with a 'calendar of events' so that they are aware of where they need to be, what they will be doing, what is required for the time they are there, and what equipment is being used. The production schedule covers the first three stages of the production:

1. Preproduction
2. Production
3. Postproduction

For live events, or live-to-air records, that allow for several stages of rehearsal at Stage 3, schedules are important to maintain a time line that adheres to strict time limits. The production office (production manager or director's assistant, depending on the structure of the production), in consultation with the key personnel, and more specifically the studio director, arrange a schedule for each day's events.

II. Pre-production meetings

Meetings are a regular occurrence during the initial stage of making the program. Here heads of departments (HODs) discuss the production requirements. HODs include the *executive producer, director, production designer, lighting director, audio director, set construction* and *technical director*. During the production meetings the atmosphere and physical attributes of the sets are established, how the production is to be covered by the cameras, lights and sound inside the set, or on location is devised, and plans are drawn up for everyone to work from. The production schedules emerge from these meetings.

III. Publicity and Promotion

A separate department often undertakes publicity if the production is being made for a network. Otherwise, the program needs to establish its marketing strategy early on to ensure the success of the production.

The production department books the facilities that are required for the recording, or transmission live-to-air. In the case of a live sporting event this may include links trucks, satellites and other communications systems.

IV. Equipment bookings

The equipment that is not included in the booking fees for the hire of the television studio, broadcast van including special camera mounts, jibs, cranes, steadicams, microphones, and special equipment such as smoke machines, will need to be booked separately.

V. Catering, accommodation and transport

Productions that are lengthy often require catering, accommodation and transport for the cast and crew. Depending on the location of the production other facilities may include, mobile dressing rooms, dining room and toilet facilities.

VI. Location shoots

Aside from the major production, which may take place at the studio or on an OB, smaller units in different locations may also have to be arranged. For example, units set up at strategic points along the route of the *Tour de France.*

VII. Lighting design

During HOD meetings the plans on how the production is to be lit is established. The plans, or design, take into account the requirements of the director and producer/s, and need to fit the program brief. A brief sets the program style, and includes such aspects as period setting and ambience.

VIII. Set design

Sets are designed and drawn up on floor plans, and a scale model constructed in answer to the program brief. Discussions are held in collaboration with the producer/s and director, and other HODs will also have an input onto the design during production meetings. The collaborative process sorts out problems, including sound and camera coverage, as they arise.

IX. Sound design

As with lighting and set design, the sound designer establishes a sound coverage of the program. A design is drawn up to include such elements as microphone selection and placement, and additional sound such as music and special sound effects (SFX).

X. Studio or OB rundown

Prior to the production day a rundown is devised that covers the major components of the production. The rundown sets out in order, each segment in the production, and gives it a number. Each segment will have the source of the vision and sound, and any special effects, properties, (props) or other additions, the duration of each segment, end words from segments or presenters, and the estimated running time of the production.

XI. Call sheets

As production day/s grows nearer and details are finalised, a call sheet will be given out to everyone involved in the production, so they know what time and where they will be required.

- ***Preproduction: Sub Stage 3.***

I. Rehearsals

During rehearsal problems associated with camera and sound coverage, communications, program segments and on-air personnel are observed and remedied.

II. Set and light

Prior to the production day the set is constructed and put up in the studio. Final touches are added at this stage, and the set is dressed. Set dressing refers to the properties (props), or additional bits and pieces added to the basic set such as logos, banners, etc.

The lighting department rig the lights according to the lighting plan. Lights are placed at plotted points in the lighting grid above the set, and the information about the location of the light on the grid in relation to its job, during the production. Each light is allocated to a dimmer in the lighting desk, and the level or brightness of the light can be recorded into the desks memory. The lighting desk operator writes down all the lights and their function, and location in the desk for use during the production. On an OB lights will be used for on-air presentation sets and interviews. Major sporting arenas are fitted with their own lighting systems that reduce the lighting set-up.

III. Scripts

Scripts for productions such as *The Footy Show* are given out to key members of staff. Many studios use computerised scripts, and these are read by the required crew off the computer screens located in the television control room. These scripts are the introduction to stories that may have been shot on location, interviews with people via satellite, or scripted commentary prior to a sporting event.

Production in the multi-camera outside broadcast environment

> *Please note that there are several other stages to rehearsals depending on the program format and genre. As the focus is on the staging of a live outside broadcast only final rehearsal will be included here.*

I. Final rehearsal

The final rehearsal, which is undertaken for live events and other multi-camera productions are generally run by the production crew in the positions they take during the live, or recorded-as-live program. This means the director, DA, technical director, vision mixer and camera control (or vision control) are found operating from the control room, the audio director from the audio booth, the lighting director or panel operator from the lighting desk, and videotape or EVS from their own separate area. Depending on the size of the control room or the OB van all areas may be separate, or some may be integrated for ultimate use of space. Generally, the audio area is soundproofed and separated from other areas for quality control of the programs sound. Camera operators, the floor manager, boom operators, stage hands, and all other assistants who need to be 'on the floor' are found in the studio.

The idea of the last rehearsal is to run the show as if was live. Unfortunately, problems do arise even though the other rehearsals have taken place and technical and design problems eliminated. More often than not, a problem with a microphone or a light that blows out will occur. The director may choose to live with any number of small problems and keep moving to see the overall effect of the program; whether it flows and how well opening and closing credits and graphics, program inserts, cameras, lights and sound can move from one set-up to the next without glitches.

The DA and FM take note of any additional changes on behalf of the director, as the director calls them to be noted. All other crew need to take note of last minute changes that affect their role. The final rehearsal is very important to crewmembers who are changing settings 'on-the-run', such as the vision mixer who needs to make sure all visual transitions and effects are set up correctly. The vision mixer also needs to see the results of transitions, including the speed of a fly-on graphic, softness of a wipes edge, and the colour of other text used on the screen. They also observe camera shots including the framing, and the time it takes for cameras to relocate (repo) to another part of the studio floor to get their next shot. It gives the vision mixer the time to fine-tune the rhythm, pace, and timing of transitions in correlation with camera shots, camera movements, lighting effects and the programs sound.

The final rehearsal is ultimately an observation and application of the finely choreographed dance happening on the studio floor, or at the outside event between the individual cameras', the boom swingers, the performers, set and set pieces, microphones, and audio design and lighting changes.

II. Final technical checks

All the technical checks would have happened at the beginning of the day. Further, technical checks need to be carried out just prior to going to-air or recording. These checks involve alignment of all the equipment to broadcast standards.

All communications systems are checked with one another. The importance of being able to hear and speak to other people involved in the production is paramount to its success. The director needs to be heard at all times by the FM, DA, VS, cameras, lighting and audio. The director may also have an earpiece to communicate with presenters and other talent including, interviewers and location reporters. As production roles have moved and mixed, the producer may be the only person in contact with the on-camera presenter/s.

The DA, as the central communications figure in a live production, needs to check all communications channels are working along with the TD. The DA is in open contact with the cameras and floor manager, the director and vision mixer (although they are also on the same desk), and generally with lighting and audio. The DA has buttoned communication – meaning the talkback or communications system is not an open microphone, but needs to be turned on and off with the network (master control and presentation), and most likely with the ground personnel who may be manning links to other mobile live-cross locations.

A prime example of the need for instant communication is described in an incident on the cricket out of Mumbai. The director was having huge problems with network communications shutting down too early everyday, during a worldwide live cricket broadcast. He described the loss of communications like being in a submarine, although much worse:

You can't see, you can't hear, you can't call them into the break; they don't know when we're coming off it. Every day we used to tell them. "Stop hanging up, you've got to keep it open until we throw to the break. You switch and then you dial. It's not hard… At one stage there I had to jump on my mobile phone…and Raj picks it up and I go, "Raj, mate we're 20 seconds away! (Anonymous, EP/Producer/Director, personal interview, Oct 26, 2008).

The technical director needs to be in contact with all key crew by buttoned talkback as required, and during an OB the network or television station, including presentation, master control, and any other crews out on location. Location positions that are to be used as live segments in the program, or recorded for later use, are connected via satellite, optic cable or microwave. It is the TDs job to make sure all sound and vision is available for insertion into the program, and that communications with the crew manning the remotes are open and functioning correctly. The TD is also responsible for the sound and vision that is being broadcast live from the OB van.

During the pre-record, or live broadcast, all the EVS or videotape machines are set-up. Computer based EVS machines have information inputted prior to the broadcast to allow fast, accurate, and detailed record and replay functions. There is a recording done of the program as it goes live, for back up, and also it may be used for replay at a later date for file footage, or post event enquiries by stewards, referees and broadcast authorities.

Audio goes through final microphone checks and makes sure all microphones are working. Generally, wireless microphones using batteries have new batteries put in prior to going to-air, or an as-live record. The audio operator makes certain all the levels are set correctly and microphones channels on the desk are labelled to correspond with the performers, presenters or hosts who are using them.

It is often the norm to call a break just prior to an on-air, or live-to-air time, as it allows crewmembers to have a meal, go to the toilet, and fix any last minute problems. It gives the cast or performers time to relax and go over lines, have final checks on clothes and costumes, and to touch-up their hair and make-up.

III. Record/Live

Everyone must be in his or her place well before the program is scheduled to go to-air, or be recorded. Checks are made by the director and FM prior to the program to make sure everyone is standing-by. The DA calls countdown times to on-air, or record, and liaises with the station to make sure everything is running to time.

Working with the DA, who gives standby times to the crew and the facilities that are being used, the director orchestrates the production from beginning to end. The director needs to be a clear and explicit communicator, as the time between direction and an individual's action during live television, allows no time for poor communication. The director's role includes directions to all the crew either directly or indirectly, as a direct instruction during the live production, or as a set of guidelines prior to the production for the individual crewmember to act upon. The ability to stay calm, focused, and to think ahead, is paramount to all the crew involved in the production. Crewmembers who make mistakes and remained focussed on the mistake are prone to make more mistakes, setting off a chain of events, which is difficult to break.

A program that is recorded 'as-live' may be 'in the can', as they say in film. However, there is still a lot of work to be done. The first is to check that the recording is clean, by doing a spot check. If the director and TD have done their jobs properly they would have set up a feed of the videotape, or hard drive post-record, or as it was transmitted, so they could monitor the vision as the program progressed. Also the audio operator should have monitored the off-air sound throughout the program. If the program was a live-to-air record, and it isn't scheduled for transmission until after the record day, there may be time for pick-ups if problems have arisen. The pick-ups are then edited and inserted during post-production.

- ***Post-production***

During post-production the program goes through several stages. As we are concentrating on the live aspect of multi-camera television this stage of production will be less involved. Ultimately, post-production involves sound and vision editing that means sections of the pre-recorded program are cut out, tightened, or even

extended to enhance the programs quality. Pre-recorded packages including interviews, file footage, program opening and closing sequences and credits are edited into the live program.

Sweetening, which includes getting rid of unwanted sound through the mixing desk, and enhancing sound quality through added music, sound effects and dialogue, takes place in post-production to give the sound track depth. In digital post-production such things as automatic dialogue replacement, music, voice over, sound effects and foley; meaning work done by a foley artist who recreates sounds such as footsteps and doors closing, can be added. In post-production the number of audio tracks can be extended to the point that each type of sound has it own track, so it can be mixed with all the others giving the sound depth.

- *Transmission*

In this case transmission refers to the time the program is either broadcast or narrowcast, as in the case of mobile phone or Internet distribution. Transmission, or the time the program actually goes to air, can happen either at the time it is happening in real time or at a later date after the program has been post produced.

- *Distribution*

As the face of television changes and new technologies allow us differing modes of accessing television programs, distribution swings between major or minor. In the case of major distribution, a television miniseries or telemovie may have been allocated a large portion of the budget. Deals may have been made with several free-to-air, cable and satellite networks, and the schedule of when and how the program is distributed would be contractual. On the other hand, a documentary made by one person about their trip to Nepal may end up on YouTube. Distribution, and the means of allowing the viewer to access the program has gone from free-to-air broadcasting to any number of viewing platforms including:

Television
Mobile phone

Computer

DVD

BlueRay

Play station

Wii

Although the amount and variety of platforms for distributing product has increased, there is still a need for content. The way in which we educate the next generation of television professionals is still open to debate. The description of the roles found in the television industry in this chapter, and a basic approach to how programs are made, provides the foundation to situating the key roles observed and examined in Chapters 4 and 5.

In conclusion

This chapter has outlined the problems faced by the live television industry. Those problems, which place television outside the margins of liberal pedagogies and more in line with vocational education, are grounded in the perceptions of the academy, and the traditions of the industry. Television, intrinsically seen as mass communication based on technology, has led to the perception that creativity does not exist beyond the product, which is attributed to the ideas of producers, directors and writers. It is evident from the multi-camera production team that it takes more than the producer, director and writer to make a program. However, as a large number of crew utilise technical equipment to perform their roles, the perception that they contribute to the creative output has been over-ridden by what can be observed as creative product, and not by what is actually occurring during the intellectual strategizing of each of the crew. This suggests that as the producers, directors and writers have generated the 'ideas' there is seemingly no other form of creative output. This aligns creativity to the individualistic notion rather than that described earlier in the Roman concept of *epithet genius* as an inner spirit attributed to all.

The following research situates the theories around who holds the creative capital, and through exploration into various theories around ways of learning, illustrates news ways of thinking about the live television process. Although grounded in the

same forms of production as film, it will draw out and align creativity to the live television 'production phase' where it is fundamentally different to film.

**Situating the teaching of television production in the Australian cultural
environment**

Introduction

The previous chapter has sought to provide an understanding of the particular
creative nature of live television, and to explicate the crew, and production processes
involved in making live television. The refining of the link between live television
and intellectual creativity, allows for a broader understanding of the processes,
which better informs and buttresses the arguments presented in this thesis. In
particular it promotes the notion that intellectual creativity, as reasoned strategizing
during multi-camera production, illustrates a form of creativity that cannot be seen,
as it is part of a communal process.

In order to further inform and situate this understanding, and to further promote the
need for its development in university courses, it was necessary to set out the
background to what this thesis argues are false distinctions between theory and
practice, within the university sector. This chapter examines the historical tensions
between these concepts in academia, before seeking to establish its influence on
academic pedagogies in film and television courses in Australia. Therefore to begin,
the chapter outlines the history of the university, and its place in modern society. It
then goes on to examine teaching models at Australian universities, and the impact
of course design and resources on graduate outcomes. An examination of the
Australian university system follows with particular emphasis on the teaching of
television production.

In Australian universities, television production is generally taught as part of broader
degrees that may include film, television, and new media. New media is also, more
recently, referred to as transmedia. The nomenclature "Transmedia" extends the use
of its predecessor new media, to encompass narratives that apply to a range of
applications including: mobile phones, personal data assistants (PDA's) computers,
and the interaction between digital devices and distribution forms. Furthermore, the

label of "screen" is often used to incorporate all media forms. As an example of the use of the term screen, The Queensland University of Technology website states: "Graduates work in the film, television and screen industries in entry level positions on film sets, for production companies, for screen media outlets and as freelance professionals" (QUT 2011).

However, in spite of the sophisticated nature of such offerings, conflict as to the place of vocationalism in Australian universities has had a profound influence on the direction of its television courses. In the case of university television courses, the thesis argues that the polemical dispute that sets up a division between theory and practice masks the underlying analytical and contextual creativity found in live programming. Therefore, in this chapter I examine the structure of contemporary Australian film and television production degrees to determine the extent to which the divisions between theory and practice, from the wider debates, have permeated the structure of university television courses in Australia.

A brief history of the university

The term 'university' is derived from the Latin *universitas* 'corporate body' or 'guild', and was used from the late fourteenth century to describe the complete structure of an institution. In the twelfth, thirteenth and fourteenth centuries, *universitas* was understood to denote a community of students and masters with a central mission who gathered together in scholarly pursuit (Cobban 1990, 22). The definition of a university as described by Pattison, and quoted by Patterson (1997, 178-179) as "a professional school", concerned those who viewed universities as a place of intellectual learning. However, it is evident from preliminary research that students were trained for specialist roles in a wide variety of vocations or professions, and have been since the inception of the modern university.

Academics today concur that the modern university emerged during the twelfth century, and that during this time there was a return to classic higher learning. However, urban growth and commercial progress also influenced their teachings, and the modern university began as: "an offshoot of a need to meet the professional demands of an increasingly urbanised society" (Cobban 1990, 3). In Europe at this

time, there were two universities who stood above the others. The first was The University of Paris, which specialised in theology, having derived its reputation from its superior teaching of logic and speculative theory based in the *liberal arts.* The subjects studied within the arts faculty at the University of Paris "had the directly practical end of preparing for training in law and public life" (Ruegg and de Ridder-Symoens. eds. 1992, 307). The second university, where law and medicine *(scientiae lucrativae)* was dominant, was the University of Bologna. However Ruegg, quoted by de Ridder-Symoens ed. (1992, 25) suggested: "Medieval legal education was not directed towards the training of law teachers but of professional legal practitioners".

The University of Paris became the model for the Northern European universities including Oxford and Cambridge, while Bologna provided the model for the south. From the end of the thirteenth century until the fifteenth century, there was substantial growth in the number of universities throughout Europe. As Cobban posited, the universities were: "far from being esoteric, ivory towers, the medieval universities were expected to give value for money by responding to the vocational needs of society" (1990, 32). In this way, education for professions was clearly evident in the early universities of Central and Northern Italy.

In the late fourteenth century Renaissance Humanism began to emerge. Humanism, or *studia humanitatis* as it was known in Italy, began in Florence, and spread to universities throughout the West. Humanism as a philosophical doctrine brought about, "a strong interest in the humanities for vocational purposes" (Grendler 1989, 135), and influenced a resurgence of Latin and Greek. It caused the revival of the studies of science and philosophy, and classical art and poetry, with the idea of "combining eloquence and moral philosophy for the civic life" (120). This movement had a major impact on the social, cultural, literary and political life of Europe. The return to the humanities, and the vocational outcomes of this movement was evident in Italy. According to Grendler, "applicants with humanistic training had a clear edge in securing employment from the pontificate of Nicholas V (1447-55) onwards" (137).

During the Industrial Revolution of the late 18th to the mid 19th century, an industrialised Europe brought about one of the most significant changes to the

university system. Prior to the Industrial Revolution students completed a liberal arts degree, before commencing a higher degree. Industrial and technological growth, and the need for higher education to be aligned to these industries, had a large impact on the curriculum, particularly in the areas of science and technology. The impact of this change saw the birth of new pedagogical models, with The University of London, which was founded in 1826, recognised as the European model for the 'civic' university. Civic universities divided undergraduate degrees into the Bachelor of Science and Bachelor of Arts degrees. Similar civic institutions, which were closely aligned to the local authorities, were established in major centres to train middle-class students for professional careers. These universities offered a diverse range of vocationally orientated subjects, including textile chemistry and dyeing at Leeds, glass technology in Sheffield and brewing biochemistry in Birmingham.

However as with any change, traditionalists were vocal in their attack of the changes to the educational models, offered by these civic universities. The new direction of the University of London was described by Rudy, as quoted by Patterson, as "a radical infidel College, a humbug joint-stock subscription school for Cockney boys" (1997, 163). Access to university education for all classes of society became a topic of debate, as the liberalist view of university education was threatened by the inclusion of training for the masses. Liberal educationalists saw intellectual learning dying out, and as one academic recommended:

> It is no part of the proper business of a university to be a professional school. Universities are not to fit men for some special mode of gaining a livelihood; their object is not to teach law or divinity, banking or engineering, but to cultivate the mind and form the intelligence (Kearney quoted by Patterson (1997, 178-179).

Needless to say, due to the changes in society, nonconformist academies and civic universities were established. These institutions fostered new directions in learning, and played a vital role in the changes that took place prior to, and during the Industrial Revolution. The impact these new universities had on the Western world cannot be overlooked, nor can the fact that a major part of their curriculum was vocational. Therefore, it is evident that since inception, universities have been teaching students skills that are designed for particular professions. The learning was

provided within a framework of utilitarian and intellectual processes that enabled students to become valuable members of society. However, there appears to be two very distinct opinions in relation to the role of universities.

On the one hand universities are seen as places of 'intellectual learning', while on the other they provide students with the proficiencies to undertake a vocation or profession. While describing the opposition, one theorist suggested:

> There is the rivalry between liberal and technical education with their respective antagonists considering the former a meaningless and decadent social ideal, the latter an illiberal and mindless kind of vocational training (Bowen 1972, xvi).

The debate on educational models as either technical or liberal, as described above, may have had an impact on the structure of degrees teaching television. Therefore, there was a real need to evaluate how we teach individuals to work in the live television environment in today's cultural, social, and economic environment.

In the case of university television courses, it is contended that a synthesis of intellectual and practical attributes are required to provide an education specific to live multi-camera television, and less on techniques designed towards the teaching of film. This is not to suggest the aesthetics of the field of live television are any less creative, it suggests the process and application of creativity is a language apart from film, and often opaque to people outside the field. The history of degrees designed to teach film production over television production has presented the industry with problems. As Tim McDonald, General Manager, Seven Sydney put it:

> We skated on thin ice for a number of years and I actually think that right now; and its good timing that you're doing this thing because we're actually coming to the stage when it's almost unable to be addressed. To fix it; it's a little bit like the green house thing, everyone has just been ignoring it for a number of years and its getting to the stage now that the warning signs are there. Having said that; "Can the industry afford to fix it"? The answer is; that's probably the hardest question (Personal interview, Aug 26, 2008).

In order to evaluate the warning signs raised, the investigations sought to establish the place of Australian universities, and the impact university education has had on

television production courses. In particular, it sought to establish how the various notions as to the relative importance of "theory" and "practice" worked themselves out in the Australian context.

Australian universities

University education in Australia began after the move toward civic institutions in England. The University of Sydney, established in 1850, and The University of Melbourne, founded in 1853 were entirely secular. Both universities were orientated towards middle-class citizens seeking practical solutions to the environmental challenges of a new country. At that time and without ready support from Europe:

> The prevailing ethos of Australian education, from the beginning to the present, is pragmatic and vocational rather than idealistic and knowledge-orientated (Sharpham and Harman eds. 1997, 40).

In the 1960s, the direction of university education changed due to two distinct periods in the Australian university system. The first was the Vietnam War and the civil rights movement of the 60s, which had an effect on the courses and subjects on offer at universities worldwide. At the time students developed a 'social conscience', with universities becoming the birthplace of new ideas. Due to the emerging social conscience, the liberal arts were revitalised, and students challenged the authorities to instigate social and campus reform. By 1974, the Australian government had abolished tuition fees, which effectively made university education accessible to all. With universities open to people from all walks of life, the conventional objectives of the university, and an extension of subject matter, saw universities take on a significant role in social change (Sharpham and Harman eds. 1997, 40-41).

The second significant period was during the Recession of 1980s. During the period, the Australian Government actively promoted higher skill levels, and the benefits of higher education in order to strengthen the economy. With the governments emphasis on 'access and equity' in higher education, the White Paper, *Higher Education: a Policy Statement,* was published in July 1988. Economic pressure, and the need for universities to be entrepreneurial in attracting non-government funds,

pushed them into 'the business of education' with an emphasis on vocationalism. As a result, university enrolments doubled, and the majority of school leavers sought further education to gain access to the new professions:

> As new professions were born, as others like business administration and social work became more formally professional, the university became the chief port of entry for those professions, and in fact a profession *gained* its identity by making the university the point of entry (Harman and Smith as quoted by Kerr 1972, 17).

The prerequisite university degree required for new professions such as tourism, computing, accountancy and management (Sharpham and Harman eds. 1997, 40-41), emerged as a result of new government directives. The growth of new professions, and the decline in on-the-job training helped shape the university system we have today.

In addition to these two periods in the 60s and 80s, the changing face of society, and the impact of global economies, political forces, and technological advances often control the education system, leaving the educators behind. These changing forces have a significant impact on screen degrees that are at the heart of technological change. According to Innovation and Business Skills Australia (IBSA):

> Existing content providers and distributors are creating a new landscape that includes multiple channels, broadband Internet, digital TV, pod casting, narrowcasting and global competition. This rapidly evolving environment presents a challenge for the development of a skilled workforce…Employers in the broadcast industry are now experiencing a shortage of workers with skills in the new digital technologies (IBSA 2006, 3).

In 2008, Andrew Brennan and Jeff Malpas witnessed another change, in the way of government policy. In their article *Researchers Drowning in a Sea of Paper*, they suggest: "Universities have been forced to become more compliant with the demands of government as they are increasingly deprived of support from government" (Brennan and Malpas 2008). The demands, based largely on allocation of funding, saw universities keen to "get on with the real tasks towards which universities ought to be primarily oriented: teaching and research" (2008). In their article, they quote Peter Godfrey-Smith (philosopher), who wrote that: "The teaching and

administrative burdens on Australian academics seem to be wearing them out" (2008). According to Brennan and Malpas, the level of bureaucracy, and the amount and complexity of evaluative systems to acquire funding had encroached on academics' time. The following suggestion by Godfrey-Smith, points to the on-going debate over the pedagogical models of universities in that:

> Universities are not only, or even primarily, vocational training organisations, and their role as centres for research is itself closely tied to their role as centres for advanced teaching quite distinct from the teaching involved in vocational training (Godfrey-Smith as quoted by Brennan and Malpas 2008).

It is understood that research is an important role of any university. More importantly, Godfrey-Smith also points out that vocational training is not a form of education that should take place inside a university (2008). However, even though emerging new professions have led to the initiation of new university courses, some streams of academic and pedagogical debate maintain a distinction between 'vocational training', and 'centres for advanced teaching'.

Annabelle Sheehan, an academic and film and television industry professional, wrote in 1992 that:

> Industry needs analysis is rarely undertaken and is not tied to factors such as student intake or curriculum development. In fact film education was initially considered a generative force for the film industry and for film culture (Sheehan 1992, 41).

According to Annette Blonski, in *Film and Broadcasting Training in Australia 1970-1990* (1992), there were the "almost entirely vocational" courses, and there were courses that were a mixture of "theoretical/critical studies and production training" (1992, 11). Unfortunately, Blonski does not define the institutions that ran the different types of courses. Yet she does go on to say that many of the courses that were grounded in liberal arts, were still in existence in 1992.

In 1974, the Whitlam government abolished student fees and took control of funding for all Colleges of Advanced Education (CAE) and universities. However, by 1980 enrolments in the university system had overtaken the CAEs. In addition, larger

CAEs introduced higher degrees, and more often than not their research records outstripped several universities (Breen 2002). The result was a system under stress, with the outcome being: "Two state governments broke ranks and converted their major CAEs into universities, and others were poised to follow" (Breen 2002). In 1988, The Commonwealth government produced the White Paper, which led to the complete restructure of the tertiary and higher education sectors. With the introduction of a national system to unify education, "the 18 universities and 47 CAEs in 1985 had become 30 universities in 1991 and 35 by 1994" (Breen 2002). Furthermore, Vocational Education and Training (VETS) have moved into high schools. VETS are "programs undertaken by school students as part of the senior secondary certificate that provide credit towards a nationally recognised VET qualification within the Australian Qualifications Framework" (DEEWR 2011). With the introduction of numerous 'screen' courses in Australian universities, the structure of degrees is under constant change. However, the need to evaluate the learning outcomes, aligned to industry, differs from course to course. The work done by Annette Blonski (1992), on film and broadcasting training, and Annabelle Sheehan's (1992) competencies based on "observable measures", points to the beginnings of curriculum research, and the evaluation of courses in film and television in Australia.

Training models and the bifurcation of theory and practice

The tendency to bifurcate theory from practice, in Australian degrees with professional outcomes, might have been influenced through the overseas experience.

A 2002, comparative analysis of higher education courses in radio/television (broadcasting) in Korea, Britain and the United States, is relevant to the methods of education under observation. The study undertaken by Kang, Wolfe and Kang, provides a global perspective on broadcast higher education, and took samples of several courses from three countries. The study categorised courses, using terms including liberal, theoretical, practical and professional. This suggests a breakdown of the skills and attributes of professionals working in broadcasting into preconceived pedagogical models, with greater analysis of the skills and attributes required to work as a consummate professional, overlooked.

Due to this, the application of the skills and attributes required to be a consummate professional are viewed as the end product of the individual's position, as part of a team, rather than the individual's creative response to the team's objectives. For example, according to Kang, Wolfe and Kang, courses described in brochures, or on web sites are categorised as either "theoretical or practical" (2002, 43), with theoretical courses "[focused] on liberal arts topics as theory" (43), and practical courses teaching "students broadcasting skills, such as basic television production, video editing, or broadcast news writing" (43). With this in mind, it is difficult to align intellectual creative practice to areas of education that are termed practical or skills-based, as opposed to theoretical or context driven. Kang, Wolfe and Kang (2002) confirm that with the introduction of new technologies, the type, and number of jobs in the industry have multiplied, and with growth arguments "for stronger ties between broadcast education and the original industries it represents" have ensued (39).

An interesting point that emerged from the study was the recommendation for broadcasting curricula in all three countries to be liberal-professional in structure, so students can gain practical skills as well as enhance their total media literacy. The fact that the courses were broken down into categories that divided theory from practice is also valid to the research undertaken here, in so much as the understanding that a division exists. It was noted that programs in the U.S. "indicate the relative ease with which topics in broadcasting, even practical ones, entered and remain in U.S. universities" (Kang, Wolfe and Kang 2002, 44). The authors have provided additional evidence of a false binary of a theory/practice divide, which highlights the persistent "debate over which curricula" (38), being theoretical or skills based, or a combination of the two, should be used.

Evidence of the status problems between film, video, and television is found in the 'Bredin Report' (France 1984). The Bredin Report noted that the problems were due in part to the fact, that 'Le Cinéma' in France had such high prestige, whereas at that time, video and television had comparatively low status (5). Furthermore, the report suggested that an imbalance in funding across the three industries had helped sustain the situation. Bredin recommended a highly intensive two-year course with an integrated structure of training (5).

The division of higher education into types has had a significant impact on the way in which we identify television, and other disciplines perceived to be purely vocational, in the sense that vocational means technical, practical, or even professional. The fact that liberal education does not take place inside vocational degrees is arguable. During his research, McKee found "that the distinction between theory and practice does not exist and that critical thinking, research and writing skills were all part of the practice" (2005, 101) of making television (97).

Traditionalists discount the creative and intellectual attributes of television professionals, depicting their work as culturally and socially insignificant. McKee's (2005) research on the needs of training in the area of television, suggested an aversion to academics by the industry. This was mainly due to academics discounting the fact that people who work in television are as gifted creatively as their film colleagues, with an inability by academics to see beyond television as a 'mass medium' (97). The acceptance by academia, and the industry alike, to recognise the creativity of television professionals is relevant, and needs to be taken into consideration when assessing the pedagogical models employed by universities. The hypothesis presented seeks to clarify the intellectually creative responses that take place during those 'button-pushing' moments. How television is perceived plays a vital role in a number of factors including its place in the creative industries, in addition to funding for training and for the industry.

In summation

This thesis argues that intellectual and creative knowledge are evident in vocational courses, although they may be described as vocational outcomes. The thesis also supports that in some educational settings in order to obtain, demonstrate, and observe intellectual creativity, the individual must have first-hand experience, and an absolute knowledge of the language of the field they inhabit, or observe. In this way, the inclusion of the particular industry settings that are the field of live television must form part of the educational experience. It is also evident that in areas where process-driven skills are utilised, creativity can occur without being observed. An example of the theories, as presented in this paper; played out between industry and education, can be seen in Annabelle Sheehan's work on competency profiling.

Although Sheehan is discussing film, the language of the field, and the experience of individual's inside the field are just as relevant to live television. In 1992, Sheehan's work on competency profiling found that:

> I it is possible to consciously articulate some of the more dreamlike aspects of film work and to understand what it is that the entrenched professionals only half understand themselves (1992, 44).

The understanding that levels of intellectual creative consciousness relative to actions exist is vital to the understanding that they also exist inside the field of television. This thesis argues that to inform practice, intellectual creativity, that presents as aesthetics through reasoned strategizing, derived from a set of consummate skills and attributes, takes place in what some term as 'vocational training'. In this way, forms of intellectual learning occur during any mode of learning that may be perceived as purely 'practical'. Furthermore, it is the perception by individuals outside the field of television that gives rise to misconceptions of television as non-intellectual. Intellectual creativity in the field of live television, although undertaken in what is perceived as purely practical actions, is based on knowledge and experience informed by habitus, memory and metis as outlined in Chapter 1 and described in-depth in Chapter 3.

This thesis argues that the lack of an absolute understanding of the creative nature of live multi-camera television production, misnamed as purely practical, has caused a misconception in how television and film is produced, and how universities approach the teaching of these fields of production. Therefore, in the context of this research, the definition of theory and practice goes beyond the familiar distinction, and explores the amalgamation and cross over between the two. The demise of the theory/practice divide is essential to the development of a more suitable pedagogical model for the teaching of live television

Research on screen pedagogies led to the conclusion that an emphasis on ways of learning, as part of a large team in real time, did not exist. It was found that the research only delved into models where the skills of individual crewmembers were classified, as discussed above. There was no evidence of how individuals learn to become a member of a team, whilst building up the skills and attributes required in

taking their place in the team. The following section outlines an analysis of contemporary Australian university screen degrees. The analysis sought to substantiate earlier research, where a distinction between theory and practice became apparent, and to present an overview that provides backing for the hypothesis of the thesis.

In addition to the following course analysis, my position as a professional reflective practitioner took place during my work as a lecturer at Charles Sturt University, The Queensland University of Technology, Bond University and The University of Canberra, in addition to the Australian Film, Radio and Television School (1981-83).

Analysis of universities teaching television production: an introduction

In order to substantiate the inclusion of television as part of film, or journalism courses in Australian universities, rather than a stand-alone degree, an analysis of screen courses was undertaken. The analysis supports the proposition that such course structures tend to marginalise 'practical' television units of instruction.

In December 2010, twenty-three courses in television, film, and new or transmedia (narrative that spans media universes) production were being taught at Australia universities. These degrees are described as degrees, which teach students the skills to create product (My Future 2010). Fifteen of the universities claim in their course promotion that they are 'vocational' and other related terms such as, 'practical', 'professional' or 'industry focussed'.

Although the focus of this thesis is predominantly on television, there is a significant crossover between the film, television, and transmedia production industries. These industries share many skills, and therefore the initial analysis includes all the degrees that teach competencies that are relevant to television production. Universities give a variety of names to their degrees, and so this analysis covers titles including film, television, digital video, digital film, digital media, video, media, screen and any combination of these titles. In August 2010, there were twenty-three universities with undergraduate degrees, which teach television production skills, based on the data analysed. They are:

1. Australian National University, Faculty of Arts, School of Humanities, ACT
2. Bond University, Centre for Film, Television and Screen Based Media, QLD
3. Charles Sturt University, Faculty of Arts, Wagga Wagga, NSW
4. Curtin University of Technology, Department of Media and Information, Perth, WA
5. Deakin University, School of Communication and Creative Media, Victoria
6. Edith Cowan University, School of Communications and Multimedia, WA
7. Flinders University, Screen Studies Department, Adelaide, SA
8. Griffith University, Queensland College of the Arts, QLD
9. La Trobe University, School of Communication, Arts and Critical Enquiry, VIC
10. Macquarie University, Department of Media, NSW
11. Monash University, School of English, Communications and Performance Studies, VIC
12. Murdoch University, Media Arts Centre, WA
13. University of Notre Dame, School of Arts and Sciences, Western Australia.
14. Queensland University of Technology, Creative Industries Faculty, FTV QL
15. Royal Melbourne Institute of Technology, School of Creative Media, Melbourne, VIC
16. Swinburne University of Technology, Bachelor of Film and Television, VIC
17. University of Canberra, School of Creative Communication, ACT
18. University of Sydney, School of English, Art History, Film and Media, NSW
19. University of New South Wales, School of Media Film and Theatre, NSW
20. University of Technology Sydney, Faculty of Humanities and Social Sciences, NSW
21. University of Western Sydney, College of Arts, NSW
22. Victorian College of Arts, University of Melbourne, VIC
23. University of Newcastle, Faculty of Science and Information Technology, NSW

The original analysis found a group of six degrees with an emphasis on multi-camera television (Attached at Appendix 4). However, due to the distinctions made in the analysis of the content of units described below, by August 2010 the universities that could be deemed to teach live multi-camera television production as a major or stream are as follows:

- Bond University, QLD
- Charles Sturt University, NSW
- Curtin University, WA

A number of strategies were used to arrive at this point. Firstly, the websites of the universities listed above provided basic information about the existence of television production degrees. Secondly, faculty home pages gave an overview of the features of each degree, and its relationship to other courses within the same faculty. Thirdly, the website of the school or department that offered the degree provided information about expected course outcomes, the composition of the degree, and the units available for study. Finally, more detailed data about which television production skills being taught was gathered from each individual unit outline.

The initial analysis of units is based on the information provided by each university on their website in the period March 2006 to January 2007. One limitation is that this analysis could not constitute a thorough and complete assessment of the units, as many universities teach a number of skills within one unit, and these skills may not be visible in the unit outline. It should also be noted that university degrees often undertake re-structuring, and unit outlines are reworked. Since the first investigations, and the conclusions that are reached in this study, a number of the degrees from the above universities have changed. In August 2012, further investigations into the type of degree on offer by twenty-three universities had been checked again for updates.

The claims made by the universities offering the degrees have required interpretation of the relationship between what is being taught, and course outcomes. To achieve this result, I analysed the claims through two methods. Firstly, units were placed into three different categories. The contemporary view that units could be defined by dealing with either 'theory' or 'practice' was expanded and redefined, and secondly, a distinction was made between the different types of 'film and television' degrees. This information was based on the content of the units derived from the information provided by the university's website.

- *Types of units*

Three categories of units were established during analysis of the undergraduate degrees included in the study. The grouping of the content into three types of units: *craft* units*, art and philosophy* units, and *intellectual industry* units, proved more viable than classification as 'theory' or 'practice'. The reason for the classification into three types, and the definition of these units is detailed below.

A problem exists in academic writing, in that the term 'practical' is used to define the teaching of technical skills, and 'theoretical' is used to define the teaching of the arts, and philosophy. In this context, and in relation to the teaching of television production, the implication is that intellectual work isn't 'practical', and that the television and film industries don't have their own 'theories'. The distinction between theory and practice sets them apart, and suggests an Aristotelian notion of learning that divides how we gain knowledge into parts. It also drives the notion that practitioners; meaning professionals that use tools, are not seen to be as creative as 'theorists'.

As currently described in film and television production degrees, theory is confined to the study and analysis of film and television programs as art forms. At Charles Sturt University (CSU):

> Screen Studies aims to develop a knowledge of the fundamentals of cinematic technique, an understanding of the principles of critical analysis and a facility for the articulation of critical responses and the proper acknowledgment of sources (CSU 2010).

CSU depicts this unit as theoretical with their degree providing "students with the appropriate vocational, practical and theoretical studies" (CSU 2010), required for a job in television. This unit has been re-defined as an Arts and Philosophy unit as outlined in Table 3 page 76.

The analysis of the degrees is placed in such a way, as to provide a greater understanding of where intellectual creativity takes place as part of the learning process. For example, there is no place in the theory/practice binary for a multi-

camera vision mixer who is the television equivalent of an editor, to learn the intellectual skills required in relation to narrative, rhythm, or visual storytelling. The false binary between theory and practice excludes the intellectual skills required to perform what some in the industry and academia, see as technical jobs, describing them as the opposite of 'theory'. Yet in the description of the following unit it includes the reasons why a sound or vision edit takes place, and the interaction it has with all the other components of the program. For example, Bond University's 'Editing 1':

> Provides an understanding of non-linear editing systems, cutting room management, approaching the marked up script, creative principles of editing, time-space relationships, editing for story, continuity and effect, pace, rhythm; editing styles, the editor's relationship with the director, basic transitions and effects, requirements of the specialist sound mix, basic awareness of copyright issues, the future of digital post-production (Bond University 2010).

The components in the unit include the length of a shot, the composition, the transition or cut point, and the way the vision works with the sound etc., in conjunction with the narrative. The unit described above is re-defined as a combination of a Craft unit and an 'Intellectual Industry' unit, similar in nature to Charles Sturts 'Visual Storytelling' (Table 3 page 76). Therefore, universities already do teach intellectual industry skills. Unfortunately, they just do not acknowledge these skills, nor make them explicit. In addition to the intellectual skills required to achieve the unit outcomes, the student also needs to operate the equipment, and understand the technical requirements of the editing software. Having acknowledged the existence of intellectual industry skills, and that they were included in units teaching television production, the need to re classify units became apparent. The three new categories that emerged from the analysis are:

• *Craft units*
• *Arts and Philosophy units*
• *Intellectual industry units*

Craft units, currently and loosely, referred to as practice units that teach the technical or craft skills of production. Craft units that teach students how to operate equipment

may include camera operation, sound recording, editing and lighting. For example, in a unit such as 'Post-production', the craft skills are the processes involved in performing 'the edit', or the audio and sound compilation of the project. The elements covered in this area will include how to download footage onto the computer, the techniques of constructing an edit timeline, and all the requirements of manipulating sound and vision using computer software.

Arts and philosophy units, is a new term for what is currently referred to as 'theory' units. Originating from liberal arts studies within Humanities faculties, they are the study of film as art. Primarily, these units are run as stand alone units, and do not integrate as practice, rather they are the contextual analysis of practice and processes, which support the other two categories of units. Students studying arts and philosophy units learn to analyse and critique film and television. An example of a typical unit, 'Thinking about Film', from the Department of Media and Information at Curtin University of Technology, describes the unit as:

> Exploration of the history, theory, and ideas that enable us to think about film including film language before the classic Hollywood style, Hollywood as an industry and imagery, theories of spectatorship, cinema and politics, cinema and space and the concept of genre (Curtin University 2010).

The third type of unit included here, and the most important one for challenging the traditional theory/practice binary, is the *intellectual industry* unit. Intellectual industry units teach students' industry standards and the procedures that underpin the production process. 'Industrial and Legal Issues in the Arts' (Table 3 on page 76), is another example of this type of unit. They are not the craft skills used to operate equipment but rather the 'how to', and 'why' of the business of film and television production. These units may cover areas including script editing, budgeting, location agreements, and distribution and marketing. 'Producing 2: Project Development' at Bond University, is a typical intellectual industry unit in which:

> Students will study the many factors, which impinge on the production process including: legal aspects, contracts, copyright and financial aspects (Bond University 2010).

The subject matter included in such a unit demonstrates the film and television theories included in the business of television production. The data gathered, and the classification of units into three categories, was fundamental in arriving at a distinction between the types of screen degrees being taught at Australian universities.

- *Types of screen degrees*

Based on the analysis of unit content, including the different ratios of craft, arts and philosophy, and intellectual industry units, it became apparent that four types of screen degrees are currently taught at Australian universities. The four types of degrees, and the basis for splitting contemporary screen degrees, and how they differ are explained below.

- *Traditional degrees*
- *Communication degrees*
- *Television degrees*
- *New Media degrees*

Traditional degrees have evolved from film studies, or arts and humanities courses that analyse, critique and categorise film. *Communication* style degrees have evolved from print journalism courses, and the term here is used quite specifically, and should not to be confused with formally named Communications degrees. *Television* degrees are those that have been specifically set-up to train students for the television production industry. *New Media* degrees are characterised by their focus on new media technologies. New media technologies include the use of new technologies in areas such as computer-generated special effects, animation, and communications technology to stream video.

The classification of contemporary screen degrees into four types helped to analyse their content and structure more accurately. The structure of the degrees, and their classification into the four types (traditional, communication, television and new media), revealed two points. The first, and most significant that emerged from this analysis, is the link between the kind of university and the type of degree that is

taught. Older universities favour traditional degrees. Traditional degrees, including the degree at University of Sydney, emphasise the vocationalism of their courses while maintaining a liberal arts focus. The newer universities on the other hand, have established degrees that contain units, which embrace popular culture with vocational outcomes. The newer universities, many of which have grown from technical colleges, stress an industry focus. Therefore, unit content was analysed further to uncover the genres and specialisations being taught.

- *Unit content: an overview*

The significance of faculties, and the evolution of film studies into film production, as well as journalism, has played a major role in how and where television production is placed in Australian universities. Television is an industry that covers a wide variety of production genres. Genres suggest different kinds of programs, including but not restricted to comedy, light entertainment, drama, documentary, news, current affairs, children's and sport. The term 'genre' is used in broad terms, and does not separate drama into different types such as comedy, adventure, romance etc. Two key points, which arose from the analysis of the units, were:

- Genres were more attuned to single camera production
- Very few production roles for multi-camera production were included

Drama and documentary

The content of units found on university websites is difficult to determine. However, the importance of particular genres, and production roles is evident from the titles included in degrees. For example in relation to genres, a key point found in this analysis is a large proportion of courses are predominantly focussed on two genres - documentary and drama. Furthermore, the dominance of drama over any other genre is evident. Twenty-one of the courses analysed to 2012 taught students drama. In addition, the connection between drama and scriptwriting was apparent, with six courses defined as *television* teaching some form of writing, and with four of the six having compulsory writing units. The unit outlines did not mention the inclusion of writing skills for other genres, for example writing links for presenters.

Although drama was a major part of most degrees analysed, the inclusion of audio as a production role was generally overlooked. Audio is quite comprehensive, and covers several positions covering location and studio sound recording, including sound design, sound mixing and boom operation. Other skills such as crane operation; sound post-production and foley work, are also part of drama production, all of which have different skills. It appears from this analysis that roles included in the sound department are more often than not, taught in conjunction with other skills in units that cover a variety of job roles. Bond University is the only university that has a stand-alone unit covering sound.

The other genre that dominates television production degrees is the documentary. In 2010, all of the degrees selected (Appendix 1) taught some form of single camera production, which is the industry standard for recording documentary or factual stories. Bond University provides students with a specialisation in documentary production while Charles Sturt University's, Television Production degree cover documentary in the broad unit titled: 'Single Camera Television Production'. Curtin University on the other hand, has a number of documentary units including, 'Documentary Workshop'. Drama and documentary are just two of the genres found in television. The areas investigated included the genres or program formats covered in the area of television production, and the types of jobs found in the live multi-camera environment.

Television production

The study of television production, as opposed to other forms of screen production, involve skills specific to this discipline. The multi-camera television studio and outside broadcasting are two areas that set television production apart from film and new media production. It is an area of production where crew and cast work, as a completely synchronous team, in real time. Any one individual cannot undertake this type of production process. There are several jobs found in the multi-camera environment that are not found in film production. These include vision mixer, character generator operator, audio director, floor manager, lighting director, director's assistant and videotape operator or EVS operator.

In addition to the specific job roles mentioned above, there appears to be a number of jobs not included in the course outcomes of television production degrees that cross over between film and television, but require another set of skills. For example, lighting as a major part of television production, both in the studio and on location, was not covered in any detail. It is likely that lighting is covered in a variety of units in television production degrees, however the specialisation is generally attached to camera operation or project-based units. Bond's (Cinematography and Lighting) is the only degree to include a unit with an emphasis on lighting, although the unit covers lighting for film rather than lighting for a multi-camera studio environment. The essential role of lighting in the multi-camera television studio does not appear to have a dedicated unit in any of the degrees analysed.

Television and film production produce programs or films, for an audience. Needless to say, in the industry, television programs are made with an audience in mind. These audiences are categorised through demographics including age, gender and social class. The analysis also investigated intellectual industry units, which teach students how to analyse and recognise their target audience. Content about audience was found in two different types of units. Firstly, through intellectual industry units such as La Trobe's, 'Audience and Communication Researching Media Audiences', which is designed for both film and television production degrees. While audience is covered in Curtin's arts and philosophy unit, 'Film and Television – Living with Television':

> Historical and theoretical perspectives on television, its economic significance and its social and cultural impact, with particular emphasis on the daily living with television that is common in 'televised' societies. Selected topics include political economy of television, global corporations and national cultures, audiences, genres, and domestic life (Curtin 2010).

Audience data shows a dominance of live sport and entertainment television. As the majority of sporting events occur on location, investigations sought to establish a connection between the audience and the sports genre.

Charles Sturt University's Television Production degree is the only television production degree to include outside broadcasting in the unit, 'Studio and Location

Practice' (CSU 2010). CSU run the unit with the only 16:9 HD outside broadcast van capable of producing an outside broadcast production inside an undergraduate degree at an Australian university. Outside broadcasting requires the same skills as those found in the multi-camera television studio. Live productions such as the Olympics, or a sporting final, may employ crews over several outside broadcast vans, with remote cameras on-board helicopters, and satellite feeds from other locations. This area of television requires advanced skills in a number of production roles including multi-camera direction. The role of the director on a live to-air, outside broadcast, employing numerous people operating a vast array of technical equipment, requires skills not found in single camera drama, documentary, or even television studio production. The practical application of units that teach outside broadcasting is difficult to determine from the unit outlines on web sites.

As determined earlier there are three universities that can be included as having a multi-camera television major or stream. On final examination, Charles Sturt University is the only undergraduate course in Australia that is aligned directly to live multi-camera television production. Due to this fact, the three courses at Charles Sturt, Bond and Curtin are defined further and the breakdown of units at Charles Sturt University as described above is outlined in support of the classification process.

Charles Sturt University, Bond University and Curtin University

Charles Sturt University's, BA (Television Production) is promoted as providing "students with the appropriate vocational, practical and theoretical studies to allow them to pursue careers within the television industry" (CSU 2010). It is vocationally orientated and industry focused. It offers internships and industry scholarships to its students. "The course is one of the few in Australia with a focus specifically on television production" (CSU 2010).

Using the methodology described earlier, the course at Charles Sturt University has eight craft units as practice units, which teach the technical, or craft skills of production. Five arts and philosophy units support these units, with an emphasis on contextual analysis of practice and processes, and five intellectual industry units

(Table 3 below), or the industry standards, and the procedures that underpin the production process. As discussed earlier, the capacity to learn intellectual industry practices of 'why', are also found in units that teach the 'how', with 'Visual Storytelling' being a prime example. There is also room in this degree for students to select a minor from the five electives available throughout the course. The Television Production degree at CSU is somewhat similarly structured, with all craft units requiring prerequisite units from previous semesters. In addition, the five elective units are confined to units in the areas of animation and visual effects, multimedia, photography, design for theatre and television, acting for screen, or stage and graphic design (CSU 2010). In 2007, there was the capacity to elect script writing, however it no longer exists as an elective as at August 23, 2010.

Table 3

Charles Sturt University: BA (Television Production) Table of Units

Craft Units	Intellectual Industry Units	Arts and Philosophy Units
Television Technology	Industrial and Legal Issues in the Arts	Screen Studies
Visual Storytelling	Visual Storytelling	Television: Historical and Social Perspectives
Single Camera Television Production	Television Directing and Writing Overview	Australian Screen and Stage
Studio and Location Practice	Studio Research and Seminar	Media: History and Society
Live Studio Collaboration	Television Industry Internship	Literature and Film
Television Post-production	Television Post-production	
Television Project 1	Television Project 1	
Television Production 2	Television Production 2	
	Live Studio Collaboration	

A point that stands out, in relation to the degree at Charles Sturt University, is that it is less flexible than the one at Bond University or Curtin. At Bond there are ten core university-wide units. Students are required to select one each from the four areas of 'Communication', 'Knowledge and Critical Thinking', 'Responsibility' and 'Leadership, and Initiative and Teamwork'. The degree has fourteen foundation units including 'Television 1', and offers three specialist streams (Production, Post-production and Screen Studies). Students elect six units from the specialisations that

include four 'Television' units. The three compulsory units, as described on their website, have been re-classified as a combination of intellectual industry and craft units. The 'Television' units have more craft and intellectual industry units than arts and philosophy units. The 'Screen Studies' stream offers three arts and philosophy units. Bond's degree allows students to select from a broad group of units specifically designed for the film, television, and new media industries (Bond 2011).

In contrast to the degrees at CSU and Bond, the BA (Media and Information) specialising in a Screen Arts major at Curtin is very broad. The first year of the degree is an open BA, and provides students with a vast array of units to choose from. In second year students elect into the Screen Writing, Screen Production or Screen Production Stream to undertake the Screen Arts major. The choice of production subjects is minimal with 'Broadcast Production' only offered at third year to allow "further development of skills and understanding of multi-cam and studio based production in a practical, production-orientated environment" (Curtin, 2011).

As stated earlier, journalism has played a role in the development of television degrees. The three undergraduate degrees that are defined as teaching television production skills, all teach news. In addition to news production other genres covered in the area of television are current affairs, magazine or light entertainment, music videos, television commercials and corporate production. During these units, students take on a variety of television production roles while learning the procedures relevant to the particular program format, or genre.

The vocational nature of the degrees analysed, and the relevance of industry experience can be found in the number of universities that have units allocated to internships. In 2007 and 2012, five of the six universities studied in-depth, offered internships to their students. The internships ranged from professional placements organized by the university, to students finding a position in a host organization. Many courses set aside a full semester for such placements.

Teaching models at Australian universities

There are a number of factors found during the analysis, which suggest how television production is currently being taught at Australian universities. The summation speaks broadly to the twenty-three universities that advertise film, television, and new or transmedia (screen) degrees. Firstly, only one course on offer directs students through a curriculum designed specifically for television production. The degree at Charles Sturt University is described as:

> One of the few in Australia with a focus specifically on television production…the course prides itself on strong industry links, which offer opportunities for internships, scholarships and industry work placements (CSU 2010).

Secondly, there appears to be an absence of specialist training in a number of production job roles. A number of key job roles in television production are not taught in Australian universities. Roles are generally covered during the production of different types of genres and program formats. Although the skills required for roles in film and television are similar, a number of roles including lighting director, floor manager or vision mixer do not appear to be seen as career outcomes in television degrees.

Thirdly, the course analysis supports the idea that theory and practice are seen as separate. It is evident in the language used by universities, such as:

> The Bachelor of Arts (Television Production) provides students with the appropriate vocational, practical and theoretical studies to allow them to pursue careers within the television industry (CSU 2010).

In addition, this study suggests that universities see arts and philosophy units isolated from craft and intellectual industry units. From the information gathered in this study, genres and program formats outside drama and documentary are rarely studied in any depth. In most cases multi-camera is covered in magazine style programs and news.

Finally, the structure of the majority of degree courses in Australia follows the same principles, which are based on documentary and drama production techniques. Differences do exist in the number and content of electives, and the cross over of disciplines servicing the degree. For example, the Faculty of Art and Design service the Bachelor of Media Arts and Production degree at the University of Canberra. Students are offered electives including, 'Networked Media Production' and 'Web Design and Production'. While the Bachelor of Film and Television at Bond, under the Faculty of Humanities and Social Sciences, includes electives on 'Sex, Society and the Movies', 'Cinematography' and 'Lighting 2'. It is understood that units inside 'screen' degrees often assess students through project work. With this in mind, the capacity to teach the skills commensurate with a specialisation can happen in an 'ad hoc' way.

There are a number of facts that became apparent, and have an impact on degrees specialising in production. One of the most significant that is derived directly from funding is the allocation of monies for resources. Understandably, the setup and maintenance costs of a television production degree are sizeable. New technologies, and the ability for universities to provide resources and equipment relevant to the discipline, play a vital part in the structure of degrees. In a number of cases institutions with the resources to teach multi-camera production do so at a minimal level, while others struggle to equip studios with the resources applicable to multi-camera production. The following section outlines the importance of resources to the structure and teaching outcomes of production degrees. The qualitative interviews formed the basis of the findings.

The impact of resources on course outcomes

The Australian Film, Television and Radio School (AFTRS) and The Victorian College of the Arts (VCA), prior to January 1992 known as Swinburne Film School (Blonski 1992, 11), are seen as leading providers of education for the Australian 'screen' industries. Firstly, the impact resources at both schools have on graduate outcomes is observed. And secondly, due to the influence both institutions have on education for the film, television and new media industries, a brief description of the educational objectives of each institution are presented here.

William Fitzwater, producer, director, writer and educator, has had the opportunity to teach and work all over the world including AFTRS. Fitzwater believes that resources in Australian universities are a major issue when it comes to producing effective graduates. Primarily, as he sees it:

> All television facilities are usually very Mickey Mouse. There is one or two places that aren't Mickey Mouse where there have been some enlightened people buying the equipment (Personal interview, Aug 20, 2008).

Fitzwater is not alone in his summation of the problem. Craig Delahoy, Manager, Training Quality and Accreditation at the Australian Broadcasting Corporation described an incident while touring a new television training production facility. Upon seeing an old pedestal being used as a monitor stand, Delahoy thought:

> I'd rather see a camera on that than these tripods with wheels and that. I think that also seems to be the problem, that sometimes the equipment that they may have been trained on is so far removed from the equipment they might end up working on, that we might as well begin from scratch (Personal interview, Aug 27, 2008).

Both Fitzwater and Delahoy are television industry professionals who know the field of live television. Unfortunately, as described above, individuals who do not know the field often misplace the allocation of funding. In my role as a lecturer in the area of live television I have often been frustrated by equipment that is not capable of doing the job. In particular, technicians who do not operate, and do not understand how a desk is used during live events often purchase vision-mixing desks. Because of this misconception, institutions often spend vast amounts on vision-mixing desks that cannot perform in live situations.

On the other hand, there are a number of institutions that have very good multi-camera facilities. Unfortunately, they are not being used for multi-camera television production. For example, Ian Lang, from the VCA stated: "We've got a multi-camera setup here that we just don't use because we found that we're getting better results just working single camera" (Personal interview, Aug 18, 2008). AFTRS believe running a multi-camera studio "is a really expensive exercise" (Anonymous, personal interview, Aug 27, 2008). However, Tim McDonald, General Manager of

Seven in Sydney confirmed that multi-camera is cost effective and when asked if multi-cam *[sic]* was cheaper he replied: "No question; cost? No question" (Personal interview, Aug 26, 2008). Once a multi-camera studio is set up it is cost effective for a number of reasons. For example, expensive post-production is minimised.

Understandably, keeping up with technology is difficult when institutions are reliant on government funding. To put the pace of technology in perspective, since the early 1970's the television industry has gone from black and white to colour, analogue to digital, 4:3 to 16:9, standard definition to high definition, and now 3D with 5.1 surround sound, as the basic soundscape. Even the industry itself is hard pressed to know what is, and isn't, going to happen in the future. Equipment, computer software and constant technological change, all contribute to the high cost of running multi-camera television production courses. The Australian Film, Television and Radio School (AFTRS) moved to a new purpose built complex in May 2008, with state-of-the art equipment and facilities. Inside the complex is a multi-camera television studio that for a number of years spent the majority of time being used as a sound stage, basically because it afforded the students a large soundproofed space.

With this in mind, problems concerning the level of resources including television facilities, and all the equipment required to run a television complex, can still be found in a number of universities today. Therefore, does the level and amount of resources available to a degree in television production have any great impact on the effectiveness of the degree? Why do film and television courses go to the expense of setting up multi-camera studios if they don't use them? I was also interested in what the outcomes of the courses at AFTRS and the VCA actually were in relation to the inclusion of multi-camera. Lang said:

> [The VCA] don't teach multi-camera but we see the sort of work students do here; making short films; as a general introduction to any kind of media production; whether it was web; whether it was for television; whether it was for the big screen (Ian Lang, personal interview, Aug 18, 2008).

According to Sheehan, the Victorian Arts Entertainment Industry Training Body (VAEITB) saw technology "becoming easier to use" and "cheaper and [more]

accessible", causing a "blurring of technical and non-technical tasks" (1992, 36). VAEITB believed the narrowcast sector would make use of these advances producing "greater diversity of delivery techniques" (36), as technology advanced. Delivery techniques are only one part of the equation. With the introduction of more distribution platforms the need for content continues to grow, and with it film production has moved closer to the 'technical' practices of television production. While industry and the education sector endeavour to find the right path, often believing multi-camera production or television is on the wane, the AFTRS has come to the conclusion that making short films doesn't work for everyone:

> We're not sure a short film is all that useful to many people. I think that short film are most useful to the craft areas because a cinematographer or an editor; less so an editor; but a sound designer and so on; their work on a short films not very different than a feature film. But a director and writer's work on a short film is very different from what their work on a feature film or TV drama or whatever; it's really different (Anonymous, Personal interview, Aug 27, 2008).

It appears that the situation at AFTRS arose due to the pressure presented by certain specialisations. After what was described as a 'big fight', and resistance from single camera productions in the past, things have changed. Due to the complexity of shooting from multiple angles, an interviewee noted, it has now been "agreed that cinematographer's skills [need to] include lighting for more than one camera at a time" just as "the directors' have to think about using more than one camera at a time" (Anonymous, personal interview, Aug 27, 2008). This return to 'lighting in the round', a multi-camera technique, highlights a creative aspect, and a certain type of intelligence that has been lost to short form single camera productions.

Based on the information acquired during personal interviews, the majority of work done at both the VCA and AFTRS is single camera drama or documentary. AFTRS, generally use their television studio as a sound stage. Their productions are either shot single camera or they are recorded with multiple cameras and edited later. Nevertheless, the school has adopted another approach to television, or screen being the preferred term, as "trying to get people to think about the form of serving the

idea around" (Anonymous, personal interview, Aug 27, 2008). According to a respondent:

> The objective is to explore all the ways in which you might use television to do that; which is sort of different than we are going to make a magazine program about volunteers so your job is to find some volunteers to interview (Personal interview, Aug 27, 2008).

In this respect, and with a focus on the audience, the narrative drives the production format. Nevertheless, two major players in the educational sector emphasise single camera production, and the development of the narrative. Due to the film production model used at both schools the consummate skills and masteries found inside the live television environment have been lost to a large extent. Fortunately, new inroads have occurred and according Maizels: "They have put the 'T' back in AFTRS" (Personal communication, Aug 17, 2012).

It is understood that graduates from the Australian Film Television and Radio School and the Victorian College of the Arts often obtain work in television on graduation. It is also apparent that television is inclusive of film, with documentaries and drama, being just two examples shot on single camera using the film technique. The major difference is the language of live television that sets it apart from film. Unfortunately, graduates from all degree courses in Australia often approach the television industry to obtain work with high expectations, and little experience of the field. The following briefly outlines the problems of aligning graduates with industry, and defines an observed division between graduate outcomes and the industry. It is apparent that there is a real need for graduate outcomes, to include an understanding of the dispositions or character traits of a consummate professional, that go beyond the act of doing or creating. These attributes include passion, self-discipline and time management skills.

Graduate outcomes

One of the issues that arose between training providers (and here I am referring to all institutions that have courses in film and television), and the industry is the type of

graduate delivered to the industry. When questioned about university graduates, Craig Delahoy, Manager, Training Quality and Accreditation ABC said:

> The university people we get are either through the news cadetship or through management; those sorts of things. We don't take on many new staff in the production areas anyway. We generally look first at industry experience and then at any sort of qualifications they might have, and generally a university or TAFE course in production skills would be seen as a negative rather than a positive (Personal interview, Aug 27, 2008).

I enquired further as to why a university, or TAFE course in production was seen as a negative, and his response was:

> There is a lot of unlearning to do, because they come out with those expectations and: "Why do you only pay me $35,000 to be a cable dragger. I've done a Cert 4 in screen. I should be a camera operator". "Well no you shouldn't". And also as I've said before the sort of stuff they've been taught at those institutions; they're not being taught necessarily on industry ready equipment and generally not being taught industry standard practice (Personal interview, Aug 27, 2008).

The attitude of degree graduates, with high expectations of their own worth, was found on more than one occasion. In 2007, during discussions with Foxtel, Mike Lilley Director of Broadcast Operations, maintained that the company found it better practice to employ people from the nearby TAFE. Foxtel preferred to take individuals while they were relatively young and train them to fit into Foxtel's mode of operation. Lilley found university graduates loathed hard work, and expected to be given a higher level of job than they were equipped for. It can be seen that this type of sentiment is a recurring factor with the networks.

In 2004, Bell found that in most cases when students enrolled for courses in film and television production, they expect to become directors. Not only did they want to be directors:

> Career aspirations indicated a continuing attachment to an *auteur*-ist conception of film production. Few had any real knowledge of the industry or of how it was changing in a direction quite antithetical to the creative aspirations of the auteur (Bell 2004, 744).

This suggests that the expectations of students may not be in line with course outcomes. In addition, degrees may not include units that give students industry relevant knowledge, nor be reasonable in the proclamation that graduates will emerge as industry ready directors and producers. The skills and attributes required for work as a truly consummate professional are learned over time. However, the demonstrated existence of these skills and attributes can be included in the outcomes. This would give graduates the knowledge of their inclusion as part of the set of skills and attributes that need to be gained in order to become a consummate master. For example, attributes including self-discipline, flexibility, or time management are essential dispositions of a professional in both film and television. However, in order to learn these skills and attributes, and have a demonstrated knowledge of them, the student needs experience in the field.

In relation to the field of television, The Australian Film, Television and Radio School, as a leading school fared no better in the uptake of graduates for the television industry. McDonald, General Manager of Seven, when describing a visit to the AFTRS campus in Moore Park said:

> I walked through and was impressed with the campus but thought to myself. "Oh no here we go again". At Macquarie Uni I don't think I ever employed, ever, a person from AFTRS. You know, that's a tragedy (Personal interview, Aug 26, 2008).

As McDonald saw it, the television studios set up between a multi-camera control room were being used for "painting sets on the floor for something arty" (Personal interview, Aug 26, 2008). Meaning the studio was not being used for multi-camera production, and the costly space was being used to paint flats for a production that was not 'television'. With respect, the greatest annoyance was what he saw as the misuse of the space, and the lack of the skills he required from the schools graduates.

With this in mind, seemingly there are two problems that will not go away. Firstly, why are the Australian Film, Television and Radio School incapable of providing employable graduates to the television industry across a broad spectrum of specialisations and genres? And secondly, if the insistence that film is a far greater

creative medium than television persists how are we going to convince students to be more open about the possibilities inside television?

In 2003, McKee interviewed a cross section of industry practitioners to establish a "sense of what would be practical, vocational skills for students who wanted to enter the television industry" (2005, 98). The skills set established were technical skills, interpersonal skills, business skills, research and writing, critical and creative thinking, networking, and knowledge of the area. From the six sets of skills listed, five of them can be classed as skills that employ a person's intelligence, in what McKee termed 'industry theories' (98). McKee discovered that the practice of television production did not separate industry theories from the practical application of those theories (97), with producers, researchers and commissioning editors seeing the skills as the procedures and processes of production. Needless to say, a thorough understanding of the television industry is imperative to addressing the problems faced by the industry. The significance of particular roles found inside live television, and the importance placed on those roles needs to be addressed, so students who undertake screen degrees have real expectations of the outcomes they may achieve. If universities promise to role out creative producers and directors in three years, then students have every right to expect the job on graduation. The perception of who is, and who is not creative within the industry, has had a substantial impact on where the industry is today. Unfortunately, it is not just academics that get it wrong.

As an example, the Manager, Training Quality and Accreditation at the ABC describes the role of director's assistants (DA), and or producer's assistant's (PA) as they were called in the ABC, as "pretty much an entry level area". He explained that the availability of personnel is relatively easy as they, "tend to be able to get [their] own DAs and PAs from elsewhere in our own business" (Delahoy, personal interview, Aug 27, 2008). While on the other hand, an industry respondent working as a live sports director has a completely different idea about the role when he said:

> I've worked with some awesome DA's, they're just your lifeblood;
> they really are. I think a good DA might not think they're part of the
> production unit but they're actually, their conduit back to 'live'. If
> you haven't got a good DA, you're screwed. Without a good DA

you're literally screwed, it just falls over (Anonymous, personal interview, Oct 27, 2008).

On reflection, my position as a director's assistant was not easy. It was one of the most demanding roles I have worked in during live programming. The ability to multi-task is fundamental to the success of a good DA. During a live production the DA is in control of one of the most important elements of live television: time.

Delahoy, in his capacity as an industry trainer highlights the significance of why it is necessary to understand the language of the field. Although Delahoy understands the language of live television in a broad sense, unless he has inhabited the space of the live director's assistant, he is merely looking inside the director's assistant's field from outside. He does not have a commensurate knowledge of the skills and masteries employed by the DA, and due to this fact he is unaware of the complexities, and the intellectual creativity that takes place during a live television broadcast for the director's assistant.

The role of the university in delivering graduate outcomes, as advertised on their website, and in their course outline needs to be a very broad assessment of contemporary screen roles. As seen earlier in this chapter, during the analysis of contemporary degrees, there are universities that describe roles in detail. Perhaps it is time to reassess those outcomes. As technology changes so too do the roles in the screen industry change. In this way, graduate outcomes need to be aligned more specifically to the needs of industry. One way this can be achieved is for institutions to work more closely with the television industry and to realise that the field of live television has a place in the cultural environment, and the university system.

In conclusion

The analysis of the twenty-three screen degrees and the re-classification of those degrees into Traditional, Communication, Television or New Media degrees highlight the very small number of contemporary Australian degrees that teach multi-camera television production in any depth. The units re-defined as craft, intellectual industry, and arts and philosophy units, and the content of those units, provided

further evidence of an emphasis on single camera production. The outcomes of units analysed signify an oversight in relation to the inclusion of a number of live television production roles. In addition, roles that are often regarded as below-the-line crew positions, including audio and studio lighting are seldom included as stand alone units unlike cinematography or editing.

The teaching models observed found an emphasis on drama and documentary, both produced in the single camera format. Although a number of courses were re-classified using the descriptions outlined above, as Communications and New Media degrees, twenty of the degrees analysed teach drama. Television genres, such as sport, which include all the skills and attributes of single camera and multi-camera production, are rare other than across journalism degrees. In this way, it could be argued that intellectual creativity seemingly only exists in the role of the host, reporter or commentator, rather than all the crew roles used to produce sport.

Specific terms on university websites used to define graduate outcomes aligned to directing, producing, writing and cinematography, seemingly suggests an understanding by universities that these roles support the liberalist view of university education. These roles suggest a group of creative individuals, unlike the roles of EVS operator or vision mixers who are more often than not classed as technical roles, due in part to the use of the equipment used to perform the role. That fact television professionals work more with technical equipment cannot be seen as a reason to classify the industry as purely vocational, in the sense that the roles are not seen to be underpinned with any creative intellect. New technologies which include technical equipment is common to all screen production, particularly in light of the move toward non-linear editing, computer–generated imagery (CGI), automatic dialogue replacement (ADR) and other digital special effects used in film. The merging of film and television production, through new technologies, cannot be disregarded nor can the perception that the use of technology depletes a person's creativity.

The information presented in this chapter along with the data in Appendix 1, provides strong evidence of the production value associated with live sporting events. Televised sporting events accounted for over 50% of the top 20 rated programs in the

five years from 2005 to 2009. These events including rugby, soccer, Australian rules, cricket, car racing and many other sporting fixtures provide freelance crews with steady work throughout the season of the event. As an example, the live cricket match observed at the Gabba in Brisbane had a crew in excess of 50 people. Large events that use more cameras, helicopters, motorbikes and pursuit cars, along with other strategies to produce maximum quality coverage, bring in hundreds of crew for the live broadcast. For example, The Rugby World Cup that was broadcast in September 2011 in New Zealand needed 150 camera operators alone, the majority of which were sourced from Australia. Due to the economic and social importance of sport, as is the case in Australia, the New Zealand government changed the school holidays for the entire year to allow New Zealander's the chance to attend.

Sport is just one genre produced using multi-camera production, as all live events utilise the format to make programs in real time. Sport was chosen as a focal point to emphasise the social, economic and production value of the genre in Australia. Redefining pedagogies to assist live sport is a positive step forward, as the benefits of a sound educational model that fits with the industry will fill staff shortages, and bring added value to society and the economy. In addition, sport is a leader in promoting the use of new technologies including 3DHD and user interaction.

The Australian Government's desire to introduce digital television has seen dates for changeover come and go. The high cost to small production companies and regional stations, in addition to a smaller than expected uptake by the general public to purchase HD receivers, has set the date back to 2013. New technologies, and the traditional areas of television are merging to create new industries, and with this development our cultural policies are challenged. The (international) trade in culture, and in particular the content industries has an economic as well as social impact on world players. These industries as cited by the Australia Council including:

> Films, television programs, video, music publishing, computer games and software generate more export revenue for the US than any other industry (Motion Picture Association America 2001, 22).

The move toward a digital economy and the introduction of new departments has upgraded and introduced new regulations and policies governing the television

industry. The number of departments involved in film and television policy, funding and training in 2011 is quite weighty. They include but are not restricted to:

1. The Department of Education, Employment and Workplace Relations
2. Screen Australia
3. Austrade (the export arm of the Department of Foreign Affairs and Trade)
4. Department of Broadband Communications and the Digital Economy
5. Australian Communications and Media Authority
6. Australian Children's Television Foundation
7. Community Broadcasting Foundation
8. Department of the Environment, Water, Heritage and the Arts
9. Online and Communications Council
10. FreeTV
11. Office of Film and Literature Classification
12. Film Finance Corporation
13. Film Victoria
14. Pacific Film and Television Fund
15. ACT Film and Television Commission
16. NSW Film and Television Office
17. NT Film Office
18. Screen Tasmania
19. ScreenWest
20. South Australian Film Corporation
21. The Australian Broadcasting Corporation
22. The Special Broadcasting Service

As seen above, there are numerous players in the industry who either directly, or indirectly have a role in regulation and policy development. Large Government departments have always played a central role in policy, development, funding, and education and training for the film and television industries. The Film Finance Corporation and the state funding bodies helped construct the film and television industries (Blonski 1992, 6). The ability for funding bodies to invest in film and television projects supports government policy, and social, cultural and economic trends.

Screen Australia, that replaced the AFC in July 2008, is the Commonwealth Government screen agency providing support to Australian film, television, documentary and digital media makers. Its function is to support "and promote the development of a highly creative, innovative and commercially sustainable Australian screen production industry" (Screen Australia, 2011). More importantly, Screen Australia plays a role in policy development in the broadcasting sector, by providing reports and submissions to proposed Government regulations and policy change. In this respect, and in its contribution toward funding, Screen Australia is a vital part of the industry. However, just as the Department of Employment Education and Training had an impact on the autonomy of universities, Screen Australia holds sway on the allocation of funding, provided by Government, for the majority of Australian productions. Although Screen Australia appears to stand alone, it is an Australian Government agency operating as part of the Commonwealth Film Program.

Several factors may contribute to the concept that in Australia, as in other countries, television involves professionals requiring what are considered technical skills, with intellectual creativity overlooked. This is due to the live nature of television, with people working outside the field misinterpreting the creative processes involved in the intellectual strategies used to produce a creative product. In order to establish that intellectual creativity is found in all roles inside live television firstly, theories of how knowledge is obtained were explored. Secondly, an analysis of those theories was then applied to observations in the field, and qualitative interviews with industry to establish that intellectual knowledge and creativity are part of the daily actions of television professionals. Finally, four roles including the camera operator, EVS operator, director's assistant and vision mixer, overlooked as being less than creative or mere technical roles, were examined in Chapters 4 and 5, and the theories brought together with the hypothesis in the final chapter.

Chapter 3

Situating the research and establishing the theories

Introduction

The previous chapter has set up the origins of the university, and its place in educating future graduates in the television industry. The models examined highlight the lack of teaching practices suited to developing the skills of the live television professional. The analysis shows how graduate outcomes, bifurcation of theory from practice, and poor or underutilised resources have led to the problems faced by the television industry today. With very little research done on graduate outcomes, and course design aimed specifically at the television industry, courses at Australian universities have tended to align their courses to a few genres, and in particular to single camera production. As universities struggle to provide 'practical' degrees that fit with liberalist education models, television as 'mass communication' is more often than not consigned to vocational courses. In so doing, the intellectual creativity of the live television professional is overlooked and misunderstood.

This chapter examines theories of knowledge, with particular reference to the television field. It seeks to establish the fact that activities within selected television roles are both intellectual and creative, termed here as "intellectual creativity". Intellectual creativity presents as aesthetics through reasoned strategizing, derived from a set of consummate skills and attributes. Once the dispositions of individuals who work, or aspire to work in live television were established, theories of learning were sought to ascertain where these dispositions came from, and how they might be developed through educational models.

The data collated and analysed from the qualitative interviews, professional reflective practice, and participant and direct observation saw a set of skills and attributes begin to form:

• Focus
• Organised

• Knowing the systems
• Passion
• Attention to detail
• Speed
• Accuracy
• Experience
• Teamwork

During the qualitative interviews a particular 'type' of person that works well within the television industry emerged. One of those attributes was the ability to remain focussed in live situations. According to McDonald, General Manager Seven: "When we get a big event like say the V8 Supercars" (Personal interview, Aug 26, 2008) they bring in a freelance director who "…gets out [and] directs 20/30 cameras; lots of replays, very sharp, very quick hard cut coverage" (Personal interview, Aug 26, 2008). In this respect the director had been doing large sporting events for many years. His ability to remain focussed came from being organised, and knowing the systems of live television.

Systems knowledge, organisation and focus were among a number of characteristics that emerged from the data. McDonald who has a long career in live television summed up the important characteristics of live television professionals saying: "…attention to detail, speed, accuracy... of mind under pressure is probably another one and…understanding really how to work as part of a team" (Personal interview, Aug 26, 2008). In my capacity as a professional reflective practitioner, and the data obtained from the interviews, the traits described by McDonald and others began to emerge as a significant part of the success of the consummate live television professional. Therefore, in order to explore where these traits had come from, and in which environment they had been obtained, theories of learning were investigated. A number of theories were explored, and finally four fundamental characteristics that seemingly encapsulated the knowledge required to work in the field of live television began to emerge. These fundamental theories were how we know, based on our memories (Ricoeur 2004), tacit knowing as the theory of knowing through actions (Polanyi 1958/1966), learning through immersion in a particular environment, or

habitus (Bourdieu 1977/1992/1998), and the intellectual cunning or innovation during real time strategies, defined as metis (Letiche and Statler 2005). In order to begin, a definition of knowledge was sought as a starting point.

Establishing the theories in support of the hypothesis

In order to establish how one learns and gain knowledge, an examination of pertinent theories was undertaken. The theories were analysed and broken down to arrive at the following list that supports the hypothesis outlined in Chapter 1. They are:

• Knowledge
• Episteme, techne and phronesis
• Knowing
• Tacit Knowing
• Collaboration and immersive phronesis
• Habitus
• Habitus and language
• Memory
• Metis

In order to begin, a definition of knowledge was sought in more contemporary works.

- *Knowledge*

Fuller (2008), believes that for many the markers of knowledge were confined within tight parameters when he stated that:

> It tends to be grounded in its explicit forms: what can be recorded in words, numbers, and figures and thus is explicitly accessible for humans. Based on this understanding, knowledge tends to be treated as an individualistic, cognitive phenomenon formed by the ability to capture insights (Fuller quoted by Greenwood and Levin, in Denzin and Lincoln 2008, 65).

Greenwood and Levin find this definition problematic, particularly in the "social sciences and humanities" (Denzin and Lincoln eds. 2008, 65). The exploration of the relationship between practice, language, and knowledge production in the field of live television, requires the consideration of other forms of knowledge, display and measurement. Therefore, the problematic definition identified by Greenwood and Levin in Denzin and Lincoln (2008), and the application of knowledge within the field of live television put forward here, required further research.

- ***Episteme, techne and phronesis***

Prior to investigations about contemporary theories of *ways in which we learn,* investigations necessitated a brief return to the work of Aristotle. According to Aristotle knowledge is:

> Matter which may exist otherwise than it actually does in any given case is of two kinds, that which is the object of Making, and that which is the object of Doing; now Making and Doing are two different things and so that state of mind, conjoined with Reason, which is apt to Do, is distinct from that also conjoined with Reason, which is apt to Make: and for this reason they are not included one by the other, that is, Doing is not Making, nor Making Doing (Aristotle in MobileReferences, Nicomachean Ethics IV, 106).

Flyvberg as cited by Greenwood and Levin (Denzin and Lincoln 2003), explains best Aristotle's definition of knowledge as, *episteme* (theoretical knowledge), *techne* "a form of knowledge that is inherently action orientated and inherently productive" (67), and *phronesis* which is the creation, implementation and evaluation of new ways of doing things to overcome problems, as a collaborative process by "legitimate stakeholders" (68). According to Aristotle all three forms of knowledge are valuable without any being of more worth than the others. Aristotle's *episteme,* and the meaning he attributes to it as a state of mind; conjoined with reason, is closely related to what is considered to be theory. Aristotle explains *techne* as art, such as architecture, where the design and building as art "is identical to a state of capacity to make, involving a true course of reasoning" (Nicomachean Ethics VI, 108). Aristotle views *phronesis* more as practical wisdom, an intelligence that guides

our passions that "when well exercised, have *[sic]* wisdom…[guiding] our thinking, our values, our survival" (Goleman 1996, xiv).

Following Aristotle's thinking described here, collaborative knowledge driven by phronesis as innovation, informed by episteme, combines all parties interested in the outcome. Aristotle's taxonomy of forms of knowing (or intelligence), suggest that episteme is closely related to explicit and theoretical knowledge, although it is important to point out that Aristotle did not see episteme as the only form of knowledge, as outlined briefly above. Rather episteme was of equal value to techne and phronesis. Aristotle's three-part knowledge equation is the basis of a more cohesive definition of knowledge. However, it is not enough to draw out how learning becomes knowledge, and how innovation is extricated and explored, particularly as creative intelligence.

Tigner and Tigner's (2002), *Triarchic Theories of Intelligence,* explores Aristotle and the work of Sternberg (1984). It is here that Sternberg's triarchic of analytical, practical and creative intelligences assists in determining the concept of creative intelligence. Tigner and Tigner suggest creative intelligence is "important both when we encounter novel situations and when we deal with recurring circumstances" (2002, 173). This fits closely with the hypothesis that intellectual creativity would exist in an environment such as live television. As discussed earlier, 'knowing the systems' is important when working in live television. Tigner and Tigner also point out that:

> Recurring situations…benefit from automatization that frees up attention for use elsewhere. Creative intelligence is thus closely linked to the experience of the individual (Tigner and Tigner 2002, 174).

A thorough knowledge of the systems and processes involved in making live television frees up the mind and allows complex, and innovative strategic moves within the team. Furthermore, Sternberg believes that individuals have the capacity to learn through observation (Tigner and Tigner 2002, 174). The concept of learning through observation, such as that experienced at the New Zealand Broadcasting School, during the immersive model, sought further attention. The outcomes of

immersive learning are explored further in the theories of habitus and metis outlined below. However, returning to the more recent work of Greenwood and Levin, various knowledge categories that proved useful in determining how live television professionals might learn were explored.

- *Knowing*

The first knowledge is '*knowing',* which denotes a theoretical knowledge based on such concepts as analysis, logic, speculation and experimentation, which are generally applied to intellectual pursuits within academia. Theoretical knowledge as a base on which concept is applied is problematic, and suggests a bifurcation of knowledge in two parts, intellectual and applied. Knowledge that divides knowing how to do an action, from the actual implementation of the action, does not fit with the knowledge required to perform in live television (Greenwood and Levin in Denzin and Lincoln 2008, 66).

- *Tacit knowing*

The second form of knowledge is '*tacit knowing'* which means "much of our knowing is tacit; it expresses itself-in our actions" (Greenwood and Levin in Denzin and Lincoln 2008, 66). This form of knowing is more appropriate to the collaborative actions of a live television crew. Michael Polanyi, in *Personal Knowledge* (1958) is generally recognised as having termed the phrase tacit knowing, defining it as: "We can know more than we can tell" (Polanyi 1966, 4). Polanyi described the actions more as exploratory or creative acts, and believed the informed guesses, hunches and imaginings were motivated by passions (4). That actions as creative acts are motivated by passions, and that Greenwood and Levin describe tacit knowing as "hidden understandings that guide our actions without our ability to explicitly communicate what the knowledge is" (2008, 66), would suggest this form of knowledge sits at the beginning, of the set of consummate skills and attributes of the live television professional. As discussed earlier, passion, knowledge of systems, and teamwork where communication in live television can take other forms, are entrenched in the actions of live productions.

Furthermore, such an analysis of tacit knowledge would seem to apply to action orientated activities such as sport, music and live television. In this way the Gestalt thesis of tacit knowledge, as cited by Zhenhua (2009), states that while we undertake specific activities that are seen as practical, for example playing a game of soccer (or operating a studio camera), we "…rely on a certain unproblematic background" (12), which enables the activity to remain fluent. Meaning, that if "…a person focuses on the background and tries to articulate it by linguistic means, the person will obstruct the performance of the activity" (12). In this way, the actions by the crew, in response to the team, drive the production of live television.

- *Collaboration and immersive phronesis*

The more recent, *Phronesis and Creativity: Knowledge Work in Video Game Development* (Zackariasson, Styhre and Wilson 2006), extends the notion of tacit knowing further to suggest that the collaborative aspects of phronesis are developed through immersion in the specific field of activity. The work of Zackariasson, Styhre and Wilson examines the field of video game production, and it is argued that similar understandings apply to the field of live television production. Their work describes phronesis as, "the detailed and practical understanding of a particular field" (2006, 419). The authors suggest that phronesis takes place by immersion in the environment that is the 'particular field'. However, the adaptation of such understandings to the television field requires the incorporation of the specific properties of time-bound, action-orientated activities that exist within live television. On further reading, it was found that the authors are referring to game development through game play. In this way the developers play the game, and reflect on problems encountered during what could be termed a 'test run'. The developers then come up with strategies to overcome the problems. Therefore, it is noted that the video game and the work of Zackariasson, Styhre and Wilson (2006), is similar to live television in that players are strategizing (often in network gaming with large teams) in real time, to achieve a particular outcome. The immersive nature of their research also supports the immersive pedagogical model employed at the New Zealand Broadcasting School.

According to Greenwood and Levin (Denzin and Lincoln 2008, 67), Aristotle's techne is a form of knowledge that is "inherently action orientated and inherently productive". Taking to understand that 'inherent' refers to innate or natural, we are led to suppose that techne involves knowing how to act, based on prior understandings that may be unconscious or perhaps subconscious. Such understandings help us to comprehend that tacit knowledge allows television professionals to undertake actions, which cannot be articulated verbally, during what will be termed here as *choreographed moves*. According to Grimen, as found in Zhenhua (2009), it doesn't mean that language is unnecessary in these cases, but that "language is not sufficient for obtaining and transferring such knowledge" (13). However, Berger and Luckmann, in Denzin and Lincoln eds., suggest that within the notion of phronesis, such choreographed moves require the additional knowledge of a collective knowing (2008, 66). This theory helps substantiate the actions of a large team in the field of live television. Collective knowing, or the contemporary word 'teamwork' conjures up the necessary understanding of all the players sharing their knowledge, and working alongside each other to achieve a desired outcome. William Fitzwater can explain this form of knowing further, in his capacity as a director of live television. Fitzwater described the most significant factor to a successful production as: "First of all…the whole crew is a team that is working as one. Not a series of individuals going off on their own tack" (Personal interview, Aug 20, 2008).

In summation

Based on the data from qualitative interviews, and through professional reflective practice, and supported by the work of Zackariasson, Styhre and Wilson (2006) the conventional definition of knowledge learned through words, numbers and reasoning in an individualistic manner, suggests a disparity in the importance of embodied and collaborative learning. This is also reflected in the Roman concept of creativity as a guardian spirit, "embodied in the paterfamilias" (Negus and Pickering, 2004, 138) within particular groups and localities.

It was found that collaborative learning as part of a team comes from learning the systems during the live production process. Tim McDonald, General Manager of

Seven, began his television career in the on-air room and then moved into an area called live videotape. During that phase of his career he described how he gained the experience and knowledge to work in live television:

> I was on air for two years and then they made me what they call a Tech B…I went from Tech B to Tech A and Senior Tec B and Senior Tech A. I just worked my way through. And each time you go up a grade you get exposure to a different level of show. So as a Tech B you are an assistant to an editor. You do simple shows, *Simon Townsends Wonderworld* and all those sort of things (Personal interview, Aug 26, 2008).

Exposure to live programs, beginning with the easiest and getting progressively harder, enabled McDonald to learn how to work in live television as part of a large team. Whilst working as part of the live television team he gained individual experience in each role, and learned the systems and processes of production. Once he had reached the stage of consummate mastery of each role his ability to be innovative was apparent.

In this way, Dallimore who has worked in live television for many years described his position as an EVS operator on the cricket. According to Dallimore the EVS box, as the piece of equipment that records, and allows instant and slow motion replays of live productions, is a very complicated piece of equipment, which he has learned, based on his operational knowledge of earlier systems. As he said: "I think that the 2 inch [videotape] background, for me has been one of the most beneficial things…. and working in the on-air department" (Personal interview, Nov 26, 2008). Whist working with the EVS box he explained the complexities of the new technology, and how he can achieve real time aesthetics, or innovative television:

> You actually do a replay from one and while that replay is ready or you're rolling that one out you can get another one, another angle from a different camera that you've got in your box to give a reaction or second angle (Personal interview, Nov 26, 2008).

Having learned the system, Dallimore was able to perform complex tasks that enabled him to produce creative television. However, although he is a consummate master of the EVS box, he still relies on the team. In this way the four EVS operators who were working on the cricket, work as a team within a team, logging each clip as

they are selected and recorded. The logging and coding is part of the system, which organises and identifies entertaining television segments, such as a run-out for instant, or for later use. Each clip is given a number to represent a given situation on the field. For example, a run-out may be number 88. The organisation of the clips is a team effort. Describing the need for collaborative support Dallimore said:

> If someone asks me where is the clip from that thing and I might be on one of the other boxes and as you know they can grab that clip from my box and use it in a closer or whatever they want so you've really got to be on the ball for everyone's sake not just mine for myself but other people are relying, at times on that organisation that we all do (Personal interview, Nov 26, 2008).

During the live production each EVS professional is simultaneously providing back up to other team members, while looking for quality television that entertains the viewer. The individual traits of a television professional including organisation, focus, and experienced gained inside the team, was seen in action during the live cricket match. Therefore, at this point experience was added to the list of consummate masteries.

In order to understand collaboration and immersive phronesis as a way of learning, and in an attempt to understand how we learn and gain knowledge, and how alternate forms of knowledge might be practiced, communicated and represented, the theories of memory, habitus, tacit knowing and metis were analysed. A particular emphasis was placed on collaborative effort, as an unambiguous element found inside the field of live television. How do professionals reach the point in which they can produce a live television production in real time with absolute synchronicity?

- *Habitus*

The first theory in the acquisition of knowledge that was examined was habitus. In his work, *Outline of a Theory of Practice* (1977), Bourdieu refers to habitus as "a partly unconscious 'taking in' of rules, values and dispositions" (78) of a social collective. Bourdieu refers to habitus in his later works as 'dispositions', and suggests learning can happen unconsciously as part of the habitus (1992/1998). Bourdieu, along with the more recent work of Zackariasson, Styhre and Wilson

(2006), propose that immersion in the habitus, or field of activity, allows collaborative aspects of phronesis to occur. Phronesis described by Zackariasson, Styhre and Wilson as the creation, implementation and evaluation of new ways of doing things suggest collaborative learning, based on detailed and practical application, is evident inside the habitus (419). For example, as a person acquires information that is conceptual, sensory, visual, or contextual, the pieces can be drawn together to allow the person to make sense of the way in which things are done. It is through this process of acquiring information that a person's subsequent actions and beliefs are strongly influenced. The influence of other individuals inside the field, and the desired outcome of the collective, suggest there is an unconscious taking in of guidelines, systems and processes from the field.   It is here that Bourdieu's theory of habitus, and the understanding of tacit knowing come together. Polanyi's and Bourdieu's theories help substantiate that the separation of theory from practice does not exist. According to Polanyi tacit knowing:

> Is particularly clear in the art of diagnosing, which intimately combines
> skilful testing with expert observation. I shall always speak of
> "knowing," therefore, to cover both practical and theoretical knowledge
> (Polanyi 1966, 6).

Polanyi's definition of diagnosis, and the term 'knowing' as both theoretical and practical, dismisses the bifurcation of the two ways of learning. Furthermore, Polanyi (1966) cites Gilbert Ryle in support of his argument, in that tacit knowing is a knowing that is informed practice, through actions. Ryle points out that the "knowing what" and the "knowing how…have a similar structure and neither is ever present without the other" (6). According to Webb, Schirato and Danaher, in their work on Bourdieu:

> Practices, and the negotiations, deliberations and option-takings that
> produce them, are simultaneously conscious and unconscious…they are
> influenced – or almost driven – by the values and expectations that they
> get from the habitus (2002, 58).

The relevance of this quote sits in the 'unconscious' acts set up by the habitus. Bourdieu uses a game of soccer as an example of the team ethos, explaining that

players would never react in a way that was outside the habitus. Bourdieu pointed out that:

> The habitus is this kind of practical sense for what is to be done in a given situation – what is called in sport, a "feel" for the game, that is, the art of *anticipating* the future of the game, which is inscribed in the present state of play (Bourdieu 1998, 25).

Webb, Shirato and Danaher liken habitus to a game of soccer in which each player knows the rules "both written and unwritten" (2002, 59). More importantly, the players know how to manipulate the referee's enforcement of those rules. In this way, the resemblance of a practical sense of anticipating the present, and the future of a soccer team in action, to that of a live television team, cannot be mistaken. Both teams are working in real time to achieve a collaborative outcome. Although each member of the team has specialist skills and attributes, the entire team work as one.

To continue the argument that individuals learn through collaborative, and immersive phronesis or habitus, Bourdieu's interpretation of practical reason suggests that habitus exists on different levels, or as previously established in different fields. Bourdieu states: "…the hallmark of practice is to be "logical"" (Bourdieu and Wacquant 1992, 120) and the "theory of practice is the product of a practical sense" or "sense of the game" (121). Practical reason suggests that although individuals take in the rules and dispositions of the habitus unconsciously, they still have the capacity to reason. This point helps define how people respond to situations, and the influences that help them reach conclusions, react or respond. Polanyi proposes that people use this form of reason, '…not by looking at things, but by dwelling in them" (1966, 18) in order to understand the meaning of things. It could be said that the habitus or field of activity, has helped shape the responses of individuals.

Furthermore, according to Bourdieu the habitus is "durable, and orientated towards the practical" (1977, 17). This would suggest on-going learning. Webb, Schirato and Danaher (2002, 42), point out that in order to build knowledge through "continuity of meaning" the habitus it is able to endure change. Continuity of meaning can be described as a common belief, and include the core set of values, beliefs and processes observed by a given group (42-43). For example, in a personal

communication, a respondent described Gary Deans; one of Australians better known sports directors, as "a tremendous sportsman; a great ruby union player" who was like a 'big sponge'. He has a real passion for the job, is organised, focussed and more importantly: "He can literally direct anything" (Anonymous, personal interview, Oct 27, 2008). Gary brought the discipline and strategies of the playing field into television, and adapted the discipline and strategies of the game played with the team to that of television. He also took on board new knowledge, and through experience in the field became highly successful. In order for Deans to become successful, he embodied the field of live television and in so doing could actively respond to any given situation.

According to Webb, Schirato and Danaher, the response to situations and the actions taken by people are enduring traits that work at "the level of the body, shaping what might seem its distinctive responses" (2002, 114-115). In addition to the description above, a good example of the theories of habitus as "the set of durable dispositions that people carry within them" (2002, 114), and its potential for modification (41), is described below in personal communication with one of the interviewees. The respondent who is now a very well respected and successful live television executive, had worked in live videotapes on innumerable outside broadcasts pointed out:

> If you profile a lot of really, really good operatives…you know all those guys that really, really made it somewhere, you'd probably find that they played very, very systemated sports at school; big, solid team sports, where you gave everything (Anonymous, personal interview, Oct 27, 2008).

The description of a 'good operative', having a solid disposition to team sports substantiates the hypothesis in part, as it explicates the distinctive responses of strategizing in the moment, as important to the field live television. As outlined above, the collaboration found as part of a team working in real time television, is central to the research. However, how is knowledge transposed, inside the habitus?

Habitus and language

Drawn from the theories established by Bourdieu and Polanyi, the environment that is live television is a demonstrated example of how tacit knowing takes place inside the habitus or field, and is instructed by the particular *language* of the field. Webb, Schirato and Danaher (2002), describe language, "not as a pre-given reality, but as a *practice"* (13) of how we understand the world. The language of a field "has its own set of discourses and styles" (13), and determines the value of things as part of the field. Individuals learn language from fields they actively embody. Bourdieu proposed that the habitus is subject to change. Individuals who move through similar fields including sports teams as described above, bring with them the dispositions of the earlier habitus or field. Fields outside, not privy to another field's language, are at a disadvantage. In this way, those outside any other field may not understand other fields, and in so doing, misconceptions occur.

The language of live television includes the processes and systems that allow an individual to think ahead, or have a 'feel for the game'. Once the knowledge of the language is embodied, strategies can be employed. One of the interviewees described this knowledge as:

> We started working all these systems out. Systems to patch the OB truck, systems to, who was going to be doing end on replays, who was doing this replay, who was the better guy to do this particular replay versus that… Once they can technically handle; sorry operationally handle the equipment, then you can actually find out if someone's creative or not (Anonymous personal interview, Oct 27, 2008).

As established earlier intellectual creativity presents as aesthetics through reasoned strategizing, derived from a set of consummate skills and attributes. The aesthetic form of the language of television is where creativity takes place. Aesthetic language is the creation and implementation of innovation through the skills and attributes of the individual and the team, as the televisual narrative unfolds. The same respondent spoke about how he was able to concentrate on the aesthetics of a cricket match because he had learned the system, and knew the timing involved. He believes that timing: "…and that's the art of it; the art of it's the timing" (Anonymous, personal interview, Oct 27, 2008) is paramount in television. He described an example of how

knowing the game, and the way television works, enabled him to achieve the right timing:

> Even as a VT Director you get to gauge the amount of time between balls. So you know how many you can slot in. You know the guy hits one out through cover and by the time it comes back, you know if he's a quick bowler. He's walking back' you just get this feeling that it's going to be; you know, ten, twelve seconds. Better than that you get a feeling you can put in two replays. It's really weird (Anonymous, personal interview, Oct 27, 2008).

The 'weird feeling', describes the unconscious knowing that has been embedded through experience and knowledge, gained as part of the live television habitus. The language of the field is not only the systems and processes it is also the aesthetics. In order to achieve a truly innovative narrative, which is this case, is in part, the game of cricket the aesthetics of timing are employed by experienced professionals. The language of the field is very complex and can only be truly learned through constant immersion during real time events, which allow the professional to take in the aesthetics, as timing. An individual can learn aesthetics of timing without the collaborative effort of the team, however in order to employ aesthetics of timing, as distinctive responses in real time, the learning needs to take place in real time, in collaboration with the team. At this point the set of consummate masteries began to develop further. Although the set still contained the prerequisite skills and attitudes of:

• Focus
• Organised
• Knowing the systems
• Passion
• Attention to detail
• Speed
• Accuracy
• Experience
• Teamwork

A further category began to emerge in the way of aesthetics. This set included *time,* as a pivot point in which the aesthetics of live television play out. Bourdieu points out: "in habitus the past, the present and the future intersect and interpenetrate one another" (Bourdieu and Wacquant 1992, 22). It is here that the reasoned strategies, by individuals inside the collective, begin to appear as intellectual creativity. Bourdieu's definition, and the intersection of the past, present and future during 'the game', provided a greater understanding of the field of live television, with the theories coming together to demonstrate how live television professionals may learn. With this in mind, *time* in the past, present and future was added to the list of consummate masteries. In order to understand how this theory of learning fits with live television, there was a need to reiterate Polanyi's work on tacit knowing, as "we can know more than we can tell" (1966, 4), suggesting an unconscious knowledge gained, expressed "in our actions" (Greenwood and Levin in Denzin and Lincoln 2008, 66). As discussed earlier, 'knowing the systems' is one of the set of consummate masteries. Therefore, through repetitive acts during live television, the knowledge required for operating equipment, such as a camera, or a vision-mixing desk is taken in as the language of the field. When a consummate level of acting in the moment is achieved, it becomes a subconscious act.

In summation

The theories of Bourdieu, Polanyi, Zackariasson, Styhre and Wilson propose that habitus is a place where individuals can operate in real time. The habitus or field of activity, such as a soccer team, video gamer or television crew all have two things in common. William Fitzwater in his capacity as a director, when pointing out his requirements for a live television program said: "I'd want a team that thought ahead…ready, anticipating; thinking ahead" (Personal interview Aug 20, 2008). The commonalities are real time and anticipation of the future. The consummate professional who has learned the systems, which are the activities of the field, is then able to perform strategic actions at a higher level. The knowledge gained inside the habitus is recalled unconsciously, which allows unencumbered thought, and time for innovation.

The strength of the proposition above can be found in the training given to present day combat soldiers. The training provided in an immersive environment or habitus, is aimed at producing combatants who can act without thinking. As discussed in Chapter 1, 'Sandbox' is used to train soldiers with a "warrior ethos" promising: "decreased collateral damage and improved US-Iraqi relations" (Magelssen 2009, 1). And just as any reflective practitioner would do, the army debriefs the soldiers "on their successes and their mistakes before restaging" (1). The theories presented here establish a way in which knowledge is gained, and actions are produced from that knowledge. However, to develop a deeper understanding of how habitus, and language of a field, relative to tacit knowing contribute to learning inside the field of live television, an examination of the concepts of memory and metis were explored.

- *Memory*

The second theory examined in how knowledge is obtained is memory. Memory has been seen to occur in various ways, with the work by Ricoeur (2004), Gouhier (1952) and Bergson (1896), discussing memory as recitation of repetition, as habit, and as distinct recollection. In order for us to learn, we need to remember. Ricoeur (2004) produced one of the most significant theories around memory. He maintained that the art of memory happens in two parts:

> The first govern the selection of the places, the second govern the mental images of the things one wishes to remember and which the art assigns to the places selected (Ricoeur 2004, 62).

The second part of memory as described by Ricoeur seemingly allows easy recollection of the stored images as memory, at the appropriate moment. In this way memory is preserved, in an order of the things memorised (2004, 62). The theories of memory, suggest the ability for individuals to recall past memories of things learned, in way similar to that of Polanyi's tacit knowing. Memory in this form is seemingly akin to hidden understandings that guide our actions.

It is here that Bergson's proposition suggests, a pair of opposites of memory exist. The two opposites of memory exemplified by Bergson are: "*mémoire-habitude* (memory as habit), and *mémoire-souvenir* (memory as distinct recollection)"

(Bergson quoted by Ricoeur 2004, 24). The term 'habit-memory', used by Bergson and cited by Ricoeur, described what he saw as "part of [our] present, exactly like [our] habit of walking or of writing; it is lived and acted, rather than represented" (90). The theory suggests that what we learn through habit is acted out in our daily lives, (or jobs) without effort. On the other hand, spontaneous recollection as a representation "is perfect from the outset; time can add nothing to its image without disfiguring it; it retains its memory in place and date" (95). In short, "the memory of a given reading is a representation and only a representation" (91), whereas the lesson learned is, "'acted' rather than represented" (94). These two forms of memory are similar to the taking in of dispositions inside the habitus (*mémoire-habitude),* and out ability to respond through practical reason (*mémoire-souvenir),* with practical reason as a dimension of habitus based upon a thorough knowledge of the language of the field. It has been argued that habitus and mémoire-habitude are not the same in theory. However, the two forms of memory combined seemingly suggest an association.

There is a need to break down Ricoeur's theories in order to understand his concept of memory. Ricoeur proposes that through repetition of systems; be they technical, mathematical, theoretical or practical, an individual gains the ability to recall memory through recitation, just as a dancer who has memorised a dance can recall the moves. Gouhier suggests, "the execution [of memory] is distinct from the composition of the work", thus allowing the artist to perform a "faithful and innovative" execution with "prior labor forgotten" (Gouthier quoted by Ricoeur 2004, 61). Recitation constitutes a favoured way of learning as it has been utilised by professions to learn such things as systems and mathematical tables (60). Recitation belongs to the knowing how: "…of being ready to…without having to repeat the effort of learning again" (26). The ability to recall and recite what we have learned comes from constant repetition of systems. It is here that a connection of how to learn complex equipment, and the processes of live television occur. As discussed earlier, the consummate knowledge of systems allowed individuals to be creative. This was because the effort of recollection was an unconscious effort, which allowed faithful innovation (61).

In summation

Previously, the intrinsic nature of timing, relevant to the skills and attributes of the live television professional were discussed as the aesthetics of timing. Ricoeur's work on memory is important to this research. However, the most valuable aspect of the theory put forward by Ricoeur and Bergson on how we remember, is time. "The common feature of the relation to time" (2004, 24) unifies the spectrum of both forms of memory presented. As Ricoeur suggests:

> An experience acquired earlier is presupposed; however in the case of habit what is acquired is incorporated into the living present, unmarked, unremarked as past (2004, 24).

The supposition, that in order to remember we need to have had a previous experience is clear. However, in the case of habit-memory, or habitus as Bourdieu describes his theory; there seemingly exists a unification of the ways in which we learn, and how memories are retrieved. If we consider the habitus of live television, memory is unconsciously past and present. However, such theories require further development to capture the live nature of television production, as the need for anticipation in live television is apparent. In this way, recollection of memory in the field of live television needs to happen unconsciously in the past and present, and into the future as anticipation of a memory. In live television recollection of memories in anticipation, is happening as a strategy of present memory.

An examination of the concept of metis helps to explicate the particular relationships between practical reason and language that produces knowledge in the live television environment. It also provides the support that metis as a form of strategic knowledge, may include a place for anticipated memories.

- *Metis*

Plato and Aristotle saw metis as a dimension of humanity that informed practical knowledge, in particular in professions who engaged in strategies. An example is the militia, who with an understanding of "dynamically changing circumstances"

(Detienne and Vernant as quoted by Letiche and Statler 2005), devise informed tactics. In Letiche and Statler's (2005,1) paper around organisational change, they quote De Certeau, who describes the concept of metis as: "cunning intelligence", or a wisdom that comes from experience. Metis as a form of intelligent strategizing enables people to "disguise or transform themselves in order to survive" (1).

Metis is made up of two parts. Firstly, there is 'quick-wittedness' that allows reaction to the dynamics of change and secondly, a 'good-eye', or the ability to 'respond adaptively' to change (Letiche and Statler 2005, 3). Needless to say, the portrayal of metis in contrasting forms exists in academic circles, and according to Letiche and Statler, metis "can simultaneously be associated with the rhetoric of control and oppression...while at the same time retaining a rhetoric of creativity and release" (4). Metis as a form of intellectual cunning, found in the dynamics of strategic response in action and adaptation, is foremost in the investigations sought here. More importantly, that metis is "revealed in and through what is said and how it persuades" (4) suggests the ability to measure metis in action. The manifestation of metis happens inside specific events that require a hands-on approach to produce innovation and change. However, the actual time that metis takes place, as agreed by Aristotle and Plato, cannot be observed (Letiche and Statler 2005, 5). Metis is unexpected, as it is neither gradual nor slow. More importantly, metis does not take place during incremental change, as it is sporadic and dramatic (6). Such an analysis is particularly suited to the production of live television, in that although metis is revealed through a course of influence, the actual moment of influence cannot be observed.

Letiche and Statler go on to talk about responsiveness, meaning, and action in organizations. The suggestion that "metis involves a partial abandonment of control" (2005, 5) may or may not, in organisational terms, be a good thing. However, in the environment of live television production this situation, or strategy may work effectively for the good of the collective. More experienced individuals may take over the problem caused by the less experienced. In this way, the less experienced member of the team abandons the problem and the more experienced member of the collective provides an intuitive, "cunning, unforeseen and clever action … in response" (5). When innovation, change and newness are required, metis as the

hands-on practice of the radically 'new', or pure becoming, takes place inside specific events (6-7). And, if as Letiche and Statler suggest, the evocation of metis requires a dynamic environment that is subject to challenging circumstances, it follows that live television lends itself to metis in action.

In conclusion

If we look at the evidence presented of how we learn, there is a suggestion of similarities in the theories presented. Firstly, there is a correlation between Aristotle's techne, being "inherently action oriented and inherently productive" (Denzin and Lincoln 2008, 66), and Polanyi's tacit knowing, where our actions are guided by "more than we can tell" (1966, 4). Secondly, having established that tacit knowing are hidden understandings, this argument suggests inherent knowledge, as dispositions found in people who work in live television, can include skills and attributes gained in a previous habitus. As discussed earlier, Bourdieu sees a durable habitus, one that is subject to change. For example, the quotes derived from the personal interviews demonstrate that people who have played team sports, or musicians who play together in an orchestra or band have individual and collaborative dispositions that can be built upon, to enable them to work inside the live television environment. The dispositions, as skills and attributes include self-discipline that can be described as a work ethic, focus, organisation, the ability to anticipate, accuracy to detail and working as part of a team.

Finally, Zackariasson, Styhre and Wilson's (2006) work on the collaborative aspects of phronesis, developed through immersion in a specific field of activity, bring the previous theories together. In the case of the television professional the collective is the team or television crew, operating in real time. The shell that covers the theories of how we learn and gain knowledge seemingly fits with Bourdieu's habitus. Habitus begins with us, and its influences stay and develop as we grow, for according to Bourdieu:

> Habitus is both durable, and orientated towards the practical: dispositions, knowledge's and values are always potentially subject to modification, rather than being consumed or re-inscribed (that is we can change our

habitus from practical needs like seeing things from a different view) (1977, 17).

The hypothesis, which is supported by the above theories, argues that in order to capture the innate dispositions that might personify individuals who choose to work in the field of live television, it is fundamental to learn inside the environment, that is live television. In this way, it seeks to demonstrate how such dispositions by individuals can be adapted to the field, and recognised as the aesthetics that characterise creative work. Immersion in the habitus provides individuals with a set of consummate masteries made up of inherent attributes, and learnt skills.

The research also seeks to demonstrate that individuals who do not possess the dispositions that characterise a live collaborative environment, learn 'how to make' live television creatively, by obtaining a level of knowing inside the live television habitus. The individual arrives at the level of consummate mastery, by gaining experience of equipment, processes and systems as part of the collaborative effort. It is during the live production phase that the creativity of the individual and the team takes place. Finally, it is at the point of understanding the 'language' of live television, that creativity can be illustrated.

The following two chapters situate the theories of tacit knowing, habitus, memory and metis to inform the examination of the data. The data presented during observations, and from professional reflective practice are aligned with the statements put forward by industry professionals, to substantiate the theories presented above. Chapters 4 and 5 also set out the particular dispositions found in professionals who work in television, during the process of making a live program. The evidence found, by exposing the language of the field of live television, substantiates the intellectual knowledge particular to the field. It explicates the intellectual creativity, as reasoned strategizing within the aesthetic masteries, during real time production that exists inside the field of live television. Finally, it shows that creativity is found in different forms, and that it can be unconsciously individualistic as suggested by the Greeks, or bestowed on everyone as proposed by the Romans. It suggests that creativity can be individualistic and obscured within

the creative process, or it can be seen as a product, either by the individual or through a communal effort.

Chapter 4

Examining the Data: Qualitative interviews, dispositions and professional reflective practice

Introduction

The previous chapter has explored ways of learning, and aligned some of those theories, in particular habitus and metis, to the field of live television. Prior research into forms of knowledge and memory acquisition, provide a path to understanding how live television professionals may build on personal dispositions, and develop skills as part of a collaborative learning process. The key to modelling teaching practices better suited to live television is collaborative embodiment, during 'real time' practice. In addition to statements put forward by industry professionals, and the key to the teaching model, intellectual creativity it is often a subconscious act obscured from individuals outside the field. Throughout the theories presented in the previous chapter it is evident that strategic reasoning inside a collaborative, real time environment, equates to intellectual creativity.

The following two chapters based on the theories of learning, and the processes involved in live television, examine the roles of industry professionals during live productions. Intellectual creativity, and why this form of creativity is not recognised by people outside the field will be discussed and illustrated. Through examination of the data, the particular dispositions that can be seen to exist in professionals who work in live television are set out. The analysis exposes the language of the field of live television, taking into account metaliteracies, and establishes the particular knowledge base found in that field. The following observations also provide the foundation of a better understanding, and recognition of the creative intellect that exists inside the field of live television. It also shows how during live productions, television professionals transcend the director's interpretation of the televisual narrative, and through innovative strategies based on their skills and attributes, creatively add to the programs output.

To support the hypothesis presented in this thesis, that opaque or inadequately formed understandings of how creativity applies to the field of live television have

impeded the development of pedagogies suitable to the teaching of live television in universities, the data examined in the following two chapters cover two methods of data gathering and analysis. The first, as outlined in Chapter 1 was qualitative interviewing conducted in person with specialists in the television industry and education sector. The questions presented to the interviewees are attached as Appendix 2. However, there was no attempt to stop any of the respondents from adding their own professional reflections of practice and observations during the interview. With this in mind, the information gleaned was often led more by the respondent, than the questions.

The second method was Action Research, in the form of Observational and Participatory Action Research, as well as my own observations and reflection as a Professional Reflective Practitioner. These three forms of Action Research sought to unravel the exact nature of jobs inside the industry. The data presented in Appendix 3, and the definitions of roles found in television were extracted from skills sets from various industry bodies, and television production texts. This data only alludes to the nature of the roles. Therefore, during participant and direct observation, the role of the vision mixer, camera operator, director's assistant and EVS operator were monitored in a contemporary live television environment, to substantiate my professional reflective understanding of the roles.

The correlation between the outcomes relevant to the research problems, drawn from the qualitative interviews and participant observations of the key roles, has given rise to three important points. First and foremost, evidence of intellectual creativity has been found in all live television production roles observed. Secondly, the nature of those roles precludes the notion they are practitioners who are mere 'button pushers'. The data signals the key skills and attributes required to work inside the live television field, and in so doing provides a greater understanding of the roles analysed.

Finally, the examination of the data indicates that embodiment in the field of live television provides an environment not found in filmmaking. It is during the live production phase that television is set apart from film, and the personal skills and attributes of the solo professional become integral to, and part of the collective. It is

also during this phase that each crewmember draws on their dispositions and experience inside the field, to utilise their consummate masteries. Consummate masteries are a set of skills and attributes applicable to each role and the collective, where individuals reach a level of intellectual and creative excellence through particular dispositions and experience gained as part of the live television field. Although each crew role has its own set, the set of consummate masteries found in all the roles analysed are:

• Teamwork: Work in collaboration with other crewmembers
• Work Ethic: Achieve and maintain high levels of self discipline
• Focus: Remain focussed whilst working under pressure
• Passion: Have enthusiasm, stamina and drive
• Verbal and Nonverbal Communication: communicate through actions and listen effectively, accurately and succinctly
• Flexibility: Demonstrate flexibility and the ability to multitask
• Experience: Undertake their crew role with high levels of demonstrated expertise
• Speed and Accuracy: Demonstrate dexterity
• Know the Systems: Demonstrate a high level of understanding of the television process
• Visual and Aural literacy: Demonstrate a high level of multi-literacies
• Creative: Visualise and produce creative outcomes according to the program brief
• Aesthetic timing: Demonstrate the aesthetic masteries which include anticipation and past, present and future time, the moment and timing

The following two chapters will draw out and explain the set of consummate masteries detailed above. To begin, evidence suggests the type of person that works as a successful multi-camera, live television professional has personal attributes and skills, which can be divided into two areas. The division is fundamental in understanding the characteristics of people seeking work in the live television field. First there are dispositions, which come from experiences inside the social collective, or habitus. A 2007 study found that all forms of industry need graduates who have a

set of skills containing, "oral and written communication, time management, critical thinking, problem solving, personal accountability and the ability to work effectively with others" (DiMartino and Castaneda 2007, 1). People who demonstrate and utilise these skills and attributes do better academically and with "a positive attitude to learning" (Goleman 1996, 91) are the most successful. These skills are classified in the context of this thesis as *inherent attributes,* and are outlined in detail in Chapters 4 and 5, during examination of each of the four roles.

The second set; or *learnt masteries* that are also examined during each of the four roles, are realised during the collaborative process of working in the field of live television. Dispositions, or attributes found outside the habitus of live television are adapted by those who already have experience of those dispositions. However, the live television habitus requires similar dispositions, and these along with the skills and attributes indicative of the live television professional, are learnt and experienced during the real time, or time-future phase of television production. In order to establish the sets of skills and attributes, a mixed method of qualitative research led to the following conclusions. The inherent attributes or dispositions and learned masteries of each role are outlined during the analysis that follows.

Tests in the field of live television, and examination of transcripts of personal interviews with industry professionals, have established sets of skills and attributes indicative of the live television professional that make up the consummate masteries of the field. According to Noble and Watkins:

> The logic of our practice is embedded in the requirements of the field, practically mastered by its participants. This is as true of a field of sporting practice as it is of the field of higher education (2003, 522).

In order to arrive at the place where television professionals work as a highly tuned team of intellectually creative individuals, the consummate skills and masteries of professionals who work in live television will be outlined, and demonstrated in depth.

In the first place the qualitative interviews are analysed, and a set of dispositions are extricated that may be seen to be inherent characteristics of people who inhabit live

television. The second topic of investigation is Professional Reflective Practice in my capacity as a camera operator, during harness racing. This second topic looks at the creative orientations of an individual working in time-future, as a camera operator in a multi-camera environment.

The third topic, investigates my role as a vision mixer during professional reflective practitioner, and is used to scrutinise time-future and how intellectual creativity may be seen to exist for the live television professional.

The final topic undertaken during Direct Observation at a live cricket broadcast, introduces the collective, or 'real time' production team, as observed through the roles of the vision mixer, EVS operator and director's assistant. This third topic takes the creative orientations of how individuals operate as a team, during time-future, one step further, to validate the hypothesis. Finally, the fourth topic goes on to show an assessment of how differing teaching structures, and environments support the argument.

Utilising Action Research as the root of the investigations, all of the methods including qualitative interviews, professional reflective practice, and observational and participatory observation research are drawn out, and woven into the data as it is examined. These examinations sought to establish two key points. Firstly, the observed roles, and their part in the television team are explained in depth. Secondly, during explanation of the roles observed, intellectual creativity is validated and made obvious. However, after having established problems with the industry through archival research, the first step in the process were the qualitative interviews. Notes taken during professional reflective practice have been extracted as written, and have not been adapted in any way. Italicised paragraphs found throughout the observations are Reflective Practice comments made to define and explain the live television process in the context in which it is written.

Qualitative interviews

In an effort to establish first-hand what was happening in the industry, and the outcomes teaching models were having on training for live television, a number of

industry professionals, termed elite interviews, or individuals who are "considered to be influential, prominent, and/or well informed in an organization or community" (Marshall and Rossman 2006, 105), were conducted. The information gleaned from the interviews was used to gain a greater understanding of live television, and the people involved in educating people for the industry. The interviews followed a set of predetermined open-ended questions. The semi-structured nature, and flexibility of the interviews encouraged the participants to add additional information to the queries that may otherwise have been overlooked. The eleven participants outlined at Table 2 in Chapter 1 included professionals from a cross-section of the research domain. During the breakdown of the transcribed interviews, it became apparent that all of the participants, "selected on the basis of their expertise in areas relevant to the research" (105); including those from the educational sphere, had worked, or do work in the television industry, although not necessarily live television.

When interviews have been transcribed, "they are not raw data anymore – they are 'processed data' " (Wengraf as quoted by Marshall and Rossman 2006, 110). Although there is concern, in relation to the difficulties found in transcribing the true meaning of the participant's response to questions, the interviews conducted added significant information to the research. In addition, during the process of interviewing, transcribing and interpreting; my position as a professional reflective practitioner, in several of the areas investigated, and as a television professional and lecturer, helped inform the analysis and interpretation of meanings more accurately.

The qualitative interviews have added weight to the research, and have supported archival evidence, observations, and other data to provide a contemporary understanding of the television industry, educational output and future requirements. The interviews varied in length and complexity due to the respondent's position in their field, and knowledge of the subject matter. As the interviews were transcribed a number of keywords, phrases and descriptions became visible (see Table 4 and 5 on pages 188 to 190). The qualitative interviews, and the information obtained, will be presented in parts to provide solid evidence to substantiate the theories presented in Chapter 1.

The Professional Reflective Practice section that follows examines the role of the multi-camera operator, during a live harness racing broadcast. The section demonstrates three key points in validation of the hypothesis. Firstly, it demonstrates the individual consummate masteries utilised by the professional camera operator, and secondly, it outlines the collaboration of each crewmember within the team, as part of the live event. At this point, the reasoned strategizing by the individual at work with, and within the team, produces a fluid linear narrative. This reasoned strategizing in the present, and into the future during real time, is validation of intellectual creativity at play. Finally, in addition to Chapter 5, the following analyses prove that individuals, working as a member of a team, although guided by the director, are intrinsically self-directed.

Chapter 5 builds on the intellectual creativity of the individual, and provides an in-depth examination of the part played by the individual within the whole team. It also strengthens the case put forward, for a pedagogical model based on project-based immersion, in order to develop the skills and attributes, and provide a foundation for the consummate professional and the formulation of intellectual creativity.

Professional Reflective Practice (PRP) of the multi-camera operator (harness races)

The following Professional Reflective Practice supports and validates the creative orientations of an individual working in time-future, and details the skills and attributes of the role. However before I proceed, it is vital to place my knowledge of the role of camera operator in perspective. Once again, in my capacity as a professional reflective practitioner, I have worked as a camera operator in live television, on and off since 1974. Over the years I have covered television genre's including, children's, news, sport, cooking, drama, music, current affairs, breakfast and light entertainment on studio and outside broadcast cameras. In addition to understanding the role of a live camera operator, is my knowledge as a director of live production. The following observations as a professional reflective practitioner were undertaken in a participatory environment, in my role as a multi-camera operator on a harness racing outside broadcast (OB). To begin, in television there are basically two types of camera operator:

1. The location camera operator who uses a single camera for Electronic Field Productions (EFP) such as documentaries, and Electronic News Gathering (ENG) professionals who use a single camera for news production.
2. The studio and/or outside broadcast camera operator that operate in a multi-camera environment, and work synchronously with several other camera operators. In particular, in genres such as sport, the camera operator may be working intrinsically with the team whilst also delivering a solo coverage.

While an ENG or EFP camera operator needs to be able to cover all the elements required for a program, or segment as prescribed by the director or producer, the footage collected by the ENG/EFP camera, along with the sound is edited after the event. During the editing process poor sound and vision can be eliminated, and shots placed in a different order to how they were originally shot. A live sports program does not have this luxury.

Prior to my participation as a camera operator on the harness racing, I spoke to one of the owners about the availability of crew. He said he had a big problem getting camera operators who had done live OB coverage. He mentioned a news camera operator who; although he could shoot ENG news, was incapable of covering the races. He also found a lot of people were not dedicated enough to stay all day, nor make a commitment to be there when they said they would (PRP, Dec 3, 2008). The lack of commitment and dedication comes from lack of passion for the work, and with that a work ethic categorised as 'discipline', is lost. Inevitably lack of self discipline ends up having an effect on the entire crew and the outcomes of the production.

Multi-camera and single camera operators perform similar tasks, however the roles are quite different. The studio camera operator and the outside broadcast camera operator are both multi-camera operator positions, and both work as part of a very large production team. Inside that team the multi-camera operator works in collaboration, and in unison with the other camera operators, under direction. According to Fitzwater:

> A first class studio camera operator is someone who creates a creative interpretation with the equipment they've got. It might be a top end Quattro pedestal with a full camera, a large camera, with a big box lens and all that, and can deal with that to create an aesthetic result that fits in with the concept of the program we are making (Personal interview, Aug 20, 2008).

The key to understanding the multi-camera operator begins with a set of skills and attributes derived from industry, observation and professional reflective practice. There are two parts to being a professional multi-camera operator.

Creative orientations, skills and attributes of a multi-camera operator

The first part comes from understanding what makes a good picture. Included in the skills in this area are:

• Understanding the practical capabilities of the camera and its accessories
• Being able to demonstrate a thorough understanding of framing, styles, techniques and shot composition
• Being able to demonstrate a thorough understanding of the principles of light, colour and exposure and the relationships between each element in the production of quality camera work

The second part, which add to the televisual narrative are the skills and attributes that are:

• To be conversant with all live television terms as used by the director and other crew and demonstrate an understanding of their meaning
• To work creatively as part of the camera team in collaboration with all other crew
• Demonstrate initiative and flexibility
• Interpret and produce the creative requirements of the director
• To be able to work in time-future
• The ability to communicate effectively as a team member
• Self discipline and focus
• The ability to work under pressure

• Quick reflexes and agility
• An understanding of the television process
• Multiliterate in the areas of numeracy, literacy and new modes of communication
• Experience

These skills and attributes form the basis of a consummate set of masteries, which will be established during examination of the data that follows.

When a camera operator arrives at the place where the set of consummate masteries are working together, intellectual creativity takes place in the form of actions. A multi-camera operator may appear to be directed. The director may present guidelines on how they wish 'the story' to be told, and provide leadership, or orchestration of the live program while the operator is clearly performing a singular task. However, the following data provides strong evidence of self-direction.

The following data was noted, post participation, and includes italicised descriptions and detailed definitions to help define the personal notes, and align them with the theories presented, and demonstrate the set of consummate masteries described above. In my capacity as a professional reflective practitioner, my role as a camera operator occurred at the harness racing on the Gold Coast. The live coverage of several races over the day was broadcast live on Fox Sport. The production company involved was a very tiny operation. It consisted of a small OB truck that could be operated by one person doing direction, sound, vision control and recording. On the day, there were four camera operators.

The van was equipped with 4 cameras with a vision control unit for each camera, a character generator, small vision-mixing and audio mixing desks, 3 high definition tape machines and 3 DVD's, as well as all the other required equipment such as communications system, and monitors showing all the visual outputs etc. I was told the van covered each race for Fox Sport, and the racing stewards have an output of one camera to view the race for any problems with horses or riders. The races are recorded live onto a hard drive and videotape (as a club master), and post race uploaded onto the Internet for Fox Sports site.

All the cameras were on ISO (isolated) [1]and as far as I could see were cut together as a single output back at Fox Sport[2]. Each camera covered a section of the track, for example front straight, back straight and the finish. The races were replayed in the clubhouse after each race as well as going live on Fox Sports, with a delay of about 4 seconds. The operator in the van, who in this respect has several roles, talks to the cameras, the stewards, and to the network presentation (the department that coordinates all the stations taking the races along with commercial breaks) at Fox Sport. The operator is also responsible for keying[3] race details onto the screen live during the coverage.

The van was parked next to the stables, which meant all the horses would move past prior to assembling in the arena before each race. There were two operators in the van covering the sound and vision feeds to Fox Sport, the stewards and on-site screens. I was given a camera, and loaded it into my car, as I had to go to a position at the end of the straight. I was shown how to set up the camera even though I knew how, but I did need to know where the power and cable to the truck came from. It was secured in a box inside the camera position and was unlocked with a plastic key stored in the camera bag.

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[1] *ISO refers to the output of a camera being recording in isolation as well as being used through the vision-mixing desk for the live 'cut'. In this respect each camera is being recorded on its own videotape or hard drive constantly throughout the race. The 'cut' refers to the cutting together of all four cameras to produce a seamless production in real time through the vision-mixing desk*

[2] *ISO recording is used to assist in postproduction or editing as any problems can be edited out of the live 'cut'. Therefore, any program using ISO recording generally is going to go to post-production and will not be seen as live. However in relation to the harness races, the actual live cut was being done at Fox Sports, as they wanted quality control.*

[3] *Keying refers to the insertion of text and other graphics over the live picture from a character generator (a computer with titling software). Text details include number and name of race, names of horse, jockeys and owners, and other statistics relevant to the coverage.*

My camera position on Diagram 2 (p. 129) at D at end of the straight

I set up the camera and began adjusting the tilt and pan heads for optimal use. Unfortunately, the head was quite old, and as usual the friction[4] on both the pan and tilt was at it last point, which allowed me no option to get the movement any smoother. I also moved the pan and tilt handles so they were longer and the zoom button on the handle was easier to use for my standing position and physical size. Originally, I set the tripod up so the front two legs were parallel with the front of the box, but after the first race I moved them around because I had to move around the back leg when I panned (move the head of the camera on a parallel plane) around the track.

Viewfinder

Lens

Camera head - pan & tilt

Pan & tilt handles

Tripod

---
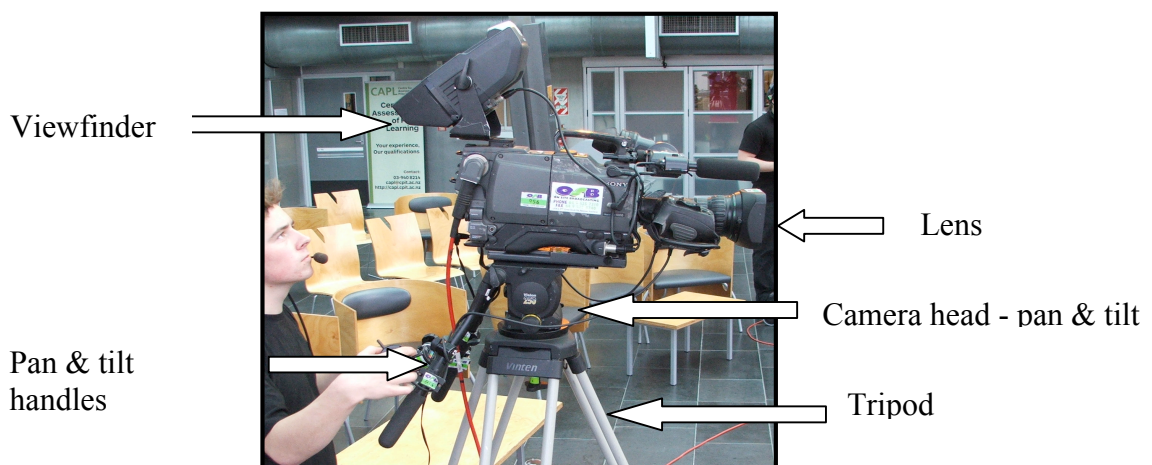
[4] *The camera head's friction control contains fluid that makes the movement of panning (left to right/right to left) and tilting (up and down/down and up) smooth. Without a good camera head the pictures can appear wobbly, particularly on a close lens (as the movement is exaggerated).*

The camera set-up is key to optimal operation. One of the hardest moves a camera operator needs to master is the diagonal tilt with a pan and a zoom included. The position I was in on the track meant I had to do this move on every race. Also, the ability to move your body as little as possible, when dealing with a fixed camera position, helps stop interrupted pans. If I need to move my feet during a pan, the pan is interrupted slightly during the move. This can translate to a brief stop in the pan, and although the viewers who are focussed on the race may not see it, it is bad practice.

Zoomed in to get horses on other side of track

Tilt down and pan right to follow horses

Zoomed out to include all the horses as they go past
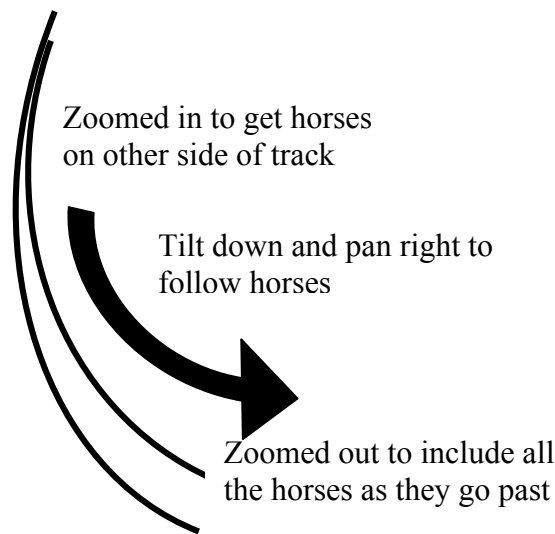
Diagram 1.
My camera moves

Diagram 1 Shows the movement of the pan right, tilt down and zoom out required during the horses as they moved down the straight toward me as seen in the following figures.

Figure 1. Pan right to left
Scene as at **A Diagram 2** p.129

Figure 2. Tilt down & zoom out
Scene as at **B Diagram 2** p.129

Figure 3. Pan right & zoom out
Scene as horses turn bottom corner directly in front of **D Diagram 2** p.129

The first race I covered was not good. I was under the impression I only had to cover a certain part of the track, and so had practiced doing just that, only to find that I was meant to cover the horses all the way around. This was a very different matter as the position of the tripod, and where I placed my feet had to be reorganised.

> *The situation as described above highlights two things. Firstly, the need for succinct and precise communication from the director to the crew and secondly, experience by the camera operator in the subject matter. Without the two parts happening together problems such as those described above arise.*

The second race was better, but I was getting directions from both people in the van. This was very confusing as one person said: "Stay wide", to get all the horses in while the other kept calling me to "zoom in".

A. Horses parallel to my camera appear to stretch out. (As Figure 1)

Horses running anti-clockwise around track

B. Straight

Medium Wide Tight shot pulling focus and zooming out as horses approach camera (As Figure 2)

MW tight shot zooming out, pulling focus and panning right on bottom corner as horses pass left to right (As Figure 2- 3)

C. Need to wait for all horses to pass camera before I zoom into a closer shot at this point.

D. My camera

Diagram 2 Graphic representation of horse and camera movement

Diagram 2 above shows the entire track. The camera (at **D** on **Diagram 2**) that I was operating had three functions. Firstly, was to cover the entire race for the stewards with the outer edges of both sides of the track in shot. Secondly, it also had to be cut with the other three cameras for inclusion in the live broadcast. Finally, the camera I was on was used to cover the straight in front of the main stand situated on the left, and to bring the horses back from the finish to the enclosure.

On race three I was able to read the horses, and found that as they came directly opposite me on the track they were parallel to my camera. This meant that at that point the horses appeared to be spread out on my shot (See **Diagram 2** at **A** and **Scene 1**). I began to zoom out to include all the horses (as requested) only to be called back in to a closer shot, and by the time I reacted the moment had changed. I was then told not to zoom. However, I was faced with reading the shot to make room

for all the horses, or zooming faster and making it a more obvious move, during the shot.

The two operators in the van who had both taken up the role of director were giving me contradictory directions. If they had been completely clear at the outset there would not have been any problems, and I could have done a better job. When I was told to stay wide to get all the horses in, I was then called: "Too wide, zoom in".

*In my mind this would cut off the back horses. When I sat on the wide shot for all the horses to move round past my camera position I was once again called "too wide", even though I would end up cutting out the trailing horses who go wide and slow past my camera (**Diagram 2** at **C**). One director wanted me to keep tight even if I lost the tail-enders, while the other wanted me to keep all the horses in no matter how wide I was. I was also told not to 'read' the horses, which I found quite strange as it meant trying to keep up with them rather than anticipating, so zooms in and out would be smooth and unnoticeable.*

It became clear that there was a system in the way the races were run as well as the coverage required by Fox Sport, the stewards and the production company. It also became apparent that both the people in the van weren't experienced directors. I say this because I am a director, and I am well aware of the information a camera operator needs prior to a production. It was at this point I decided to cover the race from the guidelines I was given, and incorporating my skills as an experienced camera operator, gained through immersion in the live television habitus, provide a smooth and fluid coverage for all concerned. This involved reading the horses movements and anticipating their moves as seen in the previous races. I did this by maintaining a structured shot that was well composed inside the frame, along with total awareness outside the frame of events not seen by the director/s.

Another problem I had with the direction, and my capacity to use the camera effectively was when I was told to take a group of horses back to the enclosure after the race. At the end of the race all the horses came to a stop

*in dribs and drabs around position **C**., depending on their position in the race. Then they turned and walked back to position **B** on **Diagram 2**. I had not been given any directions what to do and so had stayed on the pack, picked up the winner, and moved back on a wide (as this was my job) to the straight. Apparently this wasn't right as I was then told not to pick up the winner, but a group of other horses. So I let the winner and place getters go out of my frame at **C,** and then picked up those at the end. Now horses don't always move in groups, and at one stage I was following a group when they split, and knowing the third horse on the left was going to turn back toward the other horses I stayed with it to bring it back to the others, thus eliminating a quick pan on-air to pick up a group. To achieve this I had to pan across to find a group, and had to zoom out to include at least another horse.*

As mentioned earlier the director cannot see everything a camera operator can. In the OB van the framing of each camera's shot constricts them. Even if they look at a wide shot from another camera to see what is outside the frame of a tighter shot, the angle is totally different, and therefore a true representation of the scene is not available to them. On the other hand, the camera operators can judge what is going on around them. It is in this moment that the operator is self-directing, although they are guided by the director's wishes. They are anticipating the next move while maintaining a well-structured composition (picture), in the present. This is a prime example of the key to live television as time-future, and time-future requires the camera operator to anticipate, not lag behind. It is here that an understanding of time-future literacy begins to emerge, and forms one of the learnt masteries. According to Bourdieu:

> These pre-perceptive anticipations, a sort of practical induction based on previous experience, are not given to a pure subject, a universal transcendental consciousness. They are the fact of the habitus as a feel for the game. Having the feel for the game is having the game under the skin; it is to master in a practical way the future of the game; it is to have a sense of the history of the game. While the bad player is always off tempo, always too early or too late, the good player is the one who *anticipates,* who is ahead of the game. Why can she get ahead of the flow of the...game? Because she has the immanent tendencies of the game in her body, in an incorporated state: she embodies the game (1998, 80-81).

The movement called by the director was not 'good practice', as it involved a series of moves that lost the 'flow of the race'. In this way, the televisual narrative lost its fluidity. If I had done as I anticipated, it would have been smooth and the first horse would have taken the camera back to the other horses without the need to zoom out. I was aware the other horses were there and what they were doing, as I could see them out of the corner of my eye. The direction given was not in anticipation of the event, as seen by the camera operator.

During the day I also found that I was being yelled at, when to me it was obvious I had a problem. For example, when my belt buckle got caught on the pan handle and jerked the pan, or when I was called to zoom out when I had no zoom left. A director yelling in your ear doesn't help a camera operator remain calm and focussed on their role.

A consummate skill to working in live television is focus: in the present and time-future. Focus is another inherent attribute that forms part of the consummate masteries. Yelling is a reaction to a past mistake, which draws attention to that mistake, and fills the present with the past. By filling the present with a negative, the negative can overwhelm, and a chain reaction of negative events can occur. Gestalt, as quoted by Zhenhua (2009, 12), in his work on tacit knowledge suggests: focusing on problems during practical activities "will obstruct the performance of the activity" for it is at this point we "rely on a certain unproblematic background" (12), which enables the activity to remain fluent. In this way we can see tacit knowing, or the "hidden understandings that guide our actions" (Greenwood and Levin 2008, 66), need to be free of encumbrances to work at a consummate level.

Fuller, as quoted by Greenwood and Levin (2008, 58) believes the actions of the individual "are influenced – or almost driven – by the values and expectations that they get from the habitus". For it is during the production phase of live television that the "practices and the negotiations, deliberations and option-takings that produce them, are simultaneously conscious and unconscious" (58). It is in this way that tacit knowing is driven by the habitus, and when the conscious and unconscious options are fluent and

unproblematic, the art of the individual and the collective's consummate masteries are reached.

With this in mind, one of the greatest tasks of teaching students live television is stopping the focus of the negative, to allow present and future moves to occur. The need to provide a student with experience inside the live television habitus is critical in order to obtain consummate masteries. For example, one of my students reflected on the issue in his critical analysis of 'directing live news' by writing:

> *One of the challenges that I faced was when problems occurred; I struggled to focus on the new item in the show. Instead, my mind would instantly begin to analyse even the slightest mistakes, and this would jeopardise the rest of the show (Glover Nov 21, 2010).*

As described earlier in my role as a camera operator, a director is responsible for communicating their vision of 'how they wish to tell the story'. Poor communication leads to mistakes, and focussing on mistakes, ultimately destroys focus. It is vital that directors relay the exact outcomes they wish to achieve before the event, and not during it. Fine-tuning outcomes can happen during an event. However, the team needs to understand the fundamental approach to the coverage, or how the story is to be told in order to achieve their consummate best.

In order to substantiate my participation as a professional reflective practitioner, further examination of the qualitative interviews adds weight to the data, and the theories presented here.

Inherent attributes or dispositions and learnt skills of a camera operator: a detailed analysis

Tacit knowing, present inside the habitus, allows a camera operator to accomplish a seemingly flawless narrative in collaboration with the collective. Polanyi (1966, 10), who described tacit knowing as our "[reliance] on our awareness of a combination of

muscular acts for attending to the performance of a skill', saw actions as exploratory or creative acts, and believed the informed guesses, hunches and imaginings were motivated by passions (4). And *passion* is described as a fundamental or inherent attribute of an exceptional camera operator. These attributes were discussed with an executive producer when he talked about one of Australia's best slomo camera operators (the camera that is replayed at the slowest speed during a game). For example, in a game of cricket the operator needs to be completely focussed and framed on the ball at all times as it is bowled, connects with the stumps, is hit for a run, or hit and caught. According to the respondent, the operator whose area of expertise is sport pointed out:

> He only ever wanted to be a studio camo… he [works] on extreme motion. He's one of the best super slomo camos in the world today. There's probably about three of them and he's one of them. He works *Wimbledon* every year; he works the *British Open Golf* every year, actually hundreds of matches of cricket, he's their first choice. They fly him to Antigua for all the *Twenty-Twenty* stuff. He's their first choice; he is an amazing cameraman (Anonymous, personal interview, Oct 27, 2008).

Fundamentally, it is passion for the job that drives the operator, and provides him with the edge to perform over and above his peers. Further to his passion, the skills and attributes that have given him the experience to arrive at a set of consummate masteries are:

> His ability to work the equipment, and his discipline to stay with it for 6 hours. He'll do cricket; super slomo; is the shot that literally has the ball in the shot and he has to pull down the focus as it pushes away or pushes towards him, every single ball. He doesn't miss one. So his ability to focus on that ball at that time for six or seven hours without missing one is his discipline. He's a good sportsman, a very disciplined sportsman. He paddles; he runs; he's a tri-athlete; says a lot about the person. But early days, he realised that's all he ever wanted to do, so he decided to become the best at what he does (Anonymous, personal interview, Oct 27, 2008).

As an outside broadcast cameraman specialising in slow motion, or as a studio operator, he works with a team of camera operators in a multi-camera environment, utilising skills built up over years of experience. The collective experience of working inside the environment of live television is vital to being a successful

camera operator. Once again a reference to two of the consummate masteries as *experience* (learnt) and *discipline* (inherent) is confirmed as characteristic of an excellent operator. According to Bourdieu:

> The habitus fulfils a function which another philosophy consigns to a transcendental conscience: it is a socialized body, a structured body, a body which has incorporated the immanent structures of a world or of a particular sector of that world — a field — and which structures the perception of that world as well as action in that world (Bourdieu 1998, 81)

The structured body, or field described by Bourdieu as habitus, is outlined in the learnt masteries as *systems*. It is through the structured world of live television that a television professional gains experience. Craig Delahoy, Manager, Training Quality and Accreditation at the ABC in Sydney, talked about the problem facing the ABC in accessing experience operators saying:

> We can't put someone on the main camera on *Chaser* or *Andrew Denton* or something who hasn't necessarily had a camera in their hands before. In fact the main studio camera operators don't usually do the main cameras until they have been doing it for 5 or 10 years (Personal interview, Aug 27, 2008).

Delahoy requires his operators to have extensive experience in the field of live television. Apart from Bourdieu, Polanyi (1966), in reference to his understanding of tacit knowing, points to the notion of immersion (such as the live television habitus) as: "…it is not by looking at things, but by dwelling in them, that we understand their meaning" (18). In this way we can begin to understand the self-directed role of the camera operator.

A multi-camera operator works with a large team, and is directed to get the shots required to tell the story in collaboration with all the other cameras. This does not suggest they are directed without any creative input, or individual judgement. Experienced camera operators are given subject matter, and in unison with the camera team; utilising all their experience, produce the 'best shots', for the director. In a live production the director does not have the time to define shots, or concentrate on framing and composition from each and every camera. They rely on the

experience, knowledge, skill and personal attributes of each camera operator to produce exceptional work, as part of a fluid program.

The skill to 'frame a shot'; meaning to offer up a picture that is perfectly composed, and utilises the frame of the camera's lens to add meaning and fluidity to the directors narrative, is both inherent and learnt. This thesis does not argue for or against inherent creativity, however the skill required for creativity, as a camera operator in the multi-camera environment, needs to be learnt inside the live television habitus. The slomo camera operator may be an exceptional professional however, according to a respondent: if "…you ask him to go and put a camera on his shoulder" the result would be "hopeless" (Anonymous, personal interview, Oct 27, 2008). The reason for this is the difference in the two roles. There are basic skills that include composition, framing and camera operation that are vital to both forms of camera operation.

The language of camera operation is intricate. The ability to introduce creative practice during a harness race may not be obvious. Nevertheless, intellectual creativity takes place during time-future, with the calculations undertaken to produce the perfect outcome. Calculations include, shot size and composition, angles, camera movement up and down, and left and right with the speed and steady movement employed to anticipate (not lag behind), the narrative. All of these calculations are happening in the present, and are also being recalculated into the future, along with the other members of the team.

Diagram 3: The cricket pitch
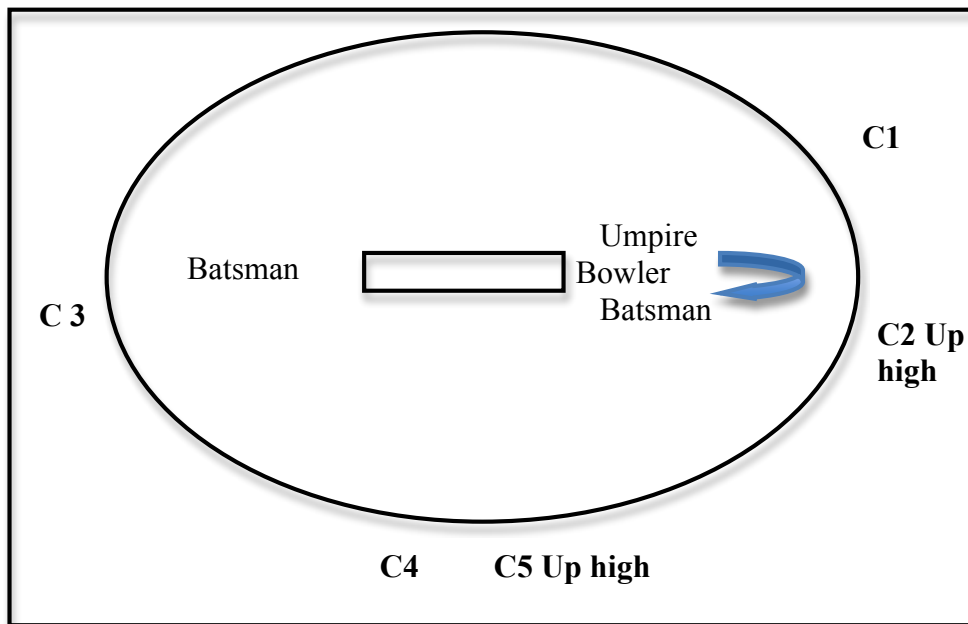
For example in the diagram above, in a game of cricket the bowler begins to walk back to the crease to begin his run. Camera 1 takes the bowler in a shot that shows his full body. In the shot we can see the pace of his walk, and the way in which he is handling the ball; inspecting the seams or polishing it. The shot is close enough to see his facial expressions. Meanwhile, Camera 3 is sitting on a medium wide shot of the pitch but is making sure he keeps the bowler and entire pitch, including both batsmen in frame. Camera 2 is focussed on a fairly close shot of the batsman who is about to receive the ball. In the shot we can see his face, and his preparation while he waits for the delivery. Perhaps he is hitting the pitch with the tip of his bat to smooth it out, or flexing his knees. Camera 4 is sitting on a very wide shot of the entire ground waiting for the ball to leave the bat, while other cameras are focussed on fielders, the umpire or spectators.

> *The bowler reaches the pitch and as he turns we cut from Camera 1 to Camera 3, to see the entire pitch from the batsman's point of view. As he hits the ball we cut to the wide shot on Camera 4 to see the ball go up and out to deep mid wicket. Camera 4 begins to zoom in to see a fielder attempt a catch, however there is a cut to the umpire on Camera 5 as he signals a 'no ball' followed quickly by a reaction shot on Camera 3, who has zoomed into a close shot of the bowler, who picked up the bowlers foot going over the*

crease line. At the same instant Camera 2 has zoomed in to get a reaction from the batsman, and other cameras will be picking up reactions from spectators.

From the point where the ball leaves the bowler's hands all of these actions happen in a split second with each camera operator looking for, and anticipating their best 'shot' to enhance the narrative of the game. Unless the cameras offer up the shot, the director has nothing to add to the game.

Camera operators rely on the communication skills of the director as described in my experience during harness racing. However, the mark of a good operator is the ability to do their job, whilst showing initiative and flexibility. Understandably, camera operators working outside an OB truck or on the studio floor can see things that the director cannot. During live television, cameras often provide shots to the director that may not have been called for. Operators hold the shot for a time until the director either takes it, or the operator knows they need the time to frame on the next shot scripted, or coverage required. The timing involved in this practice is similar to the director who knows how many replays they can get in before the bowler runs for a delivery, or the cricketer himself who knows how many runs he can make and not be run or bowled out. For example, while working as a director on the cricket one of the interviewees pointed out:

> You know the guy hits one out through cover, and by the time it comes back, you know if he's a quick bowler; he's walking back', you just get this feeling that it's going to be; you know; ten, twelve seconds. Better than that you get a feeling you can put in two replays (Anonymous, personal interview, Oct 27, 2008).

On a sporting OB, or an unscripted program such as a cooking show the cameras are given certain areas, or parts of the production to cover. For example, a camera may be required to get the close-up of the slicing and dicing on a cooking show, or cover the soccer match in a following wide shot on a sports OB. Although the cameras have prearranged shots they need to be *flexible* in their thought processes, show *initiative* and have *quick reflexes*. All of which are part of the inherent attributes of a consummate camera operator. They need to be, 'on the ball', as the director may call

other shots and take shots offered-up by cameras that are more significant, and that can't be seen by the director, as seen by the example above. According to Dallimore:

> The main thing with the cricket is to have ball follow, so you actually see the ball being followed and land and go to the boundary or whatever. Sometimes if the cameraman stays there and hasn't followed the ball and you're just stuck with the batsman, well it's not much point showing that angle (Personal interview, Nov 26, 2008).

However, the role of the multi-camera operator covers many genres. A program such as a live concert will have a rundown, and each camera operator will each have camera cards. Camera cards contain shots for each camera that have been devised during rehearsals to tell the director's story. Each camera has their own list of shots, which are linked to all the other cameras to produce a completely fluid narrative. Although the director has described the shots for each camera, it is the operator who brings the shot to life by offering up shots that fit the description, and exceed the director's request. In this way the operator uses the depth of focus, the length of the lens, the framing and the composition to achieve a shot that tells the story in more

detail, and transitions from the shot before it, and the one that comes after, seamlessly.

Studio cameras[5] can be made to move in an arc with the operator zooming in or out at the same time. Zooming is changing the focal length of the lens, which changes the angle of view, for example, from a very tight shot of a persons face to a wide shot of their entire body. The movement which sees the head of the camera move up or down, changing the angle of view on a fixed

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[5] Studio cameras are generally on pedestals (peds) with wheels, which enable the camera to be moved in numerous configurations. A movement from left to right, or right to left can be a pan; meaning the head of the camera pivots on a horizontal plane, or the operator can crab left to right, or right to left by moving the entire pedestal across the floor sideways. The pedestal movement forwards and backwards is called a track (or truck).

vertical plane, is called a tilt while the movement of the entire camera up and down, using the hydraulic pedestal without changing the vertical plane, is called pedding up, or pedding down.

The pedestal camera used in multi-camera television requires a totally different skill-set to the operation of a camera, placed on a fixed leg tripod. The number of moves (pan, tilt, ped, crab, track, zoom) that can be made at any one time, allow complicated movements to be employed by an experienced operator who possess the set of consummate masteries. For example, a camera operator can have a wide shot of a vocalist from side on. A movement to the left in an arc, utilising the pedestal wheels, is used to change the angle of view to directly in front while zooming in and panning right to keep the framing correct. This is done at the same time as tilting, or pedding up, which allows the camera operator to finish the shot on a close shot of the vocalists face. This movement is done in one fluid motion, in time to the music, and the vocalist's rendition. The camera operator needs to move at the correct speed to match the music, and they need to know when to start the move (which may be at the exact instant the vocalist commences to sing, or at the moment the music begins). They also need to present the first frame to match the one that has come before from another camera, and to maintain a smooth transition they need to tilt, pan and zoom at exactly the same speed as the music, knowing the direction to take on the floor as well as finishing the shot on a perfect frame of the vocalist, and be in focus. The shot will end exactly on the end of a bar of music, or when the vocalist stops the note. The camera operator is also aware of how their shot fits with the camera shots on either side of the one they are executing.

In all of this, the camera operator needs to be aware of every other camera, and every other piece of equipment, so as not to crash into them. They also need to make sure they don't overshoot the set, or throw shadows on the set or vocalist during their move. If the vocalist is using a handheld microphone, they have to make sure their final close up doesn't frame the vocalist with the microphone dominating the shot.

In summation: Professional Reflective Practice of the multi-camera operator

The description above, of just one shot in a series of shots that are undertaken by a team of cameras, may be on the screen for just seconds, depending on the rhythm of the music. Fitzwater, who has worked in most genres including music, described what he believed were the important skills and attributes of a senior camera operator as:

> A person first of all who can lead a team. The team might be two people, two camera operators on the floor. It might be eight, ten. It might be on an OB of thirty cameras. The senior camera is a leader who, first of all, can operate and practice all the craft aspects of their particular skills. Their manual skills are; without question they are at the top of their form. They also have the ability to add to a show. They are aware all the time, they're looking around beyond their camera at how the rest of their team are performing, but also can offer a better shot perhaps, or see a moment perhaps that will transcend the director's wishes (Personal interview, Aug 20, 2008).

The most important element described by Fitzwater is the skill to transcend what the director wants. It is evidence of a camera operator taking the director's intentions, as a guide to self-direction. A director, who can communicate their intentions, and a camera operator with a set of consummate masteries, takes the narrative to another level in collaboration with the team. In this way, the narrative is happening on two directorial levels. Fitzwater's description of a senior camera operator, and the analysis of the role during professional reflective practice highlight the existence of intellectual strategizing during a live production. As outlined previously, Aristotle defined productive intelligence as, "the reasoned application of technical skills" (2000, 174). This form of intelligence, defined as *phronesis* (169), or practical wisdom, "provides guidance to one's dispositions to act" (174). In this way, creativity guided by intelligence, as wisdom, results in innovative outcomes both academic and practical. In live television this form of creativity presents as aesthetics, through reasoned strategizing, derived from a set of consummate masteries. The set of consummate masteries, derived from dispositions, as inherent attributes and learnt masteries are developed and enhanced through repetition and recitation. The only place this learning can take place is during the live production process, as the strategies based on recollection of memories during actions 'in the

moment', and into the future. It is clearly evident that this form of intellectual creativity cannot exist in filmmaking.

Therefore, with the theoretical underpinnings presented in Chapter 3, the following section aligns the key elements, as inherent attributes and learnt masteries that together form the intellectual creativity of the camera operator. First and foremost, as described by Fitzwater above, the ability to transcend the director's wishes is a key element of time-future. Furthermore, this ability is a consummate mastery attained over time, and if one thinks about it deeply, it is a place in time that cannot be seen by the entire team. It is in the memory of the practitioner (in this case the camera operator), recalled in an instant, and gone so quickly only a few observe it. It sits between the director's call, and the time the vision mixer takes the cut. It is a strategy so minute only the people in the team, who are directly involved in the 'knock-on' effects (director, vision mixer and the camera operators on either side of the cut), in time-future will know it has happened. And as it is observed, those team members will adapt their strategies to suit. This is a prime example of the theory described earlier, as metis.

Based on my knowledge of camera operation, and in my position as a professional reflective practitioner, the directors at the harness racing had little understanding of the direction process. The situation presented absolute evidence of self-direction, or metis at work. Metis, as a form of intellectual cunning, is 'knowing' that comes from experience. It enables people to alter strategies in order to continue on with the chosen outcomes. It may not appear to outsiders that the processes taking place in my role as a camera operator, during the harness racing, was creative problem solving. However, as with any camera operator in a live multi-camera situation, presented with all the factors of the race including distance, speed, focus, framing and overall coverage, I was constantly analysing the instant, and realigning (albeit whilst maintaining framing and fluid movements) the coverage for the best results. Throughout the race, the timing of all the elements of the camera including panning, tilting, zooming, framing and focusing were also being manipulated and redefined. The timing of all the elements presents as aesthetics through reasoned strategizing, or intellectual creativity, derived from a set of consummate skills and attributes learned, as part of the field of live television.

The production phase of any multi-camera program throws up constant challenges. Due to the live nature, and the need to align all the elements of a production, directors are well aware nothing goes to plan, and the ability to work with the team, based on established outcomes, provides grounding for compromise and change. The compromise and change, defined as strategies by the collective, is metis. Letiche and Statler quoted Detienne and Vernant (2005, 1), when they described metis as "…a type of intelligence and thought", suggesting a rational process of deliberation. Furthermore, metis acquired from years of experience "is applied to situations that are transient" (1), in just the same way as the elements of television shift and change due to its live, and instantaneous nature. Therefore, metis as intelligent action is an intrinsic part of time-future, within the field of live television.

The process of rational deliberation as intellectual strategizing, allows each member of the team, within the field of live television, to go in the same direction with the same goal in mind. The process cannot be undertaken unless the crewmember has attained the skills and attributes applicable to their role within the field. Therefore, in order to go in the same direction and arrive at the same place, further skills and attributes that make up a set of masteries employed by the camera operator are outlined below.

To begin, the quality of communication that occurs in the pre-production phase is crucial to the production outcomes. More importantly, succinct and precise

- ➢ *Communication* as set out in the learnt masteries, along with established communication techniques that employ,
- ➢ *Television speak*, outlined in the theories as the language of the field, plays a major role in the live production phase. The language of television provides a platform for communication and includes established terms such as camera shot sizes and movements; to hand signals used by floor managers for on-air personnel:
- ➢ *Experience* of the language of television and its use is critical to live communication with the entire crew. Split second decisions are an intrinsic part of making live television; not just by the director but also by all members of the crew. The decisions can be conveyed aurally, such as through the talkback or visually such as in the form of a hand signal. They can also be visually conveyed

in the movement of a camera which may need to reframe to produce a more effective emotion from the coverage; for example, zooming into a tighter shot to show intense pain on a persons face. As discussed,

➢ *Focus* is vital. On reflection in my role as a camera operator, focus is achieved by:

➢ *Knowing the processes or systems* so explicitly that you can free the mind of clutter. This also comes from:

➢ *Experience* gained as part of the live television team. Freeing up the mind and experience also enables innovation to take place, with creativity being brought to the fore, as it is needed, to add to the production and solve problems as a form of metis in time-future. However, the collaborative effort or,

➢ *Teamwork* is vital to enhance results, as each member of the team contributes their own consummate skills and attributes to the production. Teamwork, collaborative effort, the social collective or any term that defines embodiment or immersion unites the individual and their consummate skills and masteries with all the other people at the same time and in the same space. They move with purpose like a shoal of fish adapting to outside forces. The strategies employed by a unit or the entire group seek to achieve one gaol, the purpose, which stays constant. Another key point is:

➢ *Anticipation.* For example, as I knew how the horses moved around the track during the harness races, I could anticipate strategic moves. As I knew the particular length and start point of each race and the movement of the horses as they travelled the track, I could produce a fluid narrative rather than fluctuations of movement causing the visual narrative to falter. In this way the televisual narrative of the race began to work in a series of processes or systems. As I gained experience of the best coverage through an understanding of the races and the ultimate camera set up,

➢ *Time-future* within the team began to occur with ease.

The illustration that follows is based on professional reflective practice, qualitative interviews and observation, and presents the same findings in my capacity as a vision mixer. I worked for six years as vision mixer at the Australian Broadcasting Commission (ABC), Network TEN, and as a freelancer. I attained Senior A Grade,

the highest grade available in commercial television in Australia. I also worked in London as a director/vision mixer with Sky News.

Professional Reflective Practice and the role of the vision mixer

Vision mixers work on simple tasks during less complex programs until they are highly knowledgeable. They do not work on live productions until they are competent working on pre-recorded shows. Their skills, along with personal attributes including reliability, focus and self-discipline are built up by recitation of systems found in a variety of television genres. Through constant and total immersion inside the live television habitus, vision mixers like the one interviewed are highly focussed, producing a seemingly effortless output. The outward appearance belies the intricacies of the role, and the consummate skill required to stay in tune with everyone and everything. For the vision mixer, time, and the aesthetics include all elements of the televisual experience. In this respect the vision mixer is multiliterate, dealing with sound, vision, light, movement and all these elements repeated over and over, through every other member of the team.

The knowing, and recalling to memory of actions, as outlined above goes deeper than first anticipated. I have found that my understanding of multiliteracies, and how best to utilise them has developed over many years. My experience began at High School while studying art, and continued through art school to my first job in television as a continuity audio operator, at the ABC in Hobart. The role of continuity audio operator began in the early 70's, and entailed working with a continuity director, a live voice-over presenter, a telecine chain and operator, which gave us access to programs on film, a 2" quad videotape machine, three microphone inputs and a record player. I learned to operate the system, which involved all the equipment described previously, through repetition and recitation. Once I had mastered the system (of tools), I was able to move into the recollection (of memories) without thinking. As I gained more experience of the field, and could use my skills and attributes without thinking, I was able to be more creative. This was due to the fact I did not have to concentrate so much on the system as it was second nature to me. I could put more energy into the aesthetics, as I had the skills and attributes to be more exacting and selective in my use of time and memory. The skills and attributes

I learned that enable me to have consummate knowledge of my role are described below. The first was teamwork.

Teamwork, or more precisely the collaborative process of live television was number one because we all had to do our jobs to the split second, as a fully synchronised team. Organisation was needed in order for me to find the appropriate record (LP or EP) to run under the voice over, which augmented the atmosphere of the program. In order to function successfully as a continuity audio operator, the need for invention, and an awareness of how best to utilise multiliteracies (here we were working with language as dialogue, music, images, written text in the form of graphics and timing) was required. Knowing how to manipulate multimodes of communicating was paramount in achieving the prescribed outcomes. 'Knowing how' to make sure the music was cued-up on the right in-point, and with the line input down, in order to mix up the music at the right speed, and to the right level; ending the music on time, along with the right emphasis was standard procedure during live programming. By the time I had completed six months of on-air audio continuity, I had developed a repertoire of knowing, as an individual, and as part of the collective. Learning new roles, and adding to my list of proficiencies enabled me to act 'without thinking'.

In respect to my position as a vision mixer, I did not think about my work consciously, however I must have reflected on it subconsciously. For example, I learned to feel the right speed of a mix between one camera zooming in, and another that may be craning up and zooming out, during a dance or music. I learned to feel the cut from one source to another by the emotion of the piece. I learned to build visual effects to compliment, or empower the vision and sound during promotional packages, such as movie trailers. I learned to feel the colours that went with the program, and I learned to work with lights, and the changes in lights to evoke feelings. To this end I realised I have always been a reflective practitioner, performing an action, and looking for solutions to problems. I also discovered that any change of action on my part, had implications on other practitioners.

As a vision mixer you are required to set up chroma-keys (e.g. a news reader keyed over (placed) a still or moving background with the use of blue or green screen). As a vision mixer you need to work with the camera control operator (CCU), who is the person who controls the exposure, contrast and correct colours of the camera, the

lighting director, and the camera operator to set up chroma-keys. If the lighting director makes changes to the lighting, the CCU operator may need to adjust the brightness, contrast, or possibly the colour of a camera's picture if the lighting director has added coloured lights, or coloured gels to the scene. Due to these changes, which may be miniscule, the vision mixer would need to adjust the chroma-key to make sure it is 'clean'. For example, a clean chroma-key means the newsreader does not have a blue or green edge around them, or the background isn't showing through the reader. Every member of the team is trying to achieve quality in the aesthetics of the program. Over time experience provided me with a consummate set of masteries that enabled me to perform my role to the highest level. The skills and attributes that I learned were:

• **Teamwork** during time-future
• **Organisation** of systems
• **Creative timing** as aesthetic masteries
• **Multimodal Design** in the use of all televisual elements to as visual effects to compliment or empower the programs narrative
• **Visual and aural literacy** made up of a camera shots moving or otherwise, lighting that was contrast, brightness, colour and movement, text that was the font, bold, italic and its colours, and sounds of all kinds.
• **Analytic** as the movement and flow of a program to emphasise the emotion and the mathematics of digital effects including the speed of a cube; its trajectory and where it begins and ends, and how it works with sound.
• **Creativity** to improve my conceptual skills. I built on my knowledge and tested them to achieve the best results.
• **Focus** during live situations that were not scripted
• **Flexible** to change course in a split second. Such as a crash during a race, a light blows out and destroys a chroma-key setup, or an actor forgets to sit down when they are supposed to. You also need to be flexible with your director, and know when to move without direction and when not to.

The vision mixer and creativity

Reflecting on the role of the vision mixer as opposed to that of an editor, establishes the discrepancies of the perception seen in the creative input and output, found in the two roles. According to the Australian Governments, Department of Immigration and Citizenship, Australian Skills Recognition Information, the job description for a Film and Video Editor is someone who "makes and implements editorial decisions regarding mood, pace and climax of films, television, video productions and commercials" (2536-17). The entry requirement for an editor "is a bachelor degree or higher qualification". According to the Skills Recognition Information a film editor requires: "high levels of creative talent or personal commitment and interest as well as formal qualifications" (2010). In comparison a Vision Mixer is a subset of a Television Equipment Operator (4992-15) and the role is described as a person who "operates television equipment to record, edit, mix and prepare material for broadcast" (2010). The description of a vision mixer comes across as a menial task of 'button pushing'. The creative input and experience required while working as a high-grade vision mixer, is totally overlooked.

However, experienced directors interviewed for this paper add weight to the creative input of the vision mixer. As Fitzwater states:

> A vision mixer is somebody who could anticipate what I've got on the script. I've got all the cutting points marked. However a good vision mixer can often transcend what you've put there and offer suggestions. Maybe drop shots, find extra shots that they've spotted out of the corner of their eye and you may not have been aware of, ah, yes, we can add that shot or drop those two to give a much smoother flow or more emphasis on that line (Personal interview, Aug 20, 2008).

Anticipation of a script comes from experience, and from working with a particular director; learning to predict a cut, knowing their directing style and thinking as one. Over-riding a director, and transcending a director's interpretation of a script may also arise due to a director's inability to perform their role. During the interview with Johnson, who is a freelance vision mixer, he noted:

> In cricket, the main [problem] is when the bowler sends the ball down and it goes past the batsman to the wicket keeper. Quite often the

director will call a cut when you're safer staying on the same camera (Personal interview, Nov 26, 2008).

In addition, director's can cause problems for vision mixers in the way they communicate. Johnson explained further saying:

> Some director's can be really challenging to work out when they're trying to get you to cut because they're say something like "Ready one, one, one, one, one, one, one, take". I find that frightfully annoying (Personal interview, Nov 26, 2008).

Any inefficient member of the team stands out, whether it is a director or a camera operator. While on the other hand good vision mixers often become, "a little bit more invisible" (Anonymous, personal interview, Oct 27 2008), as indicated by one of the interviewees who is a highly experienced sporting director. A director knows they can rely on a good vision mixer, with the same respondent talking about his expectations in conversation with his mixer saying: "… I'm not going to call that shot. You get me onto that follow camera otherwise you're not doing your job" (Anonymous, personal interview, Oct 27, 2008).

The contemporary notion of television professionals as technical operators, rather than creative professionals, is compounded when vision mixers describe their part in creating television in such basic terms as: "My role on the day is it to cut the cameras and the replays without getting it wrong" (Johnson, personal interview, Nov 26, 2008). This descriptive lends little to the important role played by the vision mixer. Johnson then went on to describe his role further as saying, he needs to keep "an eye on everything that's happening, so that if say a camera drops dead I can pick it up before I take it and cut it to line" (Johnson, personal interview, Nov 26, 2008). In this respect it is evident the vision mixer is anticipating the cut, while working closely with the director, to produce the visual narrative. Another industry professional that relies on a good mixer, confirms the vision mixer/director relationship, and the capacity of good vision mixer to anticipate by adding:

> The switchers, the switchers just protect the director… If you've got a really good team working in front of you, you probably don't notice the vision switcher as much…you watch what they're doing on the

preview monitor and they're always one step ahead…It's really quite amazing (Anonymous personal interview, Oct 27, 2008).

Johnson went on to speak about his role and the connection he had with other team members saying:

> I need to have an idea of what everyone else is doing, and what problems they could face if they can't see everything that we are sending them. I also have to have a rough idea of their job so I know roughly, how long it is going to take them to do something when they're asked to (Johnson, personal interview, Nov 26, 2008).

It is evident from the interviews with Johnson that he was working as an integral member of a large team, utilising organisation, knowledge of systems, attention to detail, focus and time-future throughout the entire game of cricket. Johnson's ability to work in time-future as part of the field of live television comes from experience, and knowing the systems that are his specialisation and those of the entire field. As he explained:

> I've got a system but it's been born probably out of how I was trained… My system normally revolves around keeping everything as close to my body as possible that I'm going to use all the time. So why you've got an enormous mixer that's a metre and a half across I try and keep things within easy arms reach so I don't have to keep reaching and stretching to get them (Johnson, personal interview, Nov 26, 2008).

Johnson, having learnt the systems of live television through repetition and recitation, was free to operate in time-future. As established earlier in the way we learn, pure memories or "representation of a thing formerly perceived, acquired, or learned" Ricoeur (2004, 7) relies on unobstructed recollection thus enabling an individual "to withdraw [them] selves from the action of the moment" (25). So much so that Johnson, as stated earlier, used his left hand to cut the "cameras towards the left hand side of the mixer" (Johnson, personal interview, Nov 26, 2008), while his right hand was used to set up effects. Also, during observations he managed to spend quite a bit of time watching the networks output while setting up the effects, and cutting the interviews.

One of the greatest misconceptions of persons who do not understand the live television field, or habitus is the perceived notion that vision mixers and other crewmembers are under constant direction. As outlined, and validated above, this is not correct. The director may appear to be giving absolute directions to their crew, with the crew responding in a mechanical manner, however all the crew operate on several levels through supervision rather than control. Individual crewmembers are also self-directed, and utilise the set of consummate masteries relevant to their role, in collaboration with the director and the rest of the team. This is the fundamental difference between film production and live television. The collaborative environment of live television does not lend itself to a director being able to undertake all the tasks required to 'make live television', as it happens in real time, or time-future.

The level of autonomy and initiative of how, when, why and what a vision mixer does during a production is reliant on the director, the vision mixers experience, and relationship with the director and other crewmembers in particular camera operators, and the genre of program being produced. Different genres have different skills attached. It is interesting to note that Johnson who works entirely on sport avoids "drama like the plague…" because:

> It's a little bit, maybe not confusing, but I don't feel comfortable operating drama. I've spent my whole career learning how to do sports, and cutting off a script I find really unnatural to me. I'm happier to follow the play when it's unpredictable, but I hate the idea of cutting to a set of predetermined cameras all the time (Personal interview, Nov 26, 2008).

In this way Johnson's lack of understanding of the language of television drama suggests he sees the shots in drama as being predetermined by the director. However, according to Fitzwater, in his role as director, a good vision switcher "is somebody who can interpret what me, as the director is asking for" (Personal interview, Aug 20, 2008). For example, in drama Fitzwater said:

> A senior vision switcher is someone who has the ability to respond to the need of the moment…transcends the manual skills – button pushing; sadly that's how they're always seen because they do press buttons and operate levers. But it's far more than that. It's the timing;

knowing at what point in a rise of an actor, say standing up from a seated position; at what moment to press that button. Not just press the button. I often think it's the one third or two third rule, in that movement. And a good vision mixer knows that instinctively through years of practice. They can foresee problems with a camera; the camera may suddenly have a mechanical problem with its zoom. It might have, it may go over a cable due to some problem on the floor and it is presenting a shot that is not acceptable – the vision mixer will over ride the director; as they should; and you know, make sure it is a seamless presentation on the screen (Fitzwater, personal interview, Aug 20, 2008).

The fact that vision mixers over-ride the director verifies they have a large part to play in the creative process. The ability for a vision mixer to "improve the creative input" (Skillset 2008) needs to be recognised and understood, as a vital part of the role they play in making television.

In conclusion:

Working in live television, employing time-future utilises two levels of consciousness. The first, as unconscious memory or recollection described by Polanyi (1966) as tacit knowing, suggests we know "more than we can tell" (4). It is during the phase of unconscious recollection of memory that innovation takes place. Bergson proposed that memory is recalled spontaneously as an image. However, "… we must be able to withdraw ourselves from the action of the moment" (Bergson as quoted by Ricoeur (2010, 25), in order to retain memory in its purest form. It is in this way that individuals working inside the live television habitus, have particular dispositions that enable them to work as part of a highly complex team. During personal communication with Johnson, he described these depositions in his work as a live vision mixer on large sporting events as: "…a natural reaction; when someone is new to it, it's very clear that they're sort of reacting rather than anticipating what's happening" (Personal interview, Nov 26, 2008). The natural reactions described by Johnson are either intrinsic dispositions, or they are learned through embodiment in the field of live television.

The second part can be described as conscious memory. Spinoza adds to Bourdieu's theory of habitus and practical reason, by asserting "the mind and the body act in concert" (Spinoza quoted by Nobel and Watkins 2003, 525). In this way our minds

are not merely passive receptors, for "through reason, we can try to understand our actions and act accordingly" (Nobel and Watkins 2003, 525). Conscious memory is also apparent in how knowledge is gained inside the field of live television, for although knowledge of systems gained inside the habitus allows unconscious acts, individuals working as a team, are aware of each other. Just as Colin Dallimore pointed out during a live cricket match when he said: "You've really got to be on the ball for everyone's sake not just mine for myself but other people are relying… on that" (Personal interview, Nov 26, 2008). Dallimore was conscious of the team, ready to jump in if problems arose, just as the rest of the team were. In this way problems are resolved through metis, as innovative change, and adaption to difficulties as they arise.

In order for the theories presented in this thesis to work as intellectual creativity the aesthetics of time-future need to be present. Time-future based on the aesthetics of time, is only found inside the field of live television, and not film. Time of the present, and into the future happens within the intellectually creative, real time actions of the live television professional. Therefore, the pedagogies employed within the present university system, as supported through my analysis in Chapter 2 provide the basis for intellectual creativity to develop.

As outlined at the beginning of this chapter, Chapter's 4 and 5 examine observed data to highlight how the field of live television works, and how during time-future, intellectual creativity occurs. The following chapter looks at three roles including the EVS operator, the director's assistant and the vision mixer. It examines these roles as individuals working in collaboration with a large team. Finally, a highly structured immersive teaching model highlights the learning outcomes, in contrast to a typical film and television degree, with access to numerous electives, at an Australian university.

Chapter 5

Examining the data: direct and participatory observation and evaluations

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Introduction

Chapter 4 examined the multi-camera crew role from a participant observation point of view, and highlighted the collaborative process of live television. In addition, the creative role of the vision mixer was analysed through professional reflective practice supported by the professional respondents. It also showed how crewmembers seemingly totally directed, are in truth self-directing, albeit with the director's visual interpretation in mind. It also aligned the processes involved in the live production, the camera-operator's role, and the vision mixer's role to the theories of learning put forward in Chapter 3. As discussed earlier, metis as a form of cunning intelligence, or intellectual reasoning happens in an instant, within a team environment and cannot be observed. Metis is employed by each member of the team to resolve individual problems, and the problems of the team, in order to arrive at a prescribed outcome.

Although the previous chapter has touched on the collaborative output of the team, in real time, this chapter will strengthen the argument for the existence of intellectual creativity of the individual, and the team, within the field of live television. It highlights that the aesthetics of time, defined as time-future, cannot be seen by outsiders, and it makes it clear that time-future cannot exist in filmmaking. It will also demonstrate the need to re-think contemporary pedagogies, in response to the needs of industry, and validate the existence of self-direction by each crewmember observed. In addition, an immersive degree is examined, and teacher evaluations from that degree are contrasted with a contemporary degree at an Australian university. The latter highlights the learning experience felt by the students of both degrees, although the teaching practice was delivered the same way, the contrast in comments is palpable.

- *Direct Observation*

The beginning of the chapter examines the second method employed as direct observation of a live cricket broadcast, in order to examine the roles of the EVS operator, director's assistant and vision mixer. Observations during the cricket match support and validate the creative orientations of an individual, and those of the collective. It also tests the hypothesis, and extricates sets of consummate skills and masteries found in each of the roles examined. The length of direct observation of the match was approximately three hours of continuous monitoring, and included production setup, pre-recorded programming, and the live-to-air broadcast. The interpretation of the observations was *descriptive* for; what are the skills and attributes required for the job? And *evaluative* for; what type of instantaneous interaction is required by the participants, and where does intellectual creativity take place? Emphasis was placed on television as a spontaneous medium, with the ability for practitioners to 'think on their feet'. The observation process wasn't intrusive, as it focused on production processes and procedures, rather than the cultural or social environment of the outside broadcast.

- *Participatory Action Research*

The second topic, as Participatory Action Research was analysed during an immersive training model at the New Zealand Broadcasting School, over a seventeen-week intensive multi-camera production course with twenty-three students. In addition, student evaluations of teaching practices from a contemporary Australian film and television degree, contrast those of the degree at the New Zealand Broadcasting School. The model employed at the New Zealand Broadcasting School validates immersion in project-based live television events, as having a significant impact on positive student outcomes.

Direct Observation: live cricket broadcast

Firstly, direct observation of a live cricket broadcast provided data for examination of three crew roles. The roles were the EVS operator, the director's assistant and the vision mixer. In addition to the direct observations, qualitative interviews were

conducted with members of the crew who were under observation. The interviews helped clarify the observation process, and provided greater understanding of the data gathered.

On Sunday 26th October 2008 I joined an Outside Broadcast (OB) truck in Brisbane for the cricket. The crew call was for 0730 although the first ball was not expected until 10am. I arrived at the ground around 8.30am, and the crew was already buzzing. I introduced myself to a few key people including the director (Dir.), the vision mixer (VM), the director's assistant (DA) and three EVS operators.

The OB truck was quite new, and a few of the crew commented on the layout; referring to the inputs and outputs of equipment, and communications systems, leading from different parts of the van to the cricket ground and back. The 'newness' of the van meant that the crew were not comfortable with the setup, and would need to acclimatise themselves to the vans environment.

> *The first point that needs to be discussed is the 'newness' of the OB van, and the way in which all the equipment is integrated as part of the van's layout. The environment of the van, and the way in which each crewmember works as part of live television, is grounded in knowing the systems. If the systems found in the van (or studio) are new, the crewmembers need to become comfortable with that environment before they can use their skills and attributes flawlessly.*

> *The systems found inside the van include the inputs and outputs of all the equipment. Depending on the role of the individual, it is necessary to understand systemic workflows. For example, if I push that button in that place on the desk, the output (either vision or sound) will appear in the places (on preview or on-air), I have decided it should. In television, to preview an output is to hear it, or see it before it is put to-air. This function is used to make sure what you want to go to-air is correct. It is a fundamental part of television production, and happens in all the roles being discussed, albeit in different forms.*

The OB truck had arrived on the back of a semi-trailer, and had been unloaded and set up with power for the gear, and the required a/c's to keep it cold so as not to overheat the equipment, or the crew. By the time I arrived the truck was attached by numerous electricity, audio and video cables to a large box that is a permanent fixture in the cricket grounds car park for such TV coverage's.

> *The blueprint for all the cables is very intricate with every one providing a vital link between equipment, personnel or both. The cabling between personnel provides a communications system that is essential to the success or failure of the live production. This is referred to as the comms. or talkback; with personnel having access to each other over open microphones and speakers or by headsets or cans, as they are known.*

The OB truck had three separate compartments. The first compartment housed the EVS crew, who until the advent of digital hard drive recording were classified as videotape. There were four EVS operators, with a senior operator or supervisor overseeing the entire process. When I first met the operators they were waiting for the supervisor, and were eager to talk, as they had not had tasks allocated yet. They all had been in the industry for many years and had come from videotape. And although they operate EVS machines the area is stilled called 'tapes'. Also the area had shrunk in size, as the size of the technology has decreased.

The second, or middle compartment was the main production hub. The director and vision mixer sat at the front desk in this van. There was room for a director's assistant on the front desk, however during the coverage the director's assistant sat up the back. This seating configuration gave each crewmember more room, as space in a van is at a premium. The final compartment housed the audio crew. As observations were centred on the production team and EVS there was no requirement to visit other parts of the OB set-up. The main production area had a bank of video monitors (TV screens), most of which were wide screen (16:9). The bank of monitors included 16 camera outputs, which had been set-up to the director's and vision mixer's requirements. I found it confusing, as I needed to scan the entire bank to find a particular camera's output.

The reason I found it confusing was due to the fact I did not understand the system being used. The layout enabled the director and vision mixer, as well as other crewmembers, to 'read' the previews and output of each monitor at a glance. The system that had been established enabled all the users to employ as little energy as possible to recognise, anticipate, and produce a fluid televisual narrative.

In multi-camera productions, cameras are generally set up from left to right with camera 1 on the left, followed by 2, 3, etc., with the highest numbered camera on the right. This is done to provide a foundation for the director so they can 'picture' the placement of the cameras. During live situations where the cameras are moving around a lot, the configuration aids in the smooth choreography of the cameras on the floor; hopefully alleviating cable tangles, and other cameras in shot etc. Due to the number of cameras, this set-up was not possible, as several cameras were not fixed, and could change positions.

The monitors in the van were setup in line from left to right, appearing to be grouped, possibly due to the way in which the cameras are used for specific purposes. For example, the major cameras that are used continuously throughout the game are grouped separately from cameras used specifically for replays, or shots of the crowd.

On the other hand, particular cameras used for replays from various angles, crowd shots and interviews with coaches, players and the like, would be grouped separately in sub systems. For example, all the cameras used for replays, and not being used for the live 'cut', would be in a sub group.

On the bank of monitors there were four EVS outputs and two videotape machine outputs. The EVS machines were labelled A, B, C and D, and were called Alpha, Bravo, Charlie and Delta. There was a statistics monitor; an emergency output that was another feed; an off-air (the program that was going to air from the station at the time); a big screen (on the field) and an in-house monitor; as well as preview monitors, and a character generator

output monitor used for statistics and other text such as team lists etc. The panel of monitors was approximately 3 metres wide by 1½ metres deep – approximately 35 monitors in all.

The EVS production area was the first area to be observed during the live cricket broadcast. However, in order to validate the observations of EVS operators and their role, whilst working on a live cricket OB, the latest Screen and Media (2008) training package provides a list of skills and can be found at Appendix 4 3.1. It is to be noted that the set of skills outlined in the appendix are aligned more to on-air videotapes than live EVS operations, during a program such as a cricket match.

Observation of EVS

The first role observed was the EVS operator. The skills and attributes which make up a set of consummate masteries for the role were established during observation of the area, analysis of industry skill sets, and through a qualitative interview with Colin Dallimore, one of the EVS operators observed at the cricket. The following observations, in addition to the qualitative interviews, demonstrate the existence of the set of consummate masteries.

In order to help decode the personal skills and attributes of a videotape/EVS operator, and arrive at a consummate set of masteries, first and foremost they must:

• Be a team player
• Be proficient in solving both aesthetic and mechanical problems whilst maintaining complete focus on the job at hand
• Be able to remain calm under pressure
• Be dexterous
• Be able to think ahead
• Have self-discipline
• Have a thorough understanding of editorial principles and produce creative output relevant to the program genre
• Be able to demonstrate a thorough working knowledge of video and computer

	based recording and replay systems
•	Have an understanding of music, timing, beat, pace and rhythm
•	Excellent time management and organizational skills
•	Be able to log accurate and succinct recorded material 'on the run' for replays and segments
•	Have the ability to responsibly perform tasks using personal discretion relevant to the programs brief
•	Have an above average knowledge of the program genre

The skills found in Appendix 4 3.1 along with those listed above were established as the foundation of the role, prior to observation.

Creative orientations, skills and attributes of the EVS operator

On my arrival, the director and vision mixer were both in the van with the character generator operator, setting-up the live broadcast. The director was concentrating on the allocation of camera shots, and where the cameras were on the ground. One of the main areas being sorted out was the communications to all cameras, and the [6]tally lights.

> *When the camera is put to-air the corresponding lights on the allocated monitors in the van will light up at the same time (E.g. Director: to a cam op – "Do you have a tally? You're getting 11's tally?" This means a camera has another cameras tally light, which is a problem because if the director and vision mixer glance up and see the wrong tally light on a monitor when they both believe another camera is on-air, it causes a breakdown in the system.*

> *In addition, the camera operators know when their camera is on-air because they can also see the light inside their viewfinder. Cameras use this function to move to a new shot quickly, after their camera has been cut away from, and are off-air. This function is very important to a camera operator during times when the ambient noise is very loud, and they cannot hear the director*

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[6] *The tally lights are the red lights on top of the cameras that show they are on-air on the vision mixer.*

clearly. It gives them a window of opportunity to find a new shot, without being caught on-air, and without a composed picture.

As described above, the communications system is vital to live productions, and with that in mind systems checks are made to prevent avoidable problems, and a poorly executed production. It is during the pre-production phase that all system checks are made. One area that relies heavily on communication with the director is EVS. EVS is the first role examined as part of the collective.

Television Videotape/EVS operators work on live, pre-recorded, and recorded as live to-air programs. A videotape (VT) operator is required to record sound and vision onto a tape machine or disk recorder, while an EVS operator uses a computer-based system. The computer-based system in use in Australia is the EVS, which uses a hard drive to record the output of the vision-mixing desk or isolated inputs such as a camera.

With the introduction of the EVS, and other similar hard drive record and playback systems, a large number of live videotape personnel have had to learn new skills to keep their jobs. Based on the cricket observations, I asked Colin Dallimore an EVS operator, what new skills he had to learn going from videotape to EVS. He replied: "A whole heap of new skills; the EVS box is a whole new thing to learn to get your head around" (Personal interview, Nov 26, 2008). According to Dallimore, the introduction of digital recording onto hard drives has made certain tasks easier as, "…it's always recording so you can get a replay organised a lot quicker". However, it can also be complicated. For example:

> You actually do a replay from one [EVS output], and while that replay
> is ready, or you're rolling that one out you can get another one;
> another angle from a different camera that you've got in your box, to
> give a reaction or second angle (Personal interview, Nov 26, 2008).

In this respect operators are multi-tasking at a higher level of intellectual creativity. New technologies may add to production value, however they make certain aspects of the job simpler, while also challenging operators to be more focussed. The EVS system allows an operator to work with up to four camera inputs, while as a tape

operator they would generally operate only one videotape machine. As a videotape operator, they would only need to focus on 25% of the input generated by an EVS machine.

The supervisor (senior operator or videotape director) allocated a particular operator to a particular machine, as each person is required to perform varying tasks in which experience plays a big part. He also set up the talkback system to other parts of the van, during which time he found a problem with the volume, and called for technical support.

> *Communication systems, and the efficient and succinct use of those systems are vital to a live broadcast. A crewmember under pressure, due to lack of communication, loses focus. In moments where focus is lost, mistakes are often made, and new strategies need to be instigated to keep the production 'on track'.*

Here we return to the set-up of the systems inside the van, and the observation of the EVS operators at work. The panels in front of the EVS operators included computer readouts of each machines setup, and the quad split; or 4 camera inputs, which had been selected to be recorded by the director, talkback monitoring panels, and vision monitoring panels. This allowed the operators to select what they listen to, who listens to them, and what they can see on the screens in the truck. Permanent feeds to the monitor bank are the on-air output called Main Program, EVS outputs named Alpha, Charlie, Delta etc., and EVS Preview. Up the top of the truck, above the operators, were two videotape machines. During the game a direct recording of the vans output is made onto both tapes as back-ups.

> *The use of systems is important to all aspects of television. A system allows people to gain confidence with the equipment through repetition. Repeating the same actions gives the user two outcomes. Firstly, it frees up thought processes to enable greater creativity, and secondly, it enables greater focus. The repetition of a system also allows the user to 'back track', and find where they went wrong if they make a mistake.*

During live events, VT/EVS operators are required to log information of recorded highlights and other segments for future use, and advise either the VT supervisor, or director of replays that enhance and add to the programs content. An operator will use logged material to edit packages 'on the run' for replay later in a program, for example edited highlights of a days play at the cricket. Colin Dallimore, an experienced videotape operator, and now EVS operator, explains the system whereby they logged clips throughout the cricket match:

> When we actually log each clip, the ones that we need to log, we store them in the EVS and we actually give them numbers… It's a key word list. They're called keywords… they would have bought a key word list on the day with the tape inserts, which would have all the basic cricket ones. So you've got different numbers for events. A four will always be a four; you know different things. Run outs…might have 88…we know the order we do them in, we usually do batsman, bowler and then what happens but for a run out it's different. It's just different things for different issues. If it's a wicket we have to put an extra little mark on it, three little stars. If it's a boundary we put two little stars on it so they can pick it up easier and cleaning up the list later on (Dallimore, personal interview, 26 Oct, 2008).

While expanding on the notion of consummate masteries, the use of *systems* gained by *experience* during a live production, enables the EVS operators to locate segments, or clips of good 'television moments' for later use.

> *The ability to multitask and remain focussed is evident. An inexperienced operator who does not possess the set of consummate masteries could not work in the environment. It must be noted that the system described above, while happening in real time, is happening at a frenetic pace. If as a viewer we consider a game in progress, our focus is merely on one aspect as presented to us by the broadcast. However, an EVS operator who may be looking after four camera angles is sifting through four sources of information, logging, tagging, reviewing, and presenting footage for replays. The speed and dexterity belies the creativity that is taking place, as each operator sorts the vision to enhance the director's narrative. The systems provide a basis for organisation, with experience and focus providing the freedom of thought to operate in time-future.*

Due to the pace of sporting broadcasts, short hand systems allow the operators additional time to recognise exciting television. When I asked Dallimore what he was looking for he replied:

> You'd show one which is the most exciting angle and if the ground were going off we would try and sneak a reaction of the crowd going off or him raising his bat if he's got a 50 or whatever sort of celebration there is (Personal interview, 26 Oct, 2008).

In the EVS area, the three operators were under the direction of the supervisor who was sitting at the back in direct communication with the director. EVS 2, or Beta was the slomo machine (replays of catches or LBWs etc. which can be slowed right down), and therefore it only had two cameras going into its four inputs. The other EVS machines had four different cameras showing four different angles of the game, which were being recorded on each machine throughout the entire game. The supervisor watched all four machines for 'good replays', or the operators would offer up replays from the EVS machine they were operating. In seconds, the supervisor sorts the replays according to angle and coverage for 'good television', then offers them up to the director for replay. The director also had feeds of EVS in front of him, and generally would call for the same replay; at the same instant the EVS supervisor told him it was ready.

The ability for the EVS operators to judge if the machine they were operating had covered an exciting aspect of the game as it happened, is intense. This is due to EVS machines having the capacity to cover four angles at once. In addition to watching for highlights, all the EVS operators logged sequences on sheets beside them that were to be stored with key codes describing the action on the field. (E.g. 35 – miss-field; 42 – bouncer), and time code (an electronic marker for each hour/minute/second/frame of vision) for frame accurate recall later on.

> *In this respect the operators are required to be totally focused on more than one thing at a time, as well as being organised enough to log information on the run. When a replay is called they rewind and set an in-point for replay on the fly; judging the best point in the shortest time, to allow a number of*

angles to fit into the replay sequence. In this way the timing involved in the present, and into the future as time-future, becomes apparent.

One of the respondents talked about how he could focus on the *timing* by firstly, knowing the system, and secondly, knowing the game:

> I was a VT Director in England for six months on the county tour so I used to call all the replays from the replay truck and you really get to know timing. I'm telling you, you get to know things like basic stuff and I never thought about it until I started to talk to people about it. Even as a VT Director you get to gauge the amount of time between balls. So you know how many you can slot in. You know the guy hits one out through cover and by the time it comes back; you know if he's a quick bowler; he's walking back' you just get this feeling that it's going to be; you know; ten, twelve seconds. Better than that you get a feeling you can put in two replays. It's really weird; and you get them in by the time he three steps away from the popping crease and he's dissolving out [from replay] next ball. And that's the art of it; the art of it's the timing (Personal interview, Oct 27, 2008).

> *Each operator is so experienced they know the directors style, and the time it takes to fit in replays, and how many. This judgment of time and action occurs in seconds, with the communication between the EVS operator, the supervisor, the director, DA and VM so finely tuned the viewer gets what is termed, 'instant replays'. Although the actions of the operators may appear mechanical; every angle, speed of the replay, shot composition, in and out points, and thrilling televisual moment, is judged before the 'instant replay' takes place. More importantly, everyone involved judges it, and the output is a collaborative effort. All of this happens in time-future with all members of the crew thinking and acting in the present, and into the future. It is here that the live television habitus works at its finest, with intelligent strategies being devised and reworked endlessly to enhance the televisual narrative. All the crew are looking for the next shot, cut point, replay, and of course, the content.*

For example, at one point the EVS supervisor called the director with a package from Tasmania, as the commentator was talking about a player that was relevant to the package. The director set it up with the commentator, via his earpiece so the

commentator could throw to it. However, a 'good ball' happened during the time they were setting it up, resulting in the need to stay with the live play. With that the director commented to the crew: "Just trying to make TV" (PRP Oct 28, 2008). The language of live television was being spoken, albeit in a roundabout way, in as much as the EVS supervisor wanted to give depth of entertainment to the broadcast.

After the live broadcast, a personal interview was sought with one of the EVS operators. In addition, interviews with elites in the live television industry sought to validate the observations undertaken during the cricket broadcast.

EVS and qualitative interviews

The qualitative interviews also sought to substantiate the theories and provide evidence of how the theories, and the set of consummate masteries were established. Colin Dallimore, one of the people being observed as an EVS operator was included in the qualitative interviews. Validation of the set of consummate masteries presented on page 193 of this chapter are highlighted and discussed throughout the communication with the specialists.

The first element that arose was the need to know systems, and to arrive at the point of knowing the system; an operator needs to have experience. In the live television habitus, experience comes from immersion in the field, as presented by Zackariasson, Styhre and Wilson (2006) in their work on phronesis and creativity around video gamers. The authors conclude that phronesis is the, "detailed and practical understanding of a particular field" (Zackariasson, Styhre and Wilson 2006, 419), which suggest that, "this knowledge consists of acting from what one knows" (421).

As described above, the EVS operators at the cricket had a system. Prior to the EVS, and with the arrival of videotape, cameras used in the field for news stories known as Electronic News Gathering (ENG), utilised the Betacam videotape machine. One operator described how they sat down to find out how the machine worked:

> How do you exit an edit point? How do you mix across? How do you split edits on the run? How do you wind them back? How do you go forward fast? How do you this how do you do that? Once we had worked

> it all out same as 1-inch machines… Tim started developing systems and he called it ESEO…God it was amazing and he devised this system like an acronym. Ah, Entrance, Search, Editor, On (Anonymous, personal interview, Oct 27, 2008).

The ability to be creative in crew roles such as EVS and videotapes relies on knowing the equipment. Just like anything we may do from memory, repetition is often used to gain knowledge. As one of the interviewees affirmed:

> Editing had a system. You can't be creative; I don't believe; you can't expand on your creativity, until you've worked out how to use the equipment. So first of all you've got to be technical (Anonymous, personal interview, Oct 27 2008).

As discussed earlier, according to Ricoeur recitation is learned through repetition and at the point of recitation the knowing how can be repeated without having to "repeat the effort of learning again, of re-learning as such" (2010, 26). Henri Gouthier also discussed repetition and recitation, particularly in the arts. He saw the arts such as dance, theatre and music happening first as a performance that is distinctly different from the second part, which is the arrangement of the piece. In order to achieve a faithful arrangement of a piece, although innovative in its execution: "laborious training of the memory… and patient repetition" (Gouthier as quoted by Ricoeur 2010, 61) is required. It is in this way that learning systems and other learnt masteries through repetition; allow the execution of the recitation to take place. In respect to the live television professional, it is during recitation and operation of the equipment that innovative execution takes place, and as with dance, music and theatre it happens in time-future.

As discussed, television professionals who operate equipment generally set-up systems, which are either handed down or devised by the person who operates the equipment. Apart from the learnt masteries already established, setting up systems, and recitation of those systems provides the basis for other masteries to come into play. Having established skills and attributes including the use of systems, communication, focus, experience, organisation and time management, other elements, and those already validated can be drawn from the personal interview with Tim McDonald.

Tim McDonald, General Manager Operations Seven, began his career in television in the on-air room, and describes the key skills he needed for the job as, "…[relying] on accuracy, and skill and attention to detail" (Personal interview, Aug 26, 2008). He progressed through videotape operations to the level of Senior A. Grade, which is as far as you could go. I asked McDonald what skills he picked up along the way:

> I think possibly the greatest skill for me was probably attention to detail first. Second was clarity of mind under pressure. The third one was; and this is all experience based; but lack of fear. You know nothing fazed me. You could have a director screaming at you; you could have the whole control room of people saying, "What's going on, what's going on"? And your mind had to be focused on - I've got to get us out of this, this is what I've got to do. Invariably you've got some hairy situations, and the hairy ones weren't always caused by you. So attention to detail, speed, accuracy, I suppose accuracy of mind under pressure is probably another one and also I think your teamwork. Understanding really how to work as part of a team. Even though you were down the end of a communications system you were a critical part of the chain. And you see when I first started in television the tape guys were sort of you know very much, Oh, they're down the end of the communications system; and you know you get your booking from one minute past eight to one minute past five and that studio better get it's act together because they've only got me for a certain amount of time…You were sort of seen as bit of an elitist and so you had to perform. I think it taught me a hell of a lot about personal relationships and handling pressure; and my own self as well. Manual dexterity was another one. You know you couldn't be clumsy (Personal interview, Aug 26, 2008).

The quote above highlights and confirms several of the skills and attributes required by a videotape, or EVS operator to obtain the set of consummate masteries. The skills, or learnt masteries come from a set of inherent attributes, which may already be present in a person's character. These inherent attributes have been described as dispositions. In McDonald's case his inherent attributes include:

• Attention to detail
• Being analytical
• Having focus
• Handling pressure
• Having manual dexterity
• Accuracy

| • Self-discipline |
| • Experience |

The learnt mastery of *experience* enabled McDonald to operate with what he described as 'lack of fear'. In order to survive he relied on an unproblematic background, achieved through accuracy of mind, and focus on the role, to give him the tools to operate as part of the team in time-future. *Self-discipline*, established as one of the inherent attributes, is also seen as necessary to gaining consummate masteries.

Both Dallimore and McDonald, although having taken different directions in their careers, point to the need for discipline and focus while being on-air, as two of the key attributes they needed, to enable them to work as a television professional. Dallimore went on to explain further:

> Working in the on-air department was one of those things that was *[sic]* a huge responsibility for such an early age but you also had to be on the ball. You couldn't make a mistake that was the other thing. The discipline, mentally, was taught straight off the bat for me. You had to be there, you had to do it right (Personal interview, Nov 26, 2008).

Apart from having focus and the ability to go back over a system that may need to be fixed manually, Dallimore also added: "You got taught your priorities very early as well. If you're not organised, trying to do that you're hopeless: you're in a mess" (Personal interview, Nov 26, 2008). As validated during the observations, and through the qualitative interviews, establishing and following systems aid attributes, including organisation and attention to detail. As noted above, systems, or the way of doing something without appearing to think about it consciously, come from repetition and recitation inside the live television habitus. The unconscious act of doing, at the consummate level, enables all other masteries to happen, and it is at that point that innovation takes place.

During the interview with McDonald, I was interested to learn if he saw a creative component to his work as a videotape operator. He talked about the process of learning to edit as an "exposure to what [he called] picturisation...editing, not only

technically, but creatively" (Personal interview, Aug 26, 2008). He went on to describe editing as:

> When you first start editing you used a blunt axe and Band-Aids. As you get better and better you understand what works and what doesn't work, and I think editing as a skill takes a little while. It's almost as though what hits the cutting room floor has to be respected by your peers as well. People have got to know what effort goes into it to understand how hard it is (Personal interview, Aug 26, 2008).

The recurring theme of teamwork and systems became evident. However, in order to establish a set of consummate masteries for EVS and videotape operators, I asked Dallimore what he believed was an important part of being a television professional. He replied: "You've got to have it [discipline]. I mean, on a gig I might be part of the EVS team but I'm part of the broadcast team" (Personal interview, Nov 26, 2008). Dallimore saw the team happening on two levels. Firstly, the EVS team who contributed to the bigger picture, and secondly, the 'broadcast team' that involved everyone in getting the program to-air. He maintained that without self-discipline you could not do your job as part of the team. All of the skills and attributes discussed with the respondents, and during my observations always led to the importance of the team. And one of the most important members of the team, who is more often than not disregarded by people outside the field of live television, is the director's assistant. As the director's assistant and vision mixer work closely, both physically and within the team, they were observed together. The observations and confirmation of the roles were followed by the qualitative interviews.

Creative orientations, skills and attributes of the director's assistant

The second role to be examined, and a major player in live television production is the director's assistant (DA), or as sometimes known, the producer's assistant. There are a number of people in the production team who rely completely on the experience and working knowledge of the DA. The most important is the director. However, all the production crew rely on the organisation, accuracy, and focus of the DA to perform their role.

The role of the DA was analysed through professional reflective practice, observation, and a personal interview. The role of the DA can vary according to the genre, and the number of professionals employed on the program. The DA interviewed was employed on contract specifically for the live cricket OB. Due to this certain aspects of the DA role may, or may not be covered, particularly during the preproduction phase where a great deal of organisation and preproduction paperwork takes place. A detailed skill set is attached at Appendix 4 4.1, while essentially the professional director's assistant must be:

• Highly organised
• Meticulous
• Self-disciplined and have stamina
• Focussed and have the ability to multitask under pressure
• Mathematical
• Highly succinct and accurate in communicating information
• Creative when dealing with problems
• Attentive
• Confident
• A team player
• Computer literate
• Resourceful
• Analytical
• Flexible and adaptable
• Experienced

Contrasting views pertaining to the importance of the DA role are reflected in the words of a live sports director and a television professional, not involved in live broadcasts. The director had "…worked with some awesome DA's" who believed, "they're just your lifeblood, they really are" (Anonymous, personal interview, Oct 27, 2008). This description portrays a great deal more to the role than just picking DA's from, "elsewhere in our own business because DA/PA is pretty much an entry-level area" (Delahoy, personal interview, Aug 27, 2008). Once again, although industry professionals understand live television, it isn't until they have experience of the field, and are reliant on the collaborative effort that the true nature of the

language is understood. Therefore, in order to eliminate the misconceptions of what a director's assistant does, the data collected will point toward the true nature of the role.

Qualitative interviews, professional reflective practice and the role of the DA

The following direct observation, qualitative interviews, and professional reflective practice provide evidence of the consummate masteries described above. To begin, historically the director's assistant was a role undertaken by women. The suggestion that is an entry-level position is fundamentally flawed. However, it is noted that the position including many in the industry, has changed over time. More often then not, the move toward freelance crews doesn't allow the DA to participate in the entire production process. However, the complexity of the role of the DA is often misinterpreted. One point that is certain is that those members of the production crew, who rely on the DA during live television, find the DA a vital member of the team.

The role of the DA can be divided into two parts. The first part is the administrative work done with the production department and the director, prior to going to air or recording a program. They are responsible for timing scripts and rundowns, providing cameras with camera cards, and noting all the necessary in and outs of the program, segments and breaks. The DA, whose job it is to pass the information on to crewmembers in each department, should know every link between segments of the program. The DA notes such points as sound effects, lighting changes, camera repositions and actor's movements if required. They also may be responsible for the programs continuity.

The second part of the job is the highly challenging role performed whilst on-air. The role of the DA in the control room is principally to, 'lay out' the next step for all the crew. Their role is to prompt the director and all other members of the crew who require a standby, in order to be ready to perform the next task. The DA provides durations of segments and the program, time cues to commercial breaks and packages, and if networking, liaises with other departments and possibly other stations around the globe.

The DA is the directors, 'right hand man' so to speak, and is usually at the director's side throughout the entire production process. According to Prospects, The UK's Official Graduate Careers Website: "The role is technical, creative and administrative…they are given responsibility for a wide variety of tasks, which may be both menial and complex" (Prospects 2010). Having worked as a producer's assistant at the Australian Broadcasting Corporation in Hobart in the 1970's, I am aware of the demands live television has on determining the skills and attributes of a professional director's assistant. The ability to multitask, utilising several key skills and attributes while under pressure, is paramount to the success or failure of a live production. The skills I used included being able to focus on all elements of the program, timing segments, the program and break times, conveying standby cues to the director, videotape (and now EVS), cameras, sound, lighting, graphics, autocue, presentation and the floor manager for up-coming events.

The way in which the production process for a DA is managed is through organisation. A good DA knows where they are going and what they need to do in an emergency. The information gathered, and methodically prepared prior to going to air, gives the DA a thorough understanding of exactly what is going to happen. For example, the director's assistant knows when to call the next shot. They know the exact size, composition and movement required by each camera, and the number and sequence of the shots. They know when to call the camera to move from one position on the floor to another, so as not to cause problems, and enable them time to get their next shot. They know to remind audio to watch out for shadows, or play music, or special sound effects, and they count out of the inserts so the sound ends cleanly. They know when to inform lighting of an up-coming lighting change, or place the floor manager in the correct position to give a hand signal. The director's assistant knows exactly what the director wants, prior to the director wanting it. If a problem occurs the DA can rely on their detailed knowledge to find a solution, almost immediately. The difference between a good and bad DA is highlighted in the words of one of the elite interviewees who has worked as a director, producer and executive producer in live television for many years. When asked what he, as a director needed from his DA he said:

> Oh God, if you've got a DA that just continually feeds you information, that is continually one step ahead of the rundown, working out where we are going; and you know what it's like, at any one time you'll just go: "How far are we into this segment"? She needs to be able to give you the exact information straight away, she needs to be liaising with the network, with MCR; she needs to be your conduit to there…I've worked with some really, really good English DA's especially with my time with cricket, absolutely unbelievable…I found these ladies, just on it. Anytime, anything, they're offering information all the time, it was really good (Anonymous, personal interview, Oct 27, 2008).

As discussed above, I considered the ability to organise, as possibly the most vital proficiency of a professional DA. With that in mind, I was keen to know what the key ingredient was that enabled the DA being interviewed to perform as a professional. She replied she was "very organised" (Anonymous, personal interview, Nov 27 2008) in her personal life, as well as her professional life.

The ability for the DA to be able to focus on the key requirements of the cricket broadcast, had come from years of experience of working inside the environment of live television. In addition to the skills and attributes of the DA, there is also a relationship that builds up over the years between DA's and directors. According to the DA interviewed, she works with certain directors because: "You both know how each other works… you know what they want called; specific things; you give them as much information as possible" (Anonymous, personal interview, Nov 27, 2008).

While discussing the role of DA's on live international sporting broadcasts, the reliance on a highly professional DA was evident, when one of the respondents stated:

> A good DA might not think they're part of the production unit but they're actually, their conduit back to 'live'. If you haven't got a good DA, you're screwed. Without a good DA you're literally screwed, it just falls over. (Anonymous, personal interview, Oct 27, 2008).

> *The intellectual creativity of a highly professional DA cannot be seen in pictures, or heard in the story. However, without the consummate masteries of a professional DA, a program can fall apart. Examination of the quotes above shows a number of masteries in play. First and foremost, a high level of*

organisation that comes from years of experience working with the team, during time-future. It is during the time-future phase that the ability to focus intently on mathematical problem solving is at play. The live production process involves the need to constantly evaluate the timing, or duration of the entire program and the segments that make up the program. Meticulous time management, and the need to remain calm under pressure are vital to the programs success.

During the time-future, or live production phase the DA is manipulating time to control the output. The director relies on the DA's creativity to manage time in three parts. Firstly, what has been, or time past. Secondly, what is happening in the present, which includes all the replays, commercial breaks and calls to cover the game as it unfolds, and thirdly, what is going to happen in the future.

In light of the role described above, the director's assistant interviewed for this research pointed out that she only received the rundown for the live broadcast approximately a half an hour beforehand. In the last few years, with the move toward freelance crews, the producer often performs the role of setting out, and providing the rest of the crew with the rundown. Due to this situation, the DA needs to meet with the producer to go over the rundown and ask questions in relation to anything that is unclear to them. When asked what skills the respondent called upon during the live broadcast of the cricket she replied:

> Timing skills, concentration…yeah, a combination of everything I've learnt over the years as a vision switcher, Chyron operator (character generator) it all gets compiled into one, and makes the DA role a lot easier (Anonymous, personal interview, Nov 27, 2008).

When asked to relate what those skills were she said: "Well it's all got to do with the timing; the calculations…and being very fast at doing it if somebody asks for a quick time" (Anonymous, personal interview, Nov 26, 2008). To back up this sentiment, from the point of view of the director on a live sports program, another respondent in his role as a director replied: "You know as soon as you ask a question you need to

have the information, and they need to be a sharp as a tack (Anonymous, personal interview, Nov 27, 2008).

The last team member under examination was the vision mixer who works in close collaboration with all crew, particularly the director, directors' assistant, camera operators and audio directors. They mix all genres of programs that are live, pre-recorded, or recorded as live. Vision mixers are based in the control room of the studio complex, or outside broadcast van in the production area.

Creative orientations, skills and attributes of the vision mixer

Vision mixers operate a vision-mixing desk (console), which enables them to cut (edit) different sources of vision, as the program is either being transmitted live, pre-recorded, or recorded as live. Sources of vision include cameras, still and manipulated graphics, EVS and videotape machines, character generators and digital video effects. The desk allows the mixer to cut, mix or wipe between different sources, or use special digital effects. The newer digital vision-mixing desks are very complex, thus stretching the mixers in-depth understanding of each desks capability and operating practices. According to The UK Sector Skills Centre for Creative Media Skillset, an industry training body aimed at a globally competitive market:

> Vision mixers are the Director's "second pair of eyes" in the Gallery (control room). The work is exhilarating but demanding, and requires patience, stamina and resilience. Vision Mixers may be employed by broadcasters, or work on a freelance basis (Skillset 2010).

The complexity and diversification of a vision mixers job requires a set of skills and attributes for live television production that are attached at 2.2 in the Appendix 3. The UK Skillset, in addition to the Screen and Media Training Package, validates the complex nature of the role, and highlights a highly elaborate set of skills and attributes. Based on the skill sets, qualitative interviews and observations undertaken during the cricket OB, in addition to my position as a reflective practitioner, a set of consummate masteries were established.

The role of the DA and the vision mixer is different during scripted programs such as light entertainment, music or dance. Large events including sport are invariably undertaken with little or no rehearsal. In these situations the vision mixer relies on the rundown and the director's assistant, to give standby's on up-coming sources. The standby enables the vision mixer time to 'call-up' and preview effects, re-arrange the desk configuration to prepare for an effect, or to make sure the next source is available to go to. On the other hand, on dramas and pre-recorded programs, with an emphasis on performers including dance, music and vocals, the crew may get an opportunity to rehearse. Working from marked-up scripts for drama, a vision mixer will "…work closely with Directors to creatively interpret the script (Skillset 2010).

Scripted programs that happen in real time may have each shot predetermined by the director. At the final rehearsal of a scripted piece, a professional crew will have a deep understanding of how the director wants to tell the story. In other words, each crewmember knows every intrinsic aspect of their role, and how it fits into every other part of the creative interpretation of the script. From personal experience, as both a vision mixer and directors assistant, a director who is confident of the consummate masteries of their crew will often step aside to watch, as the crew bring the production together. As Fitzwater pointed out:

> The point when we come to record or are on-air; if it's a fully scripted show; my voice should not be necessary at all during the actual show. Ah, it is the DA who drives the show calling the shot number that is on air and what camera is next (Personal interview, Aug 20, 2008).

Fitzwater also described metis at work, when he spoke of the confidence he had in the switcher and the DA who, "often solve little problems" when "there might be a hairy moment we've had in rehearsal" (Personal interview, Aug 20, 2008). A closer look at the interplay between the DA and VM will highlight metis, and the importance of being able to strategize during a live broadcast.

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Direct observation of the cricket OB: preproduction

During the preproduction stage the director's assistant and vision mixer were both under observation. In the van, the packages were being recorded for insertion into the live cricket OB. The vision mixer was sitting in front of a very large panel consisting of numerous rows of buttons, knobs, levers (called faders or paddles), and joysticks which look similar to the steering mechanism in a helicopter. The desk made by Grass Valley was a Kalypso, and is one of the most powerful and complicated on the market. The desk shown below is a Kayak; similar in size and configuration to the one observed being used at the cricket.

Altered copy from source
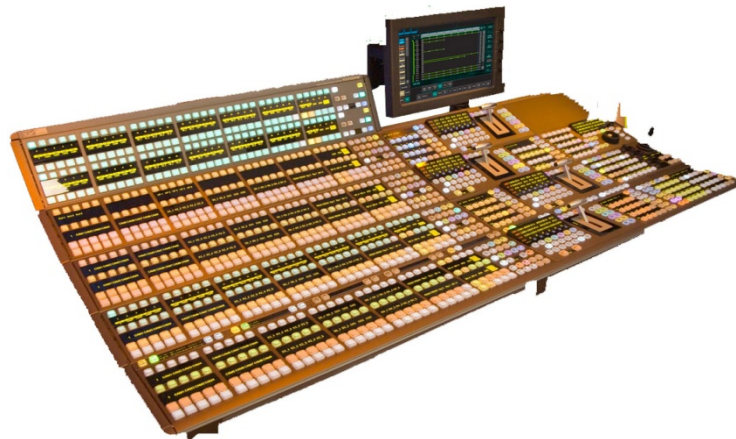
(Grass Valley, 2011)

The VM sits to the left of the director, and was setting up Mix Effects (M/Es) to use during the game. These M/E's include the replay wipes; the effect played when a bowler gets out for a duck, the player's names and game statistics, the play-offs and play-ons etc. This process is undertaken by setting up the desired effect, or look of the picture layers, clipping them so they don't bleed (blend) into one another, or have fuzzy edges, and making sure the colours and the speed and trajectory of the images are correct, as well as the duration of the effect is the exact time allocated. These effects are set up and fed into the desk's computerised memory. The VM worked with both the digital desk and the computer screen in front of him. While he was setting up the desk he was also putting shots, and other sourced vision (meaning any other vision other than the camera which could be pre recorded segments or graphics

etc.) on line, as the director called for it. He may have been focussed on a single job, but he was also putting vision on the larger program monitor for the director to see before the director was aware he wanted it. This also allowed the commentators to see the vision as program output (OB van out), on monitors in front of them, in the commentary position.

During this pre-game stage, the crew were preparing for the pre-recorded packages. These included the coin-toss, in addition to player profiles. Player profiles involved two commentators on the field talking to players. As the live interview took place, pre-recorded and edited vision was inserted on the run. This is an example of a pre recorded, as-live segment. These segments or packages were recorded on the EVS, and the DA made notes on her rundown of 'out words' (the last word spoken by the commentators) and durations. She also noted which EVS machine the package has been recorded on, so she could recall the package for playback during the game.

The VM sourced pre-recorded special effects (SFX) in the desk, and set up and entered new ones while he was participating in the recording of the pre-recorded packages. He was cutting the shots to line as the director called them, and reacted faster than the director when the commentator asked the player a question. The VM, sensing the director's next call, was quicker than the director at this point. He was also able to cut to the replay segments on the director's call while he was setting up SFX's and loading them into the desks memory. While the packages were being recorded the VM had setup most of the desk, and was running his right hand over the desk checking the lights on the desk to 'read' the setup he wanted. By 'reading' the lights he can tell what is ready to be cut, mixed, wiped, or what special effect was set-up to go to line; in what order, and how the layers of the picture were setup.

> *Basically, when a button is alight it means the input represented by the button (or bus) is active. An experienced VM can read the lights at a glance, and check that the effect's he has put into the computerised digital memory of the desk are layered correctly. Digital desks, such as the Kalypso, can be set up by individual users providing a platform that can save thousands of stored effects (SFX), with any combination of sources designated to a bus for each and every user. A VM is required to recall and select any number of these*

After the packages for the live show had been recorded the DA headed next door to talk with EVS. The DA needed to establish which EVS machine had which piece of vision for the opening sequence to the game, and other important information. When she returned to the main part of the van, she gave the information to the VM and audio director, via her headsets. This was the final check of where the vision and sound would come from, during the opening sequence of the program. The VM marked all the information he needed on his rundown. The rundown is a list of the events that make up the entire program. However, he had already inserted most of the information while they were pre-recorded. This step provided him with a double check of which machine the segments would come from.

The DA began to call time cues and word prompts (all the people in the production compartment were wearing headsets with small microphones attached), and her cues went to everyone who was wearing an earpiece. The people who have a direct link to the DA's calls are the commentators, floor manager, camera operators, EVS, audio director and a number of assistants.

At this point in time the director called for a rehearsal and readied the camera, presenters and the EVS. The DA began a count into the opening segment, and then gave the duration of the piece. As she counted down the director called the camera that would be on the presenters to be ready. "Ready 11: 11". The presenters began to talk and the DA readied the EVS replay.

The observation of the DA at this point showed that to achieve time accurate calls, she needed highly tuned organisational skills. The DA was communicating the up-coming sequence of events, and laying a smooth path for every other crewmember that could hear her calls.

The VM was still working on the desk setup, and was rehearsing at the same time, keeping up with all the director's cues, and the special effects that were required. The director called the EVS to roll, but the VM didn't cut it to line because he knew it was just a rehearsal, and it wasn't necessary. This was mainly due to the time restraints, as the time for the live broadcast was getting very close. The director didn't give full instructions to the crew. He just called, "animate and cut" when he wanted to see the graphic of the team. The VM instinctively knew what the director meant by the use of the short terms.

> *In moments such as the one described above, the working relationships of the crew, and a thorough understanding of the system allow participants to effectively 'read each other's mind'. It is during the interplay of fast-paced and succinct communication that two learnt masteries are being utilised. The first is television speak, as the language of live television. This enables the vision mixer to instantly understand the director's language, and the second; time-future is in play because the VM has experience of the collaborative nature of live television. In addition to the learnt masteries, the vision mixer is utilising attributes including quick reflexes and the ability to remain cool under pressure. The following observation outlines this further.*

The Director called: "Through", and the VM who has worked in the industry for many years doing cricket with the director sitting next to him, knew to mix rather than cut; as through means [7]mix. However, the VM would have had to know before the call because he would have had to have the desk setup for a mix. Although the difference between a cut and a mix on the paddle/fader doesn't require a big set-up, you need to know beforehand to get there at the right time.

The interplay between the roles of DA, VM and director, as the time for the broadcast drew closer, becomes finely choreographed. Along with sound, the three bring the program to air at the precise moment dictated by the network. In the main production area of the cricket OB, the DA called, "10 minutes", which meant they

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[7] A mix is a transition that replaces one picture with another, so it looks like one picture dissolves out while another one dissolves in, to replace the first one.

had 10 minutes to go before going live. At that point in time the production crew were still recording the packages for the game.

Observation of director's assistant and vision mixer - ON-AIR

As the DA counts down the last minutes to on-air the VM is quite calm. He looked up to the off-air monitor and watched the show that was being broadcast on the channel at that moment. It was an off-road bike race. Although he was doing two other things, for quite a while he seemed to have the time to take an interest in the race. The DA began the final count down to on-air. Everything in the van went quiet, except for the DA's count, and the director who gave last minute directions. The VM scanned the desk with his hands and eyes, and then stretched his neck from side to side.

The DA began calling the upcoming outputs such as the opener on Delta. She was sitting at the back with her stopwatch counting down to on-air. For example, 20 seconds to go etc. From 10 seconds to go, she counted backwards to one, whereby the Director called "roll Delta", and then he called, "take". In the van the Director, VM and DA were all following the rundown to ready themselves for each segment. At one point the VM turned and asked the DA the time left on the segment, as the director was talking to the commentators and was busy. The VM rubbed his hands on his legs to get rid of the sweat. At one stage, during the busy opening sequence of live crosses to the presenter's, pre-recorded segments and loads of special visual effects, the director called for something (unable to hear) and the VM called, "hang on a sec". At that point in time the VM was using 2 banks of buttons and the paddle, so his hands were full. He quickly selected the Mix Effects (M/E) and followed the director's request.

At one point the VM called for, "Tally on output", as he didn't know if the source he had selected was working or not. As described earlier, the need for clear systems is vital during live television. Not having a light to indicate the source he had selected, was included at the correct place in the visual effect or not, was a very real problem when dealing with so many SFX's. Due to the speed of the production and the accuracy required, the VM needed to know which source inputs were active, in order

to get the required SFX. It was a case of being able to 'read the desk' at a glance, and previewing the output before it went live to-air.

> *The vision mixer is reliant on the system operating correctly. His experience of the system gives him the ability to 'read the desk', and see immediately if there are problems. The ability to read the desk so quickly comes from having a very analytical mind. In the description above he was solving problems, at the same time he was cutting the live program. The amount of pressure to deliver accurate (employing visual literacies) and timely (employing quick reflexes) coverage still came first, however he also needed to remain focussed on several things at once, and remain flexible enough to change strategies if needed.*

> *The time-future world of a vision mixer is as close to a perfect understanding of metis. The moves required to counteract problems surrounding equipment (or system breakdowns), as well as the synchronise interaction between cameras, the players and the timing of the cut, is strategic innovation at play.*

The observation during the actual game is used to explain the use of metis and time-future further. As the game got underway the VM used both hands to cut. This allowed him to move quickly from camera to camera during the bowl/bat field sequence. This was because he could not span the number of buttons it took for 16 cameras and replays, with just one hand. At this stage the brain/hand coordination of the VM is critical, as the director is calling the vision mixer to cut between the different camera shots.

> *However, the creativity of the vision mixer is happening now in real time. He is not merely following the director's call he is using intellectual creativity, in collaboration with the entire team. The experienced mixer knows which camera the director will call, and is usually hovering over the button waiting, albeit for a fraction of a second. They may appear to be following the director, but on closer observation the VM is often seen to cut before the director's call, or will wait longer to take a cut if the action doesn't connect visually, or the camera isn't ready. During this phase the VM is editing the*

flow of the game in real time, through the camera shots presented. They will hold off on a shot, or extend one to find the most finite point to cut. The intricacies and nuances of the live cut will go unnoticed, if the coverage of the game is flawless. An example is a cut from a close shot of the batsman, to a wide shot of the entire ground, and then possibly to a fieldsman as they go in to take a catch. At all times the viewer wants to be able to read the game, and have all the information at hand. If the VM cuts to the wide shot from the close shot of the batsman too late, the viewer will find the location of the ball, in relation to the field, difficult to establish; if only for a brief moment. The viewer also gets more information from the close shot of the catcher, as they take the ball, than from a very wide shot that is difficult to see. In a live cricket match the cut is gauged, and the best point taken throughout the entire game, and although the VM takes the camera asked for by the director, they will judge the exact point of the cut themselves. This is partly due to a number of factors, including the shot offered by the camera called, and the game play, both of which are constantly changing.

The interaction between the game, the camera shots, the director and VM is happening on one level, while the DA stays abreast of it all, and provides the information for up-coming events. For example, throughout the game, and during pre-recorded interviews the DA calls the 'out-words', which are the last words heard on a package, and the duration of the replay. She has also notified everyone of the source, and coordinated the replay with EVS.

As discussed earlier, a DA is constantly manipulating time. One of the DA's jobs is to keep the director up to date with commercial breaks. For example, during the match the DA was managing the time frame for scheduled commercial breaks (ads), and alerting the director when they were due. Due to the amount of advertising and the sponsorship involved in international cricket, the director needs to slot in the required number of ad breaks. The DA is in communication with the network that is making sure the scheduled breaks are taken. Generally, the ads are slotted in at certain times, as gauged by the director's experience and knowledge of the game. However, the director is taking his cue from the DA.

For example, the DA and director are aware an ad can be taken if a bowler is known to take a long time to walk back and commence his run, or a bowler bowls his last ball of the over. At that point the DA under observation called, "last ball; break – go break – 30 seconds". This call is to everyone on headsets, and it allows the crew to have a short breather and prepare for the return shot as the station comes out of a commercial break. If the director is busy talking to the commentators, or floor manager (FM), or in a replay, the DA is aware and calls, "Running" for him when the bowler takes off to bowl the ball. This allows the director time to cut away, or mix off the replay in time for the ball to be seen leaving the bowler's hand. In this respect the use of time by the director and the DA is being utilised differently to other crewmembers, with time-future happening in sync for everyone.

> *Once again we see the intellectual creativity that can be likened to metis taking place. It may appear to an outsider that the director is in total control, however as seen from the observation presented above, the DA as the time-keeper, is setting up the strategy for the director.*

The DA's role as timekeeper is evident, however the level of focus and organisation gained from experience, is paramount to the entire programs success. A DA who loses focus, and makes mistakes with times, can cause problems that can travel around the globe when it comes to international cricket. The vast number of stations hanging off a cricket match can be in the hundreds, with everyone counting on the DA to call breaks and maintain correct times. According to one respondent: "If you didn't have really solid, internationally based DA's, you literally wouldn't get to air" (Anonymous, personal interview, Oct 27, 2008). This last quote goes to the heart of the role of the director's assistant. A cricket match may go to air without the director, as the rest of the crew can carry a broadcast, however the DA cannot be replaced by anyone other than another DA.

In conclusion, the three roles (EVS, Director's Assistant and Vision Mixer) observed highlight the significance of teamwork and experience in multi-camera live television. Therefore, the following summation is inclusive of all the roles observed.

In summation: direct observation of EVS, DA and Vision Mixer

To begin, the direct observations of the roles, and the supporting evidence from the qualitative interviews demonstrate the existence of a language, particular to live television. It can be seen that the vision mixer and the director's assistant, along with the EVS and camera operator, are roles with an intrinsic 'language', that go far deeper than first observed. As with any language that is foreign to the listener or observer, the true creative intelligence of a great EVS operator, director's assistant or vision mixer, are only seen by those who understand the process.

This language exists in varying forms, and can be described as *synaesthesia* (Kress 2000), or the interaction of multiple semiotic modes defined as multiliteracies. Not only are all the crewmembers interacting verbally through use of 'television speak', they are using all the elements including, sound, light, composition, music, voice, text and movement to add to the televisual narrative. The use of synaesthesia, in time-future only happens in live television. In film, various elements such as text, music and even voice are added at a later time.

In addition, metis is taking place during the live event, and through the use of these multiliteracies; the consummate masteries of each member of the team are revealed as intellectual strategizing. The intellectual strategizing is intellectual creativity, as the ability for the consummate professional to craft the multiliteracies into a televisual narrative, in collaboration with the team, is an exceptional performance of inherent skills and learnt masteries. As established earlier, in order for the television professional to perform at this level, they have learnt through the recollection of memories either unconscious or conscious through repetition of procedures, processes and systems. Repetition may allude to unconscious robotic acts, however in order to gain knowledge, professionals have long used repetition and recitation. Ricoeur (2004), likened this form of learning to the training undertaken by a musician, who by repeated recitation through repetition, reaches a state of authentic, yet innovative execution of a piece of music (61). And just as a musical performance happens in real time, so too does the live television crew perform in real time, instantaneously in the present, and into the future.

Moreover, evidence of self-direction, and the ability for each crewmember to add to the televisual narrative, whilst maintaining the objectives of the director is clearly demonstrated. In order for a crewmember to be 'truly creative', the language of a field, and the ability to utilise the inherent skills and learnt masteries, is learnt through repetition and recitation as described by Ricoeur. As one of the industry professionals put it:

> After you master the system, because there is a system in everything you do in life, right? You can't drive a car unless you have a system. You need to know to get in, turn the key on, put your foot on the clutch and drive the thing away. After a while you do it without even thinking (Anonymous, personal interview, Oct 27, 2008).

At the point of 'doing without thinking', the consummate professional frees up their thoughts to concentrate on intellectually creative, strategizing. The ability to reach this point of professionalism is based firstly, on passion, and secondly, on commitment or self-discipline.

There is a striking similarity to the television professional, with professional soccer players, or musicians. The similarity is the individual performing as part of a collective. For example, in a team playing a game of soccer there are several aspects that are relative to live television. Firstly, the game is happening in real time, with each player participating as an individual with skills that are similar, yet different to the other players. In this way each player has a different role, although they are all working towards the same outcome. Secondly, they are playing as a team in order to outplay their opponents and win. Here they are all strategizing as individuals, and as a collective. It is metis in motion; meaning the game-play is happening in the present, in real time, and also into the future while each player and the team rearranges their moves relevant to the play of their opponents. Finally, the creative strategies of each player add to the collective output of the team. The basis of what goes on inside the game includes the personal attributes of each player, and the learned skills as part of the team. The final part is intellectual creativity happening in the moment, which is presented as the aesthetics, during every second of the entire live performance. For example, as observed during the game of cricket, the speed of the game when a ball is bowled and hit requires focus and accuracy, with no time for reflection. The team

works to create a reasoned response to the moves of the game, and the moves and reactions of the other members of the crew.

In order to pull out relevant data, and add additional data to all the roles found in the team, the key skills and attributes were aligned to a set of masteries that may be present in all the roles analysed. Prior to bringing all the data together more cohesively in the final chapter, a summation of the investigations outlined in chapters 4 and 5 seeks to highlight the skills and attributes of the live television field. The following table has pulled out quotes derived from the qualitative interviews and highlights a number of important points based on the direction of the research. It is evident in the responses from education that there is no mention of any form of time-future and the need to think ahead as part of the team whilst working in real time.

Table 4 Response from industry

Teamwork	Skills & Attributes	Time-future	Drive/Passion	Live TV field	Incentive & Self discipline
…the whole crew is a team that is working as one …a person first of all **who can lead a team** …we pride ourselves on **working as a unit** …understanding really **how to work as part of a team.** **…** Even though you were down **the end of a communications system you**	…the need to **listen** **…clear, concise and unambiguous communication** …**and there must be some sort of inherent knowledge**; that if you put certain things together you will get a result … a **creative interpretation** with the equipment they've got. …to **create an aesthetic** result that fits in with the concept of the program we are making. … someone who **transcends the manual skills** …you've got to **concentrate**… … ability to **focus**	I'd want **a team that thought ahead** **...anticipating – thinking ahead** … they **can foresee problems** with a camera Everything **regulated by timing** **… stitching it all together in real time** …to me **television is all about the timing**. You know they say comedians have great timing**; they say a good sports director has good timing.**	…there is **an inner drive** ... they **develop a passion** for it. …to entertain an audience**; to move an audience** **… that passion** to frame images …amazing **enthusiasm** for the job. He just a blank sponge and everything just went in and went in. … If they vet them well and they are just good young kids **who want to learn**, then half of the battle is done,	**…being in the environment** and observing; asking questions; absorbing. … A person who **could absorb the television culture and there is a specific culture in television.** **… that *team* thing of the moment**. … appreciate all the roles **and how they interlinked** **Editing had a system**. You can't be creative; I don't believe; **you can't**	…somebody who can **keep the discipline** on the floor …what their **responsibilities to themselves,** to the **production** and to **every other member** would be You had **super enthusiasm** and you were **incredibly disciplined** … big, solid team sports; where you **gave everything**. You know that in TV, if you're not **disciplined** you're not going to make it. … school of **hard knocks**

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were a critical part of the chain.	**... they've got a good eye for detail and information** When you are talking about making television production we would **definitely be looking for someone who has experience**. If you haven't got experience don't apply. … **There will always be a need for the best in a particular field**. So we will always need the best camera operators; we will always need the best sound mixers; we will always need the best editors. … "You've got to be joking. Why would I put on a trainee cameraman**? I want 18 top shot operators".** … when I worked my First weekend on Bathurst, the guys who ran that event knew everything; absolutely **they were a walking encyclopaedia** **…** It relied on **accuracy, and skill and attention to detail** ... you had to **understand the mechanics** to be able to understand what you're doing … the greatest skill for me was **probably attention to detai**l first. Second one was **clarity of mind** under pressure**.** The third one was; and this is all	… continually **one step ahead** of the rundown, working out where we are going …I need to **have an idea of what everyone else is doing and what problems they could face** if they can't see everything that we are sending them. …. It's more one of those **things I do without thinking** now. … It becomes apparent when someone's done it a lot**. It's almost a natural reaction**. When someone is new to it, **it's very clear that they're sort of reacting rather than anticipating** what's happening.		**expand on your creativity; until you've worked out how to use the equipment**… …if you profile a lot of really, really good operatives.. you'd probably find that they **played very, very systemated sports** at school. … **And once they are in, they learn other skills and generally and work their way through the system.** … are keeping up to date with **industry practice** and those sort of things. … They not being taught necessarily on industry ready equipment and generally not being taught industry standard practice **…all that brain power would have stayed with the company** and now it just dissolves into the atmosphere … I'm convinced that **the model is**	… the other reason my application was even considered **was because I was doing three jobs** … Sitting in the truck for 10 hours with a 20 minute break is harder than it sounds.

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Teamwork	Skills & Attributes	Time-future	Drive/Passion	Live TV field	Incentive & Self discipline
	experience based; but lack of fear. **…** personal relationships and **handling pressure** **… Manual dexterity** …editing; not only **technically; but creatively.** ... it was just because I **applied knowledge at the right times** … **Listening** to what the director says, really. …**keeping an eye on everything** … **how to** program the desk … The hardest part it **keeping track** of where you have put everything. You'd **have to have experience** of doing the same thing a few times to know what would work and won't work. But **you need to be able to problem solve pretty quickly.**			**institutional training and vocational training.** I am just not sure how to get the industry to support it so it doesn't feel as if it is wasting time and resources on people who aren't ever going to work for them. And that's the trick. … each time you go up a grade **you get exposure to a different level** of show. I also **have to have a rough idea of their job** so I know roughly how long it is going to take them to do something when they're asked to … I've **spent my whole career learning how to do sports** and cutting off a script I find really unnatural to me. … To be honest it's just a feel thing, **you just feel it as you go**.	

Table 5 Response from education

Teamwork	Skills & Attributes	Time-future	Drive/Passion	Live TV field	Incentive & Self discipline
…we are setting up a third year	…the **key proficiency for directors… is to**		…where there is a **passion about something**,	…while the teaching staff are still	… It **doesn't require the commitment** to

which is project based and that will start in 2010 **and that's about people tying with a team** … what it means to have to **work together** The **collaborative nature of the film making process** means that a group stays together … They work in **small cohorts** …the **basic skills of working in a team.**	**recognise good ideas** …**taking an idea and communicating to an audience.** … Because to be a producer you need a **combination of creative project development skills and skills about financing and understanding IP** …we think training at the **school should not substitute for experience** but sit alongside experience … how the **processes** work … putting forward **your skills and ideas and** **negotiate** that through the prism of the project you're trying to make … the **relationship between story structure and audience;** how **characters** create and are understood … how do you **bring the outside world into your production**? … **juxtaposition of rhythm.** …but the emphasis of the course is on **story and creativity.** … **processing story ideas** into films that work. … we don't teach other technical roles perse …not sufficient time given to first of all basic skills – the **ability to listen; the ability to think ahead … The basics of composition.**		about wanting to communicate; wanting to tell a story. That's what it's about	interfering in that process the students **never have to actually come to grips with what it mean to have to work together** … we think that it's better for producers to **be working in the industry** and to come to us part time … **Being insulated away in a university or TAFE** environment; you know; no deadlines, no on-air dates, nothing like that**. It doesn't create the urgency** that is required in a lot of those jobs. …it's sometimes difficult to shoe-horn a process as complex as film making into a traditional university semesterised schedule. … You won't go in as a DOP; you won't go in as a director but you will go in [to the industry] **aware of the culture**. … a curriculum was devised that gave **total immersion**	getting the job done right the first time, by a certain time

| | There's a lot of **manual skills** necessary to work in television.

…**clear, concise and unambiguous communication**

… learn the **language of television**

… **academic subjects** that I think, do enrich people | | | | |
|---|---|---|---|---|---|

The table above highlights all the quotes that validate the skills and attributes found as keywords, during the qualitative interviews. In the following chapter a set of dispositions, as inherent attributes, and a set of learnt masteries for each of the four crewmembers observed, will be presented. Combined, they provide a set of consummate masteries that are required for the professional application of their role. These skills and attributes have been demonstrated to exist during the qualitative interviews, direct and participant observation, and in my own capacity as a professional reflective practitioner.

Key skills and attributes of all the roles analysed

It is evident that all the roles have similar requirements as seen in the four tables following.

Table 6 Multi-camera operator consummate masteries

Inherent attributes:	Learnt masteries:
• Passion • Disciplined • Creative • Cool under pressure • Focussed • Analytical • Agility • Quick reflexes • Initiative • Flexible	• Teamwork • Good communication • Visual literacy • Time-future literate • Multi-literate • Systems • Techniques • Television speak • Problem solving • Experience • Confidence

Table 7 EVS operator consummate masteries

Inherent attributes:	Learnt masteries:
• Passion	• Teamwork
• Organised	• Visual literacy
• Disciplined	• Good communication
• Creative	• Synchronicity
• Cool under pressure	• Time-future literate
• Focussed	• Multi-literate
• Dexterous	• Systems
• Flexible	• Techniques
• Analytical	• Television speak
	• Problem solving
	• Experience

Table 8 Director's Assistant consummate masteries

Inherent attributes:	Learnt masteries:
• Passion	• Teamwork
• Highly organised	• Visual literacy
• Creative	• Time-future literate
• Cool under pressure	• Excellent communication
• Focussed	• Multi-literate
• Meticulous	• Systems
• Disciplined	• Techniques
• Resourceful	• Television speak
• Mathematical	• Problem solving
• Analytical	• Experience
• Flexible	• Confidence

Table 9 Vision Mixer consummate masteries

Inherent attributes:	Learnt masteries:
• Passion	• Teamwork
• Creative	• Visual literacy
• Organised	• Synchronicity
• Cool under pressure	• Time-future literate
• Focussed	• Good communication
• Disciplined	• Multi-literate
• Fast reflexes	• Systems
• Design sense	• Techniques
• Flexible	• Television speak
• Analytical	• Problem solving
	• Experience

A list of skills and attributes has been extracted from the data examined to this point. They are found in all the roles analysed, and seemingly make up the core requirements of the consummate television professional. The major ones would appear to be quite obvious and include such attributes as *passion.* Passion as commitment, which drives *self-discipline* is described in the following quote from one of the interviewees:

> If you get there and you can't sit there for 7 hours and be watching every single ball… you're not going to make it. As soon as you wave off somewhere; and you only get one chance; and you screw up everyone just goes, "Ooh, she's a bit loose. She just blew it, she didn't cover my arse". That's what television does to you I think, the discipline (Anonymous, personal interview, Oct 27, 2008).

It is understood that in order to become successful in any field, *experience* in that field plays a vital part of gaining knowledge. Tim McDonald, spoke about his early years at TEN, and how he gained his experience in the field of live television, which he likened to:

> One big mother-ship; broadcast and production self-perpetuated. I would work in tape one day and I would be working for say news and current affairs. Then I'd be rostered to work with; I don't know, Bill Collin's Golden Years of Hollywood; then I'd be rostered to work for something else. And it was a big, nice big titanic model. It was great. It meant I got a super amount of experience (Personal interview, Aug 26, 2008)

Inside the 'one big mother-ship', as described by McDonald is *teams* within teams, working toward the same outcome. Dallimore spoke about how one of the EVS team stepped in to assist with a replay during the cricket because:

> I didn't get a chance to get it because I was doing something. Well the guy next to me will say: "It's these three numbers". So we're all helping each other out; exceptionally as well, which is good (Personal interview, Nov 26, 2008).

Of course, to understand what another member in the team is talking about requires an understanding of the language of the field, classed in the set of consummate masteries as *television speak, systems* and *multi-literate*. In the case of Dallimore, it

also highlights the language found inside specialist areas. Fitzwater also substantiates the need for clear, concise and unambiguous *communication* as intrinsic to live television, suggesting there is a need during the live production phase to "…trim the language down, to its absolutely bare essentials to get the result" (Personal interview, Aug 20, 2008).

The inherent attributes described in this chapter, which may be dispositions of people who seek work in live television, or the attributes learned in the field can be seen to exist. The four roles investigated show similarities in the set of masteries required to become a consummate professional. As outlined earlier all roles in live television require the basic set of:

1.   Passion: Have enthusiasm, stamina and drive.

2.   Teamwork: Work in collaboration with other crewmembers.

3.   Work Ethic: Achieve and maintain high levels of self-discipline.

4.   Focus: Remain focussed whilst working under pressure.

5.   Verbal and Nonverbal Communication: communicate through actions and listen effectively, accurately and succinctly.

6.   Flexibility: Demonstrate flexibility and the ability to multitask.

7.   Experience: Undertake their crew role with high levels of demonstrated expertise.

8.   Speed and Accuracy: Demonstrate dexterity.

9.   Know the Systems: Demonstrate a high level of understanding of the television process.

10.   Visual and Aural literacy: Demonstrate a high level of multi-literacies.

11.   Creative: Visualise and produce creative outcomes according to the program brief.

12.   Aesthetic timing: Demonstrate the aesthetic masteries, which include anticipation and past, present and future time, the moment and timing.

In order to establish an effective way in which 'live' television professionals may learn these skills and attributes, two evaluative measures around contrasting pedagogies have been recorded, in addition to an analysis of these different teaching models. The fourth part of the data examined shows an assessment of how immersive teaching supports the argument presented here that collaborative embodiment, during practical application enhances learning. It also shows that differing teaching environments can impact on the experience felt by the student, and in so doing impact on course outcomes.

Participatory Action Research and Evaluations

- *New Zealand Broadcasting School: Digital Film and Television Degree*

The data examined here validates how specific degree structures can influence the personal learning experience of students. It shows how a completely structured, immersive degree without any form of elective selection, compares with a highly flexible degree where other subjects are preferred to more complete engagement with the live television field. It shows how more intensive contact with staff, during an immersive degree, influences and enhances the student's ability to maintain self-discipline and drive, in addition to their ability to learn skills from the collective.

As a professional reflective practitioner, a large part of my career has involved teaching multi-camera television in the Australian university system. In 2009, I was employed as first year course leader at the New Zealand Broadcasting School. The Digital Film and Television Degree was run as a two and a half year immersive degree, aimed specifically at the industry.

The lecturers were no different in professional experience or academic achievements to those found in Australian degrees. The course was completely structured with no electives. At points during the first two years of study, the three disciplines of radio, journalism and digital film and television came together for combined projects,

underpinned by contextual analysis of the industry, and their craft area. Each part of the course had blocks of intensive learning, ranging from seventeen to nineteen weeks duration. In my capacity as course leader, my participant observation covered the students first seventeen weeks of their degree. There were two major differences to this course from any course in Australia.

Firstly, the course ran from Monday to Friday including several weekends during major projects, across the full seventeen-week semester. BDFT 500 was the only unit run by digital film and television for the entire semester. Secondly, the students were trained in multi-camera studio production at the very beginning of the degree, and not single camera. Generally, Australian screen degrees commence their degrees training students to use a single camera on small location shoots, with small production crews. On average these crews are 2 – 4 people, and the length of the production around 3 minutes. In Australia, multi-camera units generally take place in degrees over a shorter period, and the teaching is run as a single unit surrounded by a number of other units, throughout the week. In this, there is a huge comparison between the two degrees in the face-to-face interaction by students within the field of live television.

During the seventeen-week period of the immersive model, I found a number of learning outcomes easier to achieve. Importantly, I found the ability to instil industry discipline, meaning industry standards, including studio etiquette and a strong work ethic, which is paramount to the success of learning and production outcomes, easier to instil. This happened on three levels. Firstly, because we all worked together in close proximity for so long, we knew each other's strengths and weaknesses. Due to this a great deal of peer mentoring and student/teacher consultations took place while problems were fresh, and solutions could be worked out as a group or one-on-one. Secondly, the professional practice assessment, although daunting for student and teacher alike, proved a great leveller. The students took it very seriously, and by week 7 everyone expected industry standards from their peers. Finally, the students found the learning experience, which was based on a production company, fun. They set themselves challenges, and worked toward their own vision (albeit under guidance) utilizing all the passion they could muster. Their motto, "Own the Process" became the foundation of their drive to succeed.

Over the seventeen weeks, the twenty-three students found their place in the group by becoming involved in various roles during the genres covered in the course. As they built up their learnt skills, aided by competency tests, the teachers and each other (during which a true sense of comradely prevailed), they found their strengths, and began to move out of their comfort zones. The students supported one another to take on new challenges, including leadership roles during the 'pitch', where they told the group why they should have the job they wanted. Any student, who began to fade out of sight and shirk responsibility for the role they had undertaken, soon found the need to answer to the entire class at the 'production meeting'. After each production a 'de-brief' by the group, run by the production manager, gave everyone the opportunity to have a say about the production and each other. Positive criticism and well-deserved praise were accepted on equal terms, and everyone went on to the next production "fired up" to do even better. Gradually over the last weeks, the teachers took a 'back seat' and watched the productions unfold only stepping in when health and safety matters arose, or schedules were threatened by poor judgement, or a students total inability to perform a task. By the end of the seventeen weeks the students had produced:

1) A series of interviews ranging from two people (1 plus 1) to an interviewer and four guests (1 + 4)
2) 4 demonstrations (training for the School of Engineering)
3) A half hour children's show with 4 segments
4) 2 weeks of live news broadcast on the local community channel
5) 1 half hour light entertainment program (program brief provided by teacher)
6) 4 short multi-camera dramas (written by students)

Over the seventeen weeks, the dispositions and skills that the students had shown at interview developed into a set of skills and attributes that enabled the group to work with very little guidance, in the latter weeks. The group had become a highly professional team, drawing on others strengths to fill their own weaknesses. They were effectively teaching each other the gaps in their skills, taking the model presented by the lecturers as a guide to professional practice. This form of learning allowed the students to take the 'program brief', presented to them in order to learn

the skills of a particular genre, and produce an innovative production of their own making.

During the semester the students grew to know me well, and at the end of the course the students evaluated my own professional practice. As we had all worked so closely they had a thorough understanding of the role I had taken, and the guidance I had given. Therefore, I found the evaluation by the students, whom I had taught in an immersive model, as opposed to a more flexible and ephemerally connected model important to the theories presented in this thesis.

Teacher/student evaluations

The contrast between the evaluations based on the same teaching style, inside two distinctly different courses with identical outcomes, sheds light on the way in which the course structure can impact on staff/student relationships and learning. The final phase of examination comes from 'hard' data provided in teacher evaluations by students.

It was the first time in my teaching career apart from Charles Sturt University, where I was able to assess as a percentage of a grade, punctuality and the need for self-discipline. In this context, self-discipline allude to the attitudes found inside the television industry, and can be seen as industry standards and practice. Self-discipline, and the ability for the students to approach their lecturers when they were needed for assistance and guidance, stands out as vitally important factors to the success of the learning process, and the high level of morale found in the students. I also found that my feeling of wellbeing was greater when I had closer and more sustained contact, and I felt I achieved more for my students. To illustrate these points, there is a need to reflect on other places I have worked, and the student, lecturer relationship. From my perspective there are two main points that can be viewed as integral to effective teaching, with reflective practice an intrinsic part of teaching.

Firstly, lecturers need to know their students, and at what level in the process of learning they are placed. Having worked for several years as a casual lecturer, I felt

totally removed from my students, and I could not track their progress other than by talking to other lecturers, who also had a minimal knowledge of each student, just as I had. Secondly, the ability of students from other disciplines (for example architecture or education), undertaking subjects in a film and television degree, caused me great concern. By ability I mean, the students from these other disciplines who participated in film and television subjects, were not at the same level as the film and television students. Also, I had no connection with the lecturers who taught the students coming from another discipline. Universities that provide film and television electives to students of other degrees cause significant problems to lecturers, students and the subject. On numerous occasions I have had to make a choice as to which students I should direct my teaching to. As often, groups of students had vastly different understandings of the production process. On one hand there are students from other degrees taking a film and television subject for the first time, and on the other, students studying film and television as their major. Working to the lowest level, I have had to dumb down the subject, with students enrolled in the film and television degree disadvantaged by the process, and easily bored. Directing the subject to the students with more knowledge caused problems with the ones who have no background in the area. Students coming in from other disciplines, who know little, or nothing about the correct methods of production, are loathed to do it in a professional way. These students think that production paperwork is a waste of time, and any form of self-discipline including turning up for classes, isn't necessary. Due to this, the team falls apart because students come from all over the campus, and making time for themselves to work as a group outside class time, is generally impossible. There are even times when I have had students enrolled in a film and television unit who want it recorded, or they organise other students to take notes because they have enrolled in another unit that happens at the same time. It is impossible to study television, based on such things as teamwork, organisation and time management by some form of proxy.

To illustrate the difference in being a fulltime lecturer in an immersion course, such as the one at the New Zealand broadcasting School, with a casual lecturer in a unit that occurs once a week for two hours, and is open to numerous students from all over the university, I have included excerpts from two of my evaluations as a lecturer. There was no difference in my approach to my teaching methods, which are

basically based on craft competency and feedback through to project work. All assessments are based on the criteria set out in the unit outline, and given to students on day one.

The unobtrusive method used to gather information from the evaluations is best described as ways of extracting information without the cooperation of the participants (Marshall and Rossman 2006, 124). It may be said that the students had participated in the evaluations, however the data was collected after an event that did not interfere in their daily lives. In this regard the data came from archival records.

Teacher/student evaluation: Australian university Case 1

Case 1: describes my casual role as course coordinator while teaching at a university in a film and television degree. The subject outline and all assessments were the same as the previous years, and had been updated and prepared well in advance. I was unable to put the main document on-line in my position as a casual academic, as any alterations required a six-month lead-up. All students were directed to on-line information and resources, and given a paper copy of the up-to-date unit outline on day one. I had one group of international students who gravitated towards each other, and who found it very difficult to communicate in English, as it was their second language. As the coordinator, I only taught a few hours of this subject at the beginning. I had seven other casual lecturers to teach in their specialisations. As a casual academic I was employed on an hourly basis, and was on campus rarely once the course was up and running, although I was available to be contacted on email or by mobile phone. The semester ran for fourteen weeks, and during the semester I had to reorganise 2 weeks of lectures due to unforeseen illness of other staff. The on-line evaluation of the unit was not compulsory. Due to this the number of respondents in a class of fifty-seven was seventeen.

Anonymous student evaluations as written: (Exact copy from source)

- Didn't show a friendly attitude to the students. Not very helpful in guiding the students.

- Jeanette is I'm sure a lovely lady, however, she seemed to have little time to devote to students and their questions about this unit.
- I found her attitude confronting and didn't feel as though I could come to her about issues and understanding of assessments
- Knowledgeable but often unapproachable and unclear - forgets that we are not experts and may needs *[sic]* additional explanation.
- Didn't seem to have enough interaction with Jeanette. her *[sic]* PM / 1st AD consultation was very useful and I learned a lot about these crew roles. I have now discovered an interest in these areas and hope to specialise in them if I continue in the film and TV industry.

Teacher/student evaluation: NZBS Case 2

In contrast, the seventeen-week immersion course at the New Zealand Broadcasting School (NZBS) allowed me to be in contact with my students daily, for the duration of the course. The tutor evaluation was compulsory, with twenty-three students evaluating my teaching and the course.

Case 2: The outline and all information were presented to the students on-line, as in Case 1. I did the bulk of the teaching with one other tutor. Guest lecturers were employed for specialist master classes and seminars. All the students were enrolled in the Digital Film and Television Degree, which is a completely structured degree with no electives. My office is in the midst of everything including computer rooms and classroom, and in very close proximity to production areas.

Anonymous student evaluations as written: (Exact copies from source)

Communication
- Takes time to answer any questions we may have about our roles
  and what we need to do to improve
- Very helpful if we go to her and ask for help, and reminds us to
  ask for help if we need it
- Top communication I think

- Just needs to tell us what the productions are more when we are first assigned them
- Jeanette is very approachable and always willing to help. Schedules are always provided on time and are accurate.

Attitude to students:

- Although she doesn't completely understand me and who I am I feel that in time she will
- She is always considerate and respectful of all of us students and is just a generally lovely person
- Helped me a lot
- Jeanette is approachable, easy going and easy to relate to. Students feel supported and accepted.

Teaching methods:

- Doesn't come across as a teacher more as someone to help out and guide us (in a good way)
- She encourages independent learning.
- Her style matches my learning style
- Does great with Anne's schedule and plans moodle
- Jeanette has a lot of experience to call upon as well as relevant examples and demonstrations

Additional comments:

- Jeanette has found an excellent pace at which to introduce new teaching concepts and ideas. She is always willing to help at one on one or to go over things again in class.
- Easy to talk to, explains things clearly, open to questions
- Her friendly attitude with questions but still forceful when in control room or when its *[sic]* needed. She is a great tutor
- I find her very good at working with students and was strict from the start, meaning that they gained respect from the students. She is organized and helpful

In summation of the evaluations

On reflection both evaluations, and the role I had been able to play, seemingly had had a significant impact on how the students viewed my teaching pedagogy. In both cases, I planned the teaching to cover the competencies required to achieve a result; informed by the production genre at points along the way. The students were trained in the craft skills and the production processes, and procedures of the genre. In addition, the contextual understanding of the genre and audience focus was explored and evaluated during the process. Self-discipline was involved, as well as good time management, communication and organisational skills. Students worked in teams to produce a project brief, and were provided with back-up notes on-line. They were also able to contact me and other lecturers for consultations when needed.

In Case 1, I worked as a coordinator on a casual basis. Students who had no connection with me, or other students in the class found it difficult to move forward. There was no capacity for the entire group to bond as a team with a combined goal. They were splintered entities with little or no connection. It was unfortunate that an entire group was made up of international students who spoke several different languages, other than English. Throughout the production process, the international students found it difficult not to be constantly told what to do. Giving all the students guideposts, and allowing them to independently fill in the gaps, within their groups, proved a challenge to this particular group. Generally, the invitation to seek help in their work was not taken up. They found it difficult to seek the help they needed from lecturers, or each other when it came to the equipment. As is the case, students tend to gravitate to answers from the person in the group who appears to know everything. Unfortunately, often they only think they know. With that an entire group receives the wrong information. It is always a difficult ask to get students to consult the lecturer, instead of second-guessing.

In Case 2, students had the time to build up a bond with lecturers and each other. Over the seventeen weeks they learned how each other and the lecturers worked, and the bond of 'Owning the Process' provided a strong platform for the entire group to move forward. Peer mentoring was an obvious advantage, as was the ability for students to have one-on-one consults and guidance as needed. The entire group

grasped the self-discipline challenge, and by week 7 the vast majority were on board. The process did two things. One, it provided students who wanted to be leaders a platform to challenge themselves in front of their peers. They were under constant scrutiny, and the students who took up challenges generally shone, due to this fact. And two, students who began to wander off the track were quickly shown the way by their peers. By week seventeen the class was a well-oiled, totally inclusive group, who all knew each other's strengths and weaknesses. In the end it was the students who drove the professionalism inside the group.

The immersion model at the New Zealand Broadcasting School showed a clear distinction in the professional participation and attitude of the students, in comparison with the university students, in the more flexible degree. From this experience I found the structure of university courses, which give students the capacity to select numerous interdisciplinary and elective subjects, does not give the students and the lecturers, and time to connect with each other as a solid team working toward a final product. There is little time to grasp the team skills, time management, organisation skills, and incentives to learn in such haphazard environments. Just as important, the skill of communication, and in particular listening does not have time to develop inside the production processes that make up the field of live television. The breakdown in communication blocks the recitation of the craft skills used in the production process. With the breakdown in communication, the ability to be innovative is overshadowed by 'the doing', rather than the creating.

In conclusion

The data examined in this chapter, and the theories presented, have established a number of findings that suggest pedagogical models employed at Australian universities, do not fit with the needs of the television industry. First and foremost, live television professionals do not inhabit the same environment as that of the filmmaker. Therefore, although there are similar skills and attributes inherent in both fields, live television is governed by time. In order for the live television professional to learn to work within the framework, where instantaneous time of the present, and into the future exists, they need to learn to work as an individual, and as part of a

team, in real time. As demonstrated, the immersive degree at the New Zealand Broadcasting School had a profoundly different effect on the learning experience of the students, than those at the Australian university. A need to model learning that replicates the field of live television will alleviate the problems faced by the industry. Evidence suggests that live events such as sport suffer from a lack of trained professionals, due to the imbalance in the skills and attributes of graduates from Australian universities. The imbalance is born of a liberal education sector struggling to identify with 'practical' degrees.

The following chapter takes all the data examined, including the qualitative interviews, professional reflective practice, participant and direct observation, and the evaluations to arrive at conclusive evidence of the hypothesis that opaque, or inadequately formed understandings, of how creativity applies to the field of live television, have impeded the development of pedagogies suitable to the teaching of live television in universities. The hypothesis points to the fact that Australian universities align film and television degrees to single camera productions, in particular film. This fact, and a prevailing attitude that television, often described as a form of mass communication, and the roles of professionals classified as technical or 'button pushers' does not support creativity, has resulted in a shortage of graduates with skills suited to the television industry. However, this thesis has validated the existence of intellectual creativity within field of live television. It shows that reasoned strategizing, by all crewmembers that recall memories to action 'in the moment', during 'real time' production (defined as time-future), is intellectual creativity. Furthermore, this form of creativity is both individualistic and communal, in that it is utilised by the individual in their specialist role to add to the collaborative outcome of the televisual narrative. Chapter 6 will draw out the theories, based on the data examined so far, to show the structure of the hypothesis that suggests live television professionals need to have teaching models that are immersive, and that happen in real time, in order to further develop this form of creativity.

Chapter 6

Findings

Introduction

The data examined in the previous chapters, validates the existence of a creative intellect during real time, intellectual strategizing in all the roles analysed. It shows the use of a set of consummate masteries that provide the professional with the tools to work in the field of live television. However, the need to scrutinise how the set of consummate masteries is learned, is required. Therefore, the following chapter explicates the theories of learning, and sets out the findings in support of the hypothesis that: opaque, or inadequately formed understandings of how creativity applies to the field of live television, have impeded the development of pedagogies suitable to the teaching of live television in universities. It also points to the problems faced by the industry, due to the loss of in-house training, which are accentuated by Australian degrees suited more to single camera production.

The prevailing attitude to television as a means of mass communication has given rise to misunderstandings surrounding the creative intellect, employed by all live television professionals, during the live production process. The findings show that an intellectual creativity, although not observed as 'product' by the individual, is intrinsic to the creative output of the collective. This chapter breaks down intellectual creativity, and explains the processes involved in how people who work in live television reach a consummate level of professionalism. It shows how 'time' is a key to a set of aesthetic masteries that are at the heart of the creativity of the field. Furthermore, the dispositions of people who work in live television, and why such dispositions are important in establishing different teaching models, are put forward. It also points out that due to the nature of live television, embodiment in the field during the application of skills and attributes, is a more effective learning environment than those that generally prevail, as part of film and television degrees in Australia. Finally, the findings also highlight the need for open debate on educational models applicable to the field of live television, and the existence of a form of creativity demonstrated here, which can be learned and applied to future pedagogies.

It has been established, that the complexity of the role of the television professional in a live situation, requires consummate knowledge that differs from knowledge applicable to other forms of screen production, in particular film. As discussed in Chapter 1, live television utilises similar skills and attributes employed in other forms of screen production, during the pre-production and post-production stages. However, during the 'live' production stage another level of skill, governed by the constraints of time itself, is required. It is at this point in the production process that the skills associated with *time-future,* as coined by Fitzwater; meaning: "It's not the shot that's on the screen; it's the next shot, the next five shots, the next ten shots" (Personal interview, Aug 20, 2008), are utilised. The attainment of a set of consummate masteries through experience of the live television habitus, results in the ability to work in time-future.

A pedagogical model that reflects the processes described in this paper, is evident in the immersive model at the New Zealand Broadcasting School. This model gave the students an environment in which to realise time-future, the key ingredient to learning how to make live television. Repetition of the skills and attributes, during immersive training, enabled the students to reach a level of recitation without obstruction to their thought processes. At this point, complete focus enabled creativity to form as strategies within the team. The strategies utilised all the skills and attributes the students had acquired, within a highly metaliterate environment.

A number of masteries may be achieved without working in a live environment, however the entire set of consummate masteries is required to enable the operator to move into time-future. Time–future likened to metis, is that place where cunning intelligence exists, to enable dynamic change during practical applications (Letiche and Statler 2005, 4). In this way metis, although not observed at the time it takes place, drives the creativity of the individual along with the live production team in time-future.

In live television, the team works on a level undetected by outsiders, where the collaborative process of creating a quality program in real time, is uppermost. Attainment of all the skills and attributes allows the consummate master to step outside the systems of live television, in order for the team to work as a completely

focused entity. As William Fitzwater put it: "To me the ideal crew is the crew that transcends what I have prepared" (Personal interview, Aug 20, 2008). The only way a member of a crew can attain the knowledge to transcend the work of the director, is through experience gained as a consummate master of their craft, working collaboratively inside the field of live television. It is at the point of transcending and enhancing the directors intended narrative, through use of the elements found as metaliteracies, and the application of the consummate masteries, that the individual within the team is intellectually creative. For example, a past 'live' videotape operator stated:

> If you were to profile someone; I would say that you would profile them to be someone who can take a *system*; a technical system and work it. If you can't work it, you can't do it. If you're not good at a computer, you can't be a computer boffin; you can't. You don't know how to dance around the thing (Anonymous, personal interview, Oct 27, 2008).

The experienced gained inside the environment, including an unconscious knowledge of the systems gained through repetition and recitation, allows the freedom to be creative. In order to recognise that creativity takes place inside the live television habitus, it is necessary to understand its 'language'. Bourdieu (1977/1998), suggested that cultural fields represent sites of cultural practice. Each cultural field, which includes 'live television' have their own language. The problem arises when one field does not understand the language of another field. The collective field of live television utilises multiliteracies, and the skills and attributes found there, to inform the language of the field. This language allows the individual to perform strategies to enhance the collective's output. The following section deals with collective creativity as metis. Tim McDonald, General Manager Seven (Personal interview, Aug 26, 2008), spoke about metis in the form of IP, where the collective uses their individual and combined knowledge to out-manoeuvre rival networks.

The collective field of live television, metis and a sighting of creativity

In relation to social engagement, metis, a mode of 'intelligent action', is described by Letiche and Statler as a, "source of creativity or innovation" (2005, 4). Therefore in the first instance, metis is seen to exist in the field of live television as the social

collective. The following section outlines how metis as a theory, equates to the television professional.

In early forms, the definition of knowledge omitted to respond to informed action and creative response, as knowledge. Plato and Aristotle affirm a differentiation of theory and practice, with theory holding an "epistemological supremacy" (Letiche and Statler (2005, 3) over practice. As discussed earlier, Aristotle's *episteme*, *techne* and *phronesis* separate the learning process into three parts. Separation of knowledge suggests informed action and creative response are not intellectual. This thesis argues that both forms are intellectual, and fit with the theory of metis.

Metis as practical intelligence depends on an awareness of change, and the ability to strategically react with the intention of an advantageous outcome (Letiche and Statler 2005, 3). In this way metis as action, is informed by intellectual and creative responses. Further, the advantage of strategic change in any field relies on metis as an intelligent action: "that responds to particular events in the context of identifiable circumstances" (4). The ability to adapt is brought about by intricate knowledge of the field based on the language, and as Letiche and Statler propose: "if specificities count, then what is said and how it is said, becomes crucially important" (4). The why, and the how of the saying is the unambiguous and succinct language known to all the stakeholders, and as Fitzwater pointed out, communication during the live production phase needs to be trimmed down to achieve the best results (Personal interview, Aug 20, 2008).

Metis as a strategic form of innovation, or the capacity to react in a calculated fashion for the better, becomes apparent inside the collective of the live television environment. With the "partial abandonment of control" (Letiche and Statler 2005, 5), an agent (in this case an individual member of the live television crew) does not necessarily provide a solution to the problem, but allows the more experienced to make a decision that is advantageous to the collective. The IP of the collective, or production team is constantly situating itself to produce the best outcome, or in this case, the best live television program. As Letiche and Statler suggest: "…if metis is seen as improvised interventions on behalf of the otherwise powerless, it cannot be ignored as a source of creativity or innovation" (4). Although Letiche and Statler are

referring in part to the strategies of military operations, the correlation to a television crewmember as, 'otherwise powerless' can occur during live productions when problems arise, and new strategies are adapted for the success of the collective.

Time-future is likened to the observations made by Aristotle and Plato, in that metis happens so quickly that it cannot be observed (Letiche and Statler 2005, 5). More importantly, individuals outside the field cannot observe the strategies as thought processes because metis does not happen gradually. Metis is the reason behind the solution and implementation of the unexpected. Although metis may seem to happen in an instant, it is based on knowledge that is either an inherent disposition, or learnt as part of the field. In this way, metis is an action taking place informed by intelligence, either creative or innovative, which is termed here as time-future.

The creativity, or innovation that exists as metis, is an important part of the live television environment. It is a place in time and space that highlights one of the most creative masteries of the live television practitioner. Letiche and Statler (2005) explain metis more succinctly, and although there is a perception that bifurcation exists, metis is a response informed by knowledge that happens as an instantaneous action:

> For metis, 'best practices' and 'core competencies' do not suffice to respond to the unexpected. When a bifurcation point is reached which demands innovation, change and genuine newness, it is in effect, the turn of metis. Metis is the practice of the radically 'new' - it is pure becoming (Letiche and Statler, 2005, 6).

In this respect metis is not simple linear logic, but rather a complex network of non-linear events such as the collaborative processes of live television. The interaction of the television crew happens in a non-linear way, with the entire crew coming at the production from different points, using various elements of production including multiliteracies, as well as their skills and attributes. However, it can be said that the outcome, as a televisual narrative, is a linear process, albeit arrived at through non-linear moves by all the stakeholders. According to Letiche and Statler, metis has to do with an "intuitive attentiveness, heightened awareness, and situational intelligence" (2005, 7). These skills and attributes reflect the live television professional, as

outlined in previous chapters. They are the type of person who can operate inside a shifting environment and can "…sense the direction of events, perceive the nature of (potential) threats, and respond spontaneously, effectively and appropriately" (6-7). The complexity of the process, and potential for disintegration of any, if not all the elements that make up the process, is always apparent to those who work in the field.

The parallels here between metis and time-future openly suggest that creativity exists inside live television. Creativity is an outcome of a process of some kind, while the process of how we create something innovative is questionable (Kleiman 2008, 210). If the outcomes of a creative process can be observed and judged as new, creativity can be seen to exist. Tan and Prosser, as quoted by Kleiman (210, 2008), suggest individuals experience and understand "various phenomena" including creativity, "through there own discourse". In this respect people who work outside live television may not see, or comprehend an individual's creative output. In television the most obvious outcome is the finished program. However, it takes more than the writer, producer and director to make a truly innovative program.

As established earlier, television is a collaborative process. Therefore, it can be seen that the entire crew is part of the creative process, and without the skills and attributes they contribute to the process, a program would not exist. It has been established throughout the data that in order to become a consummate professional, and become part of the creative process, individuals need to know systems. It is through the process of repetition of the system, when a person reaches the point of 'doing without thinking', that creativity can occur. As one respondent stated: "Once they can…operationally handle the equipment then you can actually find out if someone's creative or not and you set them tasks" (Anonymous, personal interview, Oct 27, 2008).

According to Kleiman, research clearly shows "that there is a concept of creativity-as-process that is not linked to product" (2008, 212). With an understanding that 'process-focussed' creativity does not always lead to 'implicit outcomes' (2008, 212) or product, Kleiman's research substantiates the notion that creative processes undertaken by live television professionals may not be observed. However, there are times when a process of innovation can be observed, and seen to exist as an outcome.

For example, one of the personal interviewees, in his position as director wanted to relocate some cameras. The producer was not interested in change, and basically was 'playing it safe'. When the interviewee (director) asked why the cameras couldn't be placed in different positions, the producer said: "We don't do it…because we might miss an LBW" (Anonymous, personal interview, Oct 27, 2008). The director pointed out there were twenty-eight cameras to get an LBW, however the producer refused saying it couldn't be done: "because that was the way you did it". Whereby the director asked: "Mate, why don't you just push the boundaries a bit?" (Anonymous, personal interview, Oct 27, 2008). In this respect, the producer who does not physically work inside the field of live television could not see the innovative process working. On the other hand, the director who worked inside the field, and was a consummate professional of time-future, sought to apply new strategies to the coverage in order to make the game more interesting to the viewer. The director wanted to apply creativity to camera positions, to communicate the game more explicitly to the viewer.

The outcome of the coverage was implicit, in that it was embedded in the purpose of the program. The viewer would still see the LBW, however the process of innovation and the outcome may only have been observed within the field. It could be argued the viewer may experience the 'program' as innovative, however as there would be no immediate comparison of coverage, and the process of creativity had not been observed, Kleiman's theory shows creativity-as-process, can be seen to exist in live television. Examination of this data highlights the need to rethink live television. The example presented above also shows that individual's who inhabit television, may not have explicit knowledge of the field. And just like Delahoy (ABC 2008), who saw the role of the director's assistant as an entry-level job, assumptions distort the facts.

Open debate around pedagogies applicable to industry needs, in relation to live television, is overdue. As outlined earlier, television is part of the process of communication. It is the televisual narrative that speaks to an audience. However, in western society writing is still considered the most valuable key to effective communication, with art and music having a lesser impact on the creative development of an individual's education. One has to ask why a distinction between

theory and practice still exists in pedagogical models surrounding television production.

In Australian contemporary society the scope of textual forms as multiliteracies are broad, and in a constant state of transformation. Kress (2000) believed the interaction of multiple semiotic modes defined as, *synaesthesia* needs to be acknowledged. In television multi-semiotic modes or multiliteracies happen on two levels. Firstly, there are the televisual elements used by live television professionals to communicate to an audience. And secondly, is the application of skills and attributes by the consummate professional during time-future. Therefore, a greater comprehension of social and cultural forces is due. According to Kress:

> It is essential to open up full and productive access to the multiplicity of representational and communicational potentials which will be essential for competent practice in the electronic age, in the socialities and economies of the near future (Kress 2000, 159).

The diversity of complex televisual elements, and the processes utilised to produce programs has been substantiated during the observations, and professional reflective practice examined as data. Textual forms surround television professionals, and in developing their masteries through experience, and use of those forms they become metaliterate. Television professionals use multiliteracies as synaesthesia while producing live television, as they are constantly using multiple semiotic modes to interact with one another, and the production processes. If the tools of the consummate professional, and the elements of as multiliteracies are used, one would suppose that a pedagogical model that uses synaesthesia would provide positive learning outcomes. Furthermore, embodiment has been seen to have effective learning outcomes, ranging from military training to the immersive degree at the New Zealand Broadcasting School. With this in mind, a process to pinpoint, extract and enhance inherent skills, and develop learnt masteries required further analysis.

An explanation of intellectual creativity

A correlation between live television and the performance of an orchestra is used to explain intellectual creativity further. For example, during the production phase a

group of professionals using a highly complex set of masteries renders a creative performance. The director or maestro orchestrates the production crew who use a personal set of inherent attributes and learnt masteries, to create a program through moves prescribed in collaboration with the team. There are two factors that point to the need for immersion. Firstly, is the place 'time' plays in both environments, and secondly the collaborative effort. In live multi-camera television, just as in an orchestra, each member of the team is reliant on each other member of the team, and any individual cannot operate alone, or out of time with the rest of the team. However in order to overcome problems, intellectual strategies as instantaneous actions are employed by individual stakeholders, or the collective. This suggests two forms of 'genius', or creativity, as described previously by the Romans and Greeks. The Roman view of creativity, expressed as a communal inspiration within the paterfamilias, was ascribed to all from birth. While the Greeks believed the artist received inspiration from the Gods, as an individualistic breath of genius (Negus and Pickering, 2004, 138). Further explanation of where, and how both forms of creativity exist, beneficial to understanding the essence of an intellectual creativity within the field of live television, is detailed later in this chapter.

It is during the process of live television described above as a form of metis, that the crew utilise synaesthesia during time-future. Fitzwater, a consummate professional believes music provides us with the ability to listen. And with an enhanced ability to listen, "[people] become far more literate. Their numeracy is increased because music is about counting" (Personal interview, Aug 20, 2008). Fitzwater saw a parallel between music and live television when he added:

> Those core skills, of the ability to listen, to be literate, to be numerate, and to socialise are all the core skills that basic television training will give. Film training, curiously enough, won't give that because it tends to be given in isolated individual units (Fitzwater, personal interview, Aug 20, 2008).

In all the literature that outlines the standardised skills of television professionals, and the data collated through the qualitative interviews, creativity is an intrinsic attribute. In live television creativity is fed through the collective process as intellectual creativity during time-future, and it may not elicit an observable output

for any one individual. However, the intellectual creativity, or innovation undertaken by the individual, enhances the creative output of the collective. Kleiman's work supports the hypothesis that creativity can exist in different forms, one of which is a process-focused experience, which may not be linked implicitly to any outcomes (2008, 4). Furthermore, the data demonstrates where creativity in live television can be found.

Creativity has also found to be an individual attribute. It may have been acquired within another field, just as certain dispositions have been found in people who aspire to work in television. The following section clarifies where the dispositions may have come from and whether they can they be developed.

The dispositions of people who are orientated toward the field of live television

In order to place the skills and attributes in context to the theories of learning; a correlation between two fields involving strategic teams acting in real time, began to emerge in support of the argument. Theories relative to how knowledge is gained in the area of sport, encapsulates the field of live television. For team sports are a mirror of the live television event, as both involve individual and collaborative effort, involving strategies during live events.

The concept of immersion in the field, and the place of the reflective professional are pivotal to the theories presented. Spinoza, unlike Bourdieu understands which:

> The mind–body relationship allows for an embodied notion of subjectivity that possesses a reflexive capacity that can impact upon these dispositions. Conscious reworking of the dispositions within the habitus allows for the possibility of change equipping the habitus with a far greater agentic function (Spinoza quoted by Noble and Watkins 2003, 525).

According to Noble and Watkins (2003, 527), Bourdieu's analogy of 'knowing the game' in relation to sport does not "quite capture the phenomenological fullness of sport". As the embodiment of knowing the game goes further, and covers all the elements of the game including, "a feel for the ball, the pitch, the uniform, the other players, the coach, the referee, the spectators, the temporality of the game and not

just its spatial qualities" (527). In this way, unlike Spinoza, Bourdieu (1998) sees having experience of the game as, practical sense. In so doing he omits the process of adapting or adding to, what can be described as dispositions.

During the interviews with industry professionals it became apparent that team sports and real time events, had had an impact of 'knowing how' to work in live television. William Fitzwater, Producer/Director/Writer and Educator, described how he came to work in live television; bringing with him attributes and skills acquired through theatre and live music performances. As he said:

> That was the beginning for me…It was a professional engagement in the Union Theatre Rep Company…we did four plays…then he made me musical director for *Threepenny Opera* – I conducted a little band in the pit. Then I was made stage manager of *Orpheus Descending* by Tennessee Williams and *Look Back in Anger,* of John Osborne. At the end of that I thought: Right, I'm going to go into television (Personal interview, Aug 20, 2008).

Another respondent spoke about the beginning of his career. He suggested he wasn't really creative although as he communicated:

> I played a lot of sport, which gives you a lot of discipline, so, one day at the pub I said, "How do you get into this business?" He said, "Mate you know, just come on down we're looking for trainees". This sounds like fun. Now I had no idea about television. I had no desires at an early age to work in TV or film, or anything else; sang in the local choir that was about it (Anonymous, personal interview, Oct 27, 2008).

This suggests that although the respondent did not believe himself to be creative, he possessed dispositions that he has adapted to the live television environment. The same interviewee has had a remarkable career in live sport, and has worked worldwide as a director, producer and executive producer for a number of large television production companies and networks.

On the other hand, William Fitzwater has worked in education as well as the industry. Fitzwater, who has a broad background in the arts, likens live television to music and the theatre. While discussing a training program at the BBC, Fitzwater pointed out:

They realised that the people they started with had all come from the theatre, but that television required a particular animal…In live television; studio or OB; just the way a group of people think, regulated by 'the second' being right on air right on a specific time to the nearest second. Everything regulated by timing but with a strong aesthetic drive to produce a result that communicates to an audience. So it's a roundabout way of answering your question – yes, there is an inherent sense of knowledge you bring into it but there must also be drive. I mean knowledge without the drive is a pretty arid journey (Fitzwater, personal interview, Aug 20, 2008).

The description above provided by Fitzwater, could quite as easily be talking about an orchestra or sports team. It can be seen that both respondents show early dispositions to the discipline of working inside a team. The information taken from these two interviews was not a direct question regarding an involvement in sport or music, but rather where they began their careers. During one interview, the profile of what constitutes a good television professional was discussed. Gary Deans, a respected sports director who came up from on-air videotapes was described as "a great rugby union player" (Anonymous, personal interview, Oct 27, 2008) first and foremost. His passion for sport and the discipline he learned as a solid team player gave him the personal attributes for success. More importantly as someone who played "very systemated sports at school" he was able to utilise his "super enthusiasm", self-discipline and team skills in his role as a live television director. (Anonymous, personal interview, Oct 27, 2008).

One of the EVS operators who were observed during the cricket was approached for an interview. Colin Dallimore, a long time videotape operator and now EVS operator, taught himself to edit by experimenting. He described it as 'playing around':

Because what I did was, I'd go and get a music clip… you can just put a bit of music down, something nice and fast. It's got good beat, because we're always cutting things to music, openers, closers or whatever. It's an easy format to cut to… just easy to do vision-only inserts and get them on the beat and make the piccies *[sic]* look good and things like that (Personal interview, Nov 26, 2008).

It may be an easy task to edit to music for some people, so with this in mind I was interested to find out if Dallimore was a musician: "Yeah, yeah, yep, I love music,

and up here [Nimbin] there's people playing it live, and you can jam and pick up a drum, or whatever and join on in; it's beaut" (Personal interview, Nov 26, 2008). The idea that a videotape operator was used to the discipline of music, and the systems involved in music began to suggest a possible connection to people who had trained in teams acting together in the moment, and people who work in television. I asked Dallimore about his background in respect to sport and he told me he was: "Yeah, yeah very active, I've been doing soccer all the way through as well as a few other bits" (Personal interview, Nov 26, 2008).

Following the observed connection, another respondent described why a highly experienced camera operator is flown all over the world: "It's his ability to focus on that ball …for six or seven hours without missing". His understanding of why the camera operator could maintain such a high level of focus derived from self discipline was: "He's a good sportsman, a very disciplined sportsman" (Anonymous, personal interview, Oct 27, 2008). It became apparent that a number of professionals interviewed had learnt self-discipline and teamwork from being involved in team sports, while Fitzwater believes it could also come from music. Fitzwater related an observation from many years of teaching and working in television, in addition to his involvement in music:

> If you train children from literally; the cradle; a small baby being bounced on its mother's knee at age one month, to a piece of music; the rhythmic patterns are embedding itself into the gross motor movements of the child… It increases their literacy. They are suddenly far more literate… Their ability to listen is enhanced; therefore they become far more literate. Their numeracy is increased because music is about counting. When you leave three and four, the waltz and the march and you move into five and seven and nine and a lot of other time in those scales, or time signatures, suddenly you feel comfortable there. As well as that music socialises people. Now those core skills, of the ability to listen, to be literate, to be numerate, and to socialise are all the core skills that basic television training will give (Personal interview, Aug 20, 2008).

An ability to work in the live environment of television is more closely linked with an orchestra, or even a sports team than perhaps a film crew. The reason being, in live television members of the crew need to use all their skills and attributes, in collaboration with everyone else at a given moment in time, in sync and in order. In

this way they are working inside the television habitus in time-future, described as knowledge gained by unconsciously 'taking in' structures, systems and dispositions of a field (Webb, Schirato and Danaher 2002).

Looking back over the data collected, a theme began to appear that to my mind might have an impact on the type of person who works well in television. Without question, creative people gravitate toward television and film production. However, there are also people in the industry who would not be considered creative. I was keen to know what influence music; and in particular sport had to do with working in television when I considered what William Fitzwater had said. According to Fitzwater:

> The basic skills of training people in music are the basic things television training will give. Now I reckon music should be a core subject in schools. Not a decorative thing; not a; it would be nice if. It should be a core thing along with mathematics, with English literature, with history. Not to train a nation of orchestral players or rock musicians, but a nation that can listen, that can be literate; will be literate, numerate and better socialized (Personal interview, Aug 20, 2008).

Fitzwater can be described as the complete and consummate professional in both education and the industry. His career spans many years in the industry in various roles. One such role was as the director of *The Maestro's Company*, a project I worked on as a vision mixer. The project was a children's drama, shot multi-camera using puppets and live performers. It was a thirteen-part series on opera. Fitzwater, in his capacity as director utilised all his skills, and the dispositions he brought with him from years in theatre and music. Fitzwater chose to shoot the project in multi-camera, and as the vision mixer working with the music in real time, it was a prime example of time-future utilising various forms of time. Along with the time-future of the live production, including all the televisual elements, we were also working with the timing of the music. It is to be noted here that I do not read music, although I have worked successfully on numerous live television productions involving music, including coverage of the Tasmanian Symphony Orchestra and Star Search. In my capacity as a professional reflective practitioner, I had reached a level of consummate knowledge as a Senior A Grade Vision Mixer. I was at the top of the

game, which gave me the freedom to act unconsciously in the moment. I could concentrate on intellectual creativity, and support and add to the quality of the narrative as it unfolded because the effort to recall memories of systems did not cloud or obscure my creative input. It is also to be noted that although I never participated in a band or orchestra, I was involved in the school choir, team sports and the theatre.

It became apparent, that certain dispositions found in individuals, which are characteristic of a particular field, can be adapted and built upon for use in the field they now inhabit. In addition, dispositions found in one field can be adapted and built upon for use in fields requiring similar dispositions. Noble and Watkins (2003) point out that the 'feel for the game' is gained over time. The sighting of a thread, which seemingly ties together sport, music and other real time events, prompted further investigations. Firstly, to determine if the 'work ethic' and self-discipline needed to turn up for practice for a sports team, or for band, or orchestra practice had been part of an individual's prior habitus. And secondly, did the intricate teamwork of the real time events in the past, present and future exist prior to an individual undertaking a degree in film and television. Finally, in order to examine the questions raised, a survey was conducted on a focus group from the New Zealand Broadcasting School. The results of those surveys are included below.

Evidence of a sighting of dispositions

The data presented, illustrates the number of students who participated in the fields of sport and music prior to, and while studying at the New Zealand Broadcasting School in 2010. **Figure 4** Illustrates the number of years each student has participated in sport. The average age of students in the focus group was eighteen years. Of the twenty-one students, 4 had not participated in sport of any kind while 6 students played three different sports. Figure 4 shows that of the seventeen students, over 50% of them who had participated in sport had been involved in sport for 5 years or more. This equated to more than a quarter of their lives.

YEARS OF SPORT BY STUDENT
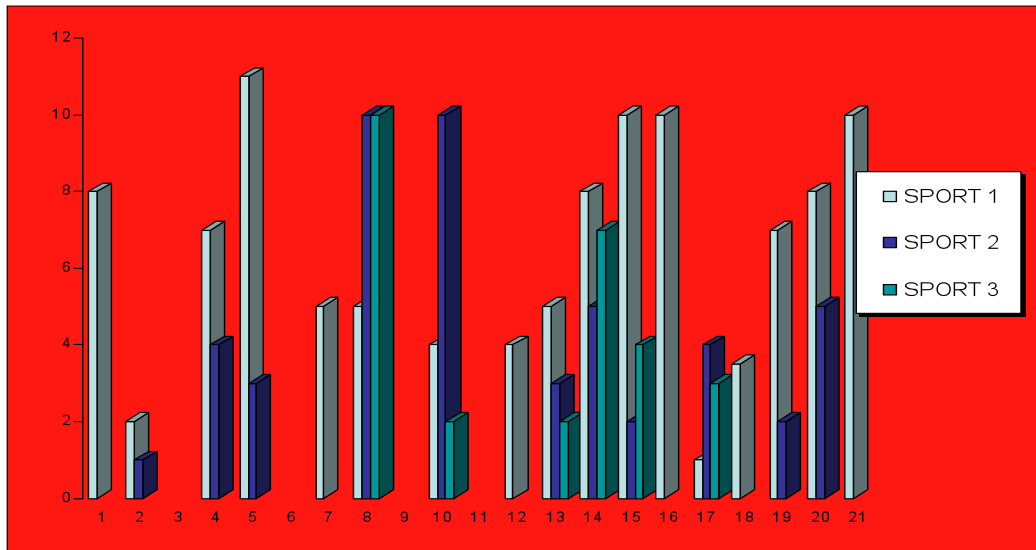
Figure 4

Percentage of students who took part in a team sport
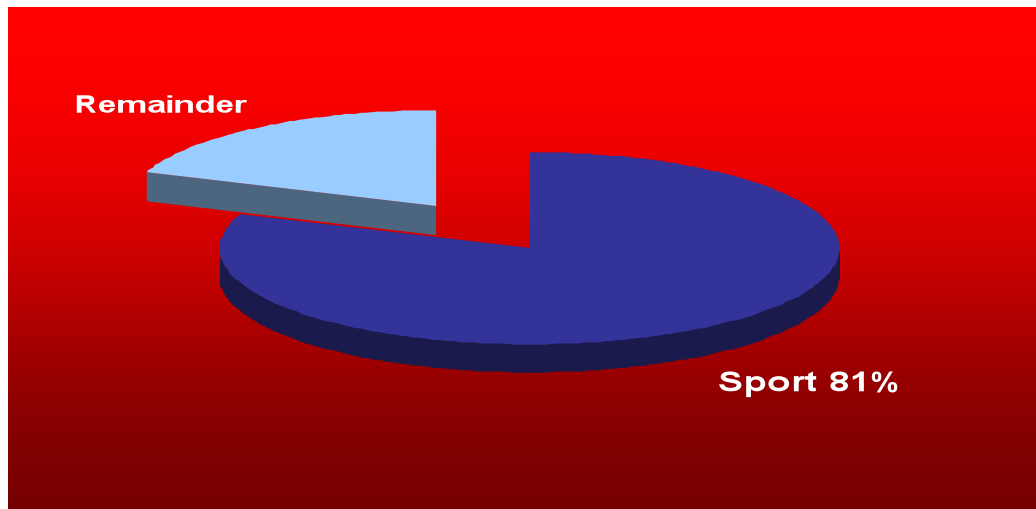
Figure 5

Figure 5 shows a majority of students involved in team sports. This data suggests that students involved in sport may have acquired self-discipline in the way of work ethic (turning up on time), motivation to succeed and the ability to work in a team. It also may have provided the ability to strategize in real time, as part of a team.

Percentage of students who have studied music.
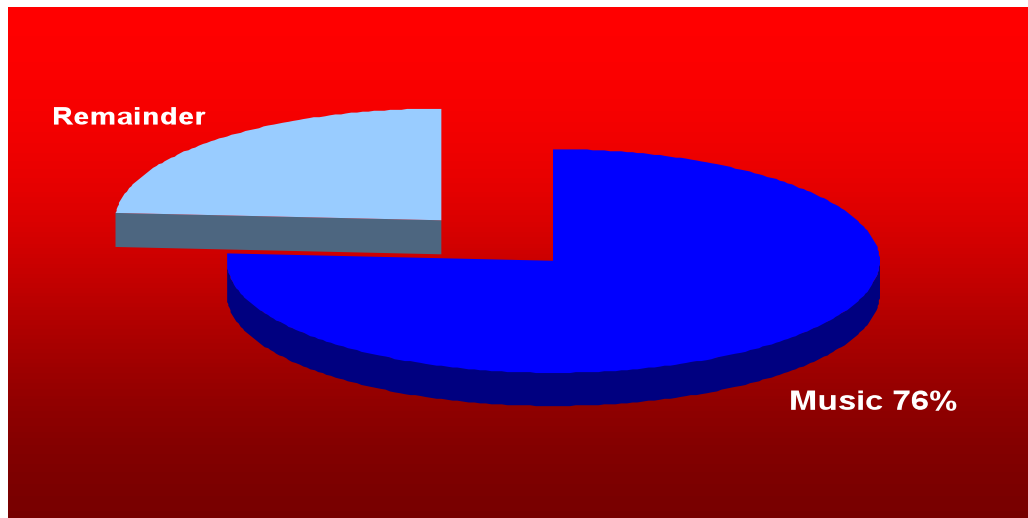
Figure 6

Figure 6 shows that of the twenty-one students in the focus group, 76% studied music either as part of a group, or individually. The dispositions found inside the field of music include, self-discipline, " the ability to listen, to be literate, to be numerate" (Fitzwater, personal interview, Aug 20, 2008).

Participant Percentages for both Sport & Music
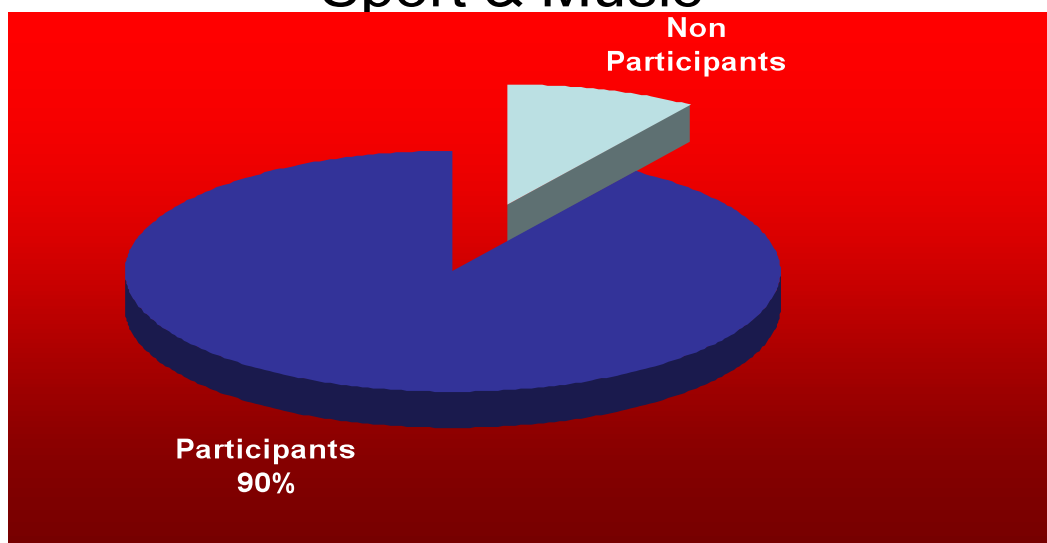
Figure 7

In Figure 7 the percentage of students who participated in sport, music or both was 90% of the focus group of twenty-one students. Without further investigations it is difficult to determine whether the influence of sport and music, as disciplines that involve intricate teamwork and forms of knowing, or 'acting without thinking', described earlier as tacit knowing contribute to the field of live television. However, it is interesting to note that music and sport have played a significant place in the lives of the focus group, as well as the industry professionals interviewed. The set of skills and attributes that are evident in sport, music and live television are:

Table 10: The skills and attributes of the 'real time' team

•   Teamwork
•   Work Ethic
•   Focus
•   Passion
•   Verbal and Nonverbal Communication
•   Experience
•   Speed and Accuracy
•   Knowing the Systems
•   Organised
•   Anticipation
•   Timing

It may be that certain dispositions included in the list outlined above come from fields such as team sports or music. It is understood that certain skills and dispositions are not new to curriculum design. DiMartino and Castaneda (2007, 1) found all forms of industry need graduates who have a skills set containing "oral and written communication, time management, critical thinking, problem solving, personal accountability and the ability to work effectively with others". However, there are certain skills and dispositions that are pertinent to live television, and without anticipation, timing, speed and accuracy, the set is not complete, and the learning process is diluted. Therefore, the following section describes the consummate masteries in line with the theories, in order to provide a way forward, and to set up a model of value to the television industry.

Understanding consummate masteries

The data suggests there are particular key skills and attributes that are found across all live television professionals. As outlined earlier, theorists (Bourdieu 1977/1992/1998; Spinoza 1677/1994; Webb, Schirato and Danaher 2002; Noble and Watkins 2003) have described these skills and attributes as dispositions, which seemingly are adapted or gained as knowledge inside the social collective of a particular field. These key skills and attributes are the foundations to achieving success, and gaining the set of masteries as presented. Therefore, how does one arrive at the place where inspiration; whether self induced or found through outside stimulation, give us the desire to learn?

It appears from the data that this inspiration comes from passion. As Fitzwater put it: "There was a passion simmering away there", or like other people he knew, they developed "a passion for it" with "a drive" (Personal interview, Aug 20, 2008) to tell stories. Passion and the dedication to achieve the best outcome possible have been found to be two key attributes of a live television professional. Understandably these two attributes are common to other professions. However, the data validates dedication to the job, and the desire to achieve as essential to an accomplished career in television. The following examples show a person who went on to become a success, while the other speaks for itself. During a qualitative interview one of the respondents spoke about getting entry-level employees used to logging videotape, to learn how to tell a story through the vision acquired. The notes taken by the trainee loggers help to visualise the coverage of an event, and gives the editor down the line precise in and out points, and a description of what has happened that is important to the narrative. According to the respondent the first trainee was successful:

> She takes that role on as if her life depends on it. I've never seen notes like it and I just said to her, I want you to log everything you see…and the guys back in the production house couldn't believe the note taking (Anonymous, personal interview, Oct 27, 2008).

It is evident the second individual had no passion or dedication, and believed she would get the job she wanted through personal connections (raised later in the

interview) rather than passion or dedication. During the training process the respondent asked:

> What do you want to do in television?" She said', "Oh simple I want to be an executive producer". I said, "Oh really, fine. So you know it takes about 15 years to become an EP?" and she went "Oh it won't take me that long". So I said, "You know, the best EP's they all start doing logging". She said, "Oh, I hope not". And I knew straight away she wasn't going to make it and she didn't; she didn't last long. She was meant to be there for two weeks and after a week we never saw her again. (Anonymous, personal interview, Oct 27, 2008).

Passion for the job, and the self-discipline to work hard at obtaining the necessary skills is intrinsic to success in innumerable aspects of life. One of the respondents recollecting on his experience, likened the skills and attributes to those found in a sports team:

> If you profile a lot of really, really good operatives like Stewie Clarke, Tim McDonald, you know all those guys that really, really made it somewhere, you'd probably find that they played very, very systemated sports at school; big, solid team sports, where you gave everything. You had super enthusiasm and you were incredibly disciplined. You know that in TV, if you're not disciplined you're not going to make it. …I'm just thinking and this is where that teamwork that I wrote down was something that I found that I probably really loved …It was very much; we are the team. We are the A team and we pride ourselves on working as a unit, and it really helped work these systems out. So it's very sports orientated to me, and I also put here repeatable execution. I think if you repeat something enough and you get it down pat, then it frees up energy in your brain to go on and dream about other things. You can then become very creative (Anonymous, personal interview, Oct 27, 2008).

Many individuals seem to idealistically believe television is exciting, and success easily achieved. However in order to achieve success, dedication and commitment are required to learn new procedures and systems. As outlined in the quote above, the use of systems is an important aspect of television. Through repetition people learn new skills, and gain confidence with the equipment and production procedures. The repetition and recitation of practical action gives the user two outcomes. Firstly, it frees up thought processes to enable greater creativity, and secondly it enables

greater focus. McDonald spoke about how, through experience in live tape, he "got more and more exposure to what I call picturisation, actually editing and editing, not only technically, but creatively" (Personal interview, Aug 26, 2008). He described the two key skills he needed in the environment as "…attention to detail first" and "clarity of mind under pressure" (Personal interview, Aug 26, 2008) second.

Passion, self-discipline, focus, clarity of mind under pressure, teamwork, and experience of the systems are key skills and attributes of professionals working inside the live television field. Other skills learnt as part of the live television field enable the professional to obtain a set of consummate masteries. It is during the live production phase that the set of consummate masteries, as experienced by McDonald, enable the professional to be truly creative. As another example, Dallimore described how having learnt how to work through the use of systems, which included the production process, the equipment and the game, he was able to be more creative in his role as an EVS operator. Dallimore explained that:

> They know I'm used to doing the very tight angles, especially with the rugby. I did the rugby world cup and they know that I know all the rules, all the bits, see all the stuff that goes on so if they ask for something I know exactly what's going on. And this particular time, it was old George Smith and he used to have dreadlocks and the Kiwi's; there was a story about it before the game, the Kiwis had a bounty of a hundred bucks a dread if they could get pulled out. And no one else had seen it and I saw this one guy with both hands getting out of a scrum or getting out of a running maul and he's got both hands in his dreads and he's pulling him down, like trying to rip the whole head off basically. And I kept going 'cause the camera got it; he actually lifted his whole body off the ground. When he was trying to get his hair out he lifted this guy and he was trying to pull him down and ended up givin' him a big back fist in the face, which made him let go. Because of that one replay, that no one else saw. I really pushed the point to make sure it got to air, that's what got me a lot more work (Personal interview, Nov 26, 2008).

Understandably creativity comes in various forms. The quote above describes creativity taking place in two ways. Firstly, time-future as a form of metis or cunning intelligence enabled the professional to 'see' good television in the making, and secondly, the skill of the professional to 'give good television' to the director through the understanding of all the systems, as part of the IP of the collective. The

conduit to creativity for McDonald and Dallimore lay in the use of those key skills and attributes, gained through experience. However, the experience was gained inside the field of live television, and is termed here as 'live' masteries. The following section outlines the theoretical underpinning of the hypothesis. It shows how professionals learn to work in the field of live television, and how they attain a set of consummate masteries, as established in the previous chapter, applicable to their role within the collective.

The theory of 'live' masteries: introduction

The outcomes of the research are found in an understanding of 'time-future'. It plays an intrinsic part of how live television is made, and how people who work in live television think. The synchronous, momentary and future actions undertaken in a collaborative environment, holds the key to understanding how we learn to teach television production.

Where do people who work in live television get their skills? Tacit knowing is described further in Polanyi's work as "…two kinds of things" (or two terms) which have a logical relationship" (1966, 9) in that "we know the first term only by relying on our awareness of it for attending to the second" (10). Investigations into the work of Ricoeur in, *Memory, History and Forgetting* suggest that in order for us to know something we need to have a memory of what it is we need to recall, that is: "…we have nothing better than memory to guarantee that something has taken place before we call to mind a memory of it" (2004, 7). The relationship between Ricoeur's theories on memory, Polanyi's on tacit knowing, and the extension of those theories by researchers such as Noble and Watkins (2003), and Letiche and Statler (2005) could be seen to have come from Plato, as quoted by Ricoeur (2004, 8), when he recalls Plato's words: "Can a man who has learned something not know it when he is remembering it?" It is here that the investigations into time-future become apparent.

The following theories help define 'how' a television production crew operate in time-future, in that each person on the team has memories that have been learned. It is the recalling of the memories, on what appears to be different plains of

consciousness, during actions in the making of live television, and where these memories (gained from knowing) have come from, that require further explanation.

The equation

The way forward is to break down perceived ways of learning into parts of an equation. In total, if the seven parts of the equation are called upon at specific times, they provide ways of knowing that provide the recollection of memories, for actions taken, to produce live television. It is during the time-future phase of our actions that the true understanding of the theory and practice divide begins to fall apart; as all actions are based on contextual knowledge experienced as part of the habitus. The equation made up of seven parts is outlined below.

1. *Recitation through repetition or knowing the systems*

The first part of the equation is recalling what we have learned, and being aware of our knowing. According to Ricoeur, as children we often learned nursery rhymes and poems by reciting them by heart. This form of learning by recitation has often been described as "the preferred mode of transmission, under the direction of educators" (2004, 60-61), which allows us to remember. Recitation is used by many of us today, in areas such as medicine and science. The need to memorise lists, systems and protocols in our work and everyday life is often achieved through recitation, and called upon when required. Therefore, the first notion of learning that seems to be understood is *recitation through repetition.*

2. *Memory in two parts*

However, Ricoeur advocates: "The return of a memory can only take place in the mode of becoming-an-image" (2004, 7). Further to the recollection of memory in the form of an image, Ricoeur suggests that the art of memory is in two parts, the first of which manages the selection of the place the memory exists in, while the other part contains the mental images of the memory (62). In this way the search for the memory, and the evocation as "the presence of the absent that was earlier perceived,

experienced, learned" (26), makes it easier to recall the stored images. *Memory in two parts*, as defined by Ricoeur (2004) is the second part of the equation.

3. *Withdrawing ourselves from the action of the moment*

The third part of the equation is, that in order to recall the past in the form of images, we need to "*withdraw ourselves from the action of the moment*" (my italics) (Bergson as quoted by Ricoeur 2004, 94), during the art of remembering. The point raised by Bergson can begin to be understood as the way in which television professionals operate whilst working in live television. For example, as a professional reflective practitioner in my capacity as a vision mixer, I recalled memories that I had learnt through recitation of experiences. I was not aware of recalling the memory as it appeared in my minds eye, as the right move to take in the future, while I was already making a move in the present. It is vital to point out that this evocation is instantaneous with the present. On reflexion, whilst vision-mixing as part of a production team, it is vitally important not to focus on mistakes made in the moment, as it clouds our judgment during the need to fill in the next move, and to line up the moves that may come after.

The discussion so far has centred on individuals. In order to begin to unravel the process whereby individuals learn as part of a live television production team, the first three parts of the equation; *recitation through repetition, memory in two parts* and *withdrawing ourselves from the action of the moment* require expansion. It is understood that learning by recitation has its place in education, but how do television professionals who need to work as a synchronous team operate?

4. *Knowing how grounded in actions*

The forth part of the equation goes on to describe *knowing how, grounded in actions.* A respondent described; as an analogy, how he was able to work effectively in live television through having mastered:

> The system; because there is a system in everything you do in life, right? You can't drive a car unless you have a system. You need to

know to get in, turn the key on, put your foot on the clutch and drive the thing away. After a while you do it without even thinking (Anonymous, personal interview, Oct 27, 2008).

Having learned to operate within the live environment by recitation of a system, the operator was free to act inside the moment without any obstructions. As Polanyi (1966, 20) put it: "The skill of a driver cannot be replaced by a thorough schooling in the theory of the motorcar". Here we see recitation in place and more importantly the recalling without thinking, as discussed by Ricoeur and Bergson (2004). How something works through actions, informed by intellectual knowledge as a contextual understanding of the system, is instantaneous. It also requires the use of all the elements, which are the car, the road, the signs, and the codes of driving, to work. All the elements of a live television program are manifest in this analogy of driving.

The forth part of the equation comes close to what has been described as tacit knowing. However, tacit knowing suggests we act without being able to verbally explain our actions. In this context, 'language' as verbal communication, is not adequate in explaining what we know. It is the language of the field that helps guide our actions. For example, a vision mixer can consider the actions of those around them, to recall the correct action to be taken. During a production, a camera operator executes a slow zoom into a singers face, and just as the singer finishes the note the camera tilts up into the lights. The next shot is a wide shot at the end of the rendition. The vision mixer is required to mix to the wide shot, and arrive at the end of the mix on the end of the last note of the performance. All of the vision mixer's skills of knowing are called into action, and the mix is executed at the same speed as the camera's tilt, and within the time frame allowed by the endnote.

5. *Ability to work in a multimodal environment*

The fifth part of the equation is the *ability to work in a multimodal environment*. The example above includes several elements such as the camera and its framing, and composition and timing, in addition to the music and singers voice found inside multimodal environments. The actions by the camera operator, the singer, and the

band are the language that communicates to the vision mixer. Here one finds multiliteracies that go beyond written and spoken language to other forms of texts, which are present in modern society. According to Kress, Kalantzis and Cope (2000, 158), synaesthesia as the "interaction of many semiotic modes in a text", can be seen in live television from two sides firstly, from the point of view of the audience, and secondly, the point of view of the production team. According to Kress, Kalantzis and Cope:

> Synaesthetic activity has been suppressed in institutionalised education, owing to the social and cultural dominance of language in the written mode in the public domain (2000, 159).

Has the suppression of multi semiotic modes been overlooked, and in so doing has the unspoken language of certain fields including live television become obscured? The field, or habitus that is live television contains its own form of synaesthesia. During a live event, television professionals are constantly translating and transferring "meaning from one semiotic mode to another semiotic mode" (Kress, Kalantzis and Cope 2000, 158). In this "multimodal semiodic landscape" (158) there is the existence of "real innovation" (158).

Let me explain further, Ricoeur (2004, 7), believed "the return of a memory can only take place in the mode of becoming-an-image". It is obvious that television professionals work with images, and all the components inside the images that make up a program. As we remember in the form of images, it would suggest that professionals working in television production could be seen to have a heightened sense of image processing, in addition to other literacies in time-future. In time-future the possibility of a collective memory begins to emerge.

6. *Individuals gaining knowledge through collaboration*

The sixth part of the equation looks at how *individuals gain our knowing through collaboration* with the team. The means to work in a multimodal environment in time-future is not new to television professionals. In this, a consideration of how television professionals communicate with one another through multiliteracies, and how we gain the knowledge to be multiliterate requires reiteration. In order to place

the sixth part of the equation in context, the role of the vision mixer will be analysed further. Bergson in *Matter & Memory* as cited Ricoeur (2004) makes a distinction between:

> A series of different 'planes of consciousness,' beginning with the plane of 'pure memory' not yet translated into distinct images, and going down to where the same image is actualized in nascent (beginning to exist) sensations and incipient (to become apparent) movements (2004, 188).

As an example of Bergson's theory, there are moments when a vision mixer needs to set up chroma-keys, and other special effects while cutting a program as it is broadcast live. It is here the elements involved in all aspects of vision mixing, whilst working with other live elements such as the cameras, lights, sound and performers, places the collaborative process on another plane of consciousness. The vision mixer is working in time-future along with all the live production team, while at the same time setting up effects, such as those observed during the role of the vision mixer at the cricket. During the live recorded segments:

> The vision mixer is sourcing pre-recorded effects in the desk and setting up and entering new ones while he is participating in the recording of these packages. He cuts the shots to line as the director call them and even cuts prior to a call when the commentator asks the player a question as his reaction is quicker than the director's call (Excerpt from personal observation notes Oct 26, 2008).

On one plane of consciousness, the vision mixer is analysing the desk and setting up the effects for the live broadcast. As Johnson said: "I can cut cameras with my left hand while my right hand is setting other effects up" (Personal interview, Nov 26, 2008). While on the other plane, which in this case is an unconscious action, described by Polanyi as tacit knowing, are the actions of the 'cut'. However, the vision mixer is also conscious of the commentator and the director, and according to Johnson "if someone has caught the ball and then thrown it quickly the decision to stay, or cut to another camera is one that I make as well" (Personal interview, Nov 26, 2008). Either way, Johnson cuts at the exact moment deemed faithful to the flow of the visual narrative. He cuts without thinking. However, in order to achieve the mastery, he needs to have the knowledge acquired during experience of the habitus.

The six parts of the equation that make up the 'knowing how' are *recitation, memory in two parts* and *withdrawing ourselves from the action of the moment* as individuals. *Knowing how grounded in actions* and *working in a multimodal environment* as part of a team, and finally as *individuals gaining knowledge through collaboration (habitus)*. The parts of the equation can be observed in Johnson's assessment of how he works in time-future:

> I need to have an idea of what everyone else is doing and what problems they could face if they can't see everything that we are sending them…I've got a system but it's been born probably out of how I was trained and it's more one of those things I do without thinking now. You have to have a good idea of what you want before you go about doing it otherwise you cause yourself all sorts of problems. Being given a set-up to build, you certainly need to analyse it very carefully and you need to be able to work through what problems may come up…I think also it's an experience thing. You'd have to have experience of doing the same thing a few times to know what would work and won't work. But you need to be able to problem solve pretty quickly (Personal interview, Nov 26, 2008).

The equation and its first six parts, reflect the inherent skills and masteries of the live television practitioner. Each member of a live professional television crew utilise the six parts of the equation in differing ways. However, in order to realise intellectual creativity inside live television, a set of consummate masteries termed here as *aesthetic masteries*, need to be achieved. All the aesthetic masteries are the actions utilised at the point of going 'live', and are found inside time-future which as established earlier means, instant and simultaneous forward time analysis of all aesthetics. It is the aesthetic masteries, as intellectual creativity that set live television professionals apart from filmmakers.

7. *Collective knowing*

The seventh part of the equation is *collective knowing* which contains the aesthetic masteries.

The need for precision timing, along with searching and recalling memories to act upon as a team, comes from a collective knowing. During live multi-camera television, not only are the individuals searching, recalling and acting of the instant,

they are doing the same as a collective. And as individuals and a collective, they are also searching, recalling and preparing to act several memories in advance whilst still acting on the memory of the moment. Therefore, the seventh part of the equation is *collective knowing*. The ability of a professional television crew, to bring all the elements of a live production together, relies on a high level of *knowing how* each person works with their tools as a collaborative process in *time-future,* and time-future encompasses all the aesthetic masteries.

The aesthetic masteries are the focal point of live television as they are the implicit use of 'time' past, present and into the future.

Aesthetics masteries

The aesthetic masteries drawn from all the data are found inside time-future:

1. **Timing** (when and when not to cut) – instant, simultaneous, of the moment, governed by immediacy, exact, perfect.

2. **Flow** – visual, aural, time continual.

3. **Rhythm –** sequence, tempo

Aesthetic masteries are involved when a vision mixer knows at what precise time to begin a mix at the end of a camera zoom, and complete the mix without the camera coming to the end of the zoom. For example, music, a vocalist's note or camera moves used by the vision mixer as the source of the timing, can produce varied results depending on the actions of each member of the crew, and all the elements at play. The exact timing of the mix, in rhythm with the continual visual and aural narrative, is reliant on the vision mixer not the director, although the director has prescribed the action; the action of the mix belongs to the vision mixer.

Fitzwater's description, and my own reflective awareness of the term time-future, as an instant and simultaneous forward time analysis of all aesthetics, can be used as a starting point in unravelling how the complete set of consummate masteries is obtained. Television professionals arrive at a point where they are free to operate

within time-future, based on all the parts of the equation described above. The aesthetic masteries described as timing, flow and rhythm derived from knowledge grounded in the six parts of the equation have been established as key to the consummate masteries of the creative intellect of people who work in live television. The following paragraphs will break down the aesthetic masteries and define the three components.

- *Timing*

According to Ricoeur, "…spontaneous recollection is perfect from the outset; time can add nothing to its image without disfiguring it; it retains its memory in place and date" (2004, 95). Spontaneous and instantaneous recollection can be seen to be the *timing* that is one part of the *aesthetics masteries*. Even a fraction of time either way, during spontaneous recollection, can disfigure the *timing,* or destroy the perfect moment.

- *Flow*

The other two parts of aesthetic masteries are flow and rhythm. The two cannot happen as an individual action. The *flow* relies on a continual motion, and relates to what is happening inside the moment, and how it moves forward. It is not the same as time-future, which is a combination of all the aesthetics of the moment, at the right time, and into the future.

- *Rhythm*

The flow also relies on the collaborative processing of the habitus, and the flow changes according to the collaborative outcomes. For example, a dance routine that has a certain *rhythm* may be in progress with one of the cameras covering the dancer in a wide shot. At a point in time (defined as the timing), the dancer twirls, and the vision mixer is required to mix (dissolve from the wide shot) to a close shot of the dancers face. The camera operator who is panning the camera, to keep the dancer in shot, keeps the movement at a constant speed, to maintain the *flow* in synchronisation with the dancer's movement, and the vision mixer needs to keep the same *flow* through the mix to the next shot. The dancer, the camera operator, the panning of the camera, the speed of the mix by the vision mixer, and the music's *rhythm* are all working together. If on the close shot the mood (*rhythm*) of the music

changes, and the dancer changes tempo, the sequencing of the shots, which can include their length and composition, may change. However, the *flow* continues on, albeit at a different pace.

Placing the above information into the realm of filmmaking, the contrast between making film, and making live television becomes apparent. Generally, on a film location each image is set-up as a separate shot. In both film and television a large number of crew are responsible for making sure the shots fit together. In film, the crew has time to search, recall and act on memories. They have time to ask questions, and try out different acts prior to selecting the image they want. However, in live television the need for the images to fit together is immediate, and each crewmember is totally reliant on each other crewmember, to achieve the correct fit.

The third form of time is *timing*. A vision mixer's sense of timing is their ability to count the measure of a source while it is on air. On-air refers to the shot as seen by the viewer, with the timing being how long the shot is held to establish the meaning, as interpreted by the director (or vision mixer). The illustration below has been devised to show the three forms of time more clearly. The horizontal line (time-future) represents the televisual narrative in progress from left to right, with the vertical lines (moment) representing the 'cut' points, or changes from one camera to another. The timing is the length of time the source (camera) is held on-air, before cutting to the next source (camera), at 'the moment'.

Diagram 4. Aesthetic masteries
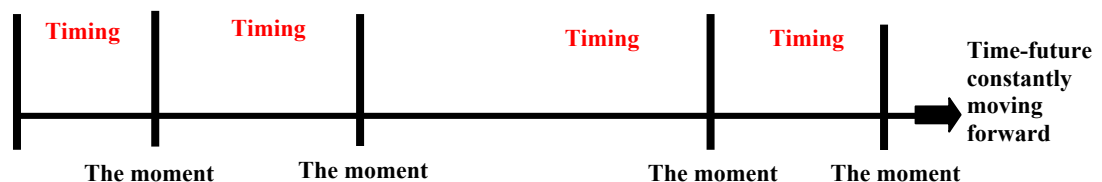
However, as the field of live television has been described as a form of metis, the diagram is also transformed due to the strategies at play, caused by the non-linear interaction of all the elements of live television. The only linear component is time-future, in the form of the narrative.

In summation, the forms of time used by vision mixers are:

1.   Time-future: the ability to know and anticipate the director's interpretation.

2.   The moment: having the ability to know the instant in time to perform a transition from one source to another.

3.   Timing: the measure of a source while it is on line.

The ability to work in live television, utilising the set consummate masteries that include a thorough understanding of 'time' in three parts, as described above, comes from years of experience. A vision mixer uses and controls time much like a soccer player controls a ball. Whilst working in the present, they are constantly rearranging and strategizing their moves in relation to the rest of the team, which surround them. In this way it is likened to metis as, "a complex, but very coherent body of mental attitudes and intellectual behaviour" (Detienne and Vernant quoted by Letiche and Statler 2005, 1) applied to transient situations.

In needs to be recognised that 'time', as described above for a vision mixer, is not necessarily the same for all crewmembers. Each member of the crew uses time in different ways. For example, a camera operator uses time to produce a shot that fits the director's interpretation of the narrative. All the shots produced fit in-between shots offered up by other cameras, with the beginning and end (*moment* as seen in Diagram 4 on the previous page) slotting in seamlessly; as a transition point, and the body of the shot which tells the story the director wants told, at that particular *timing* (Diagram 4). During the timing phase the camera operator needs to be in sync with various other texts including the sound, choreography of actors, or other on-air persons, in addition to the emotion of the piece, or perhaps the lighting. The camera operator achieves the timing by the framing, shot size, composition and the movement used within the shot, in choreographed moves with the action.

During a live production all the crew are using varying forms of time. It is similar to any team sport, such as soccer, or an orchestra during a performance. All the team members are taking part as individuals, who move in and out of the full game or performance, keeping time, and using time in their own way, for example a football winger who takes the ball down field, to set it up for the striker to shoot a goal. Once the winger has passed the ball, he will move to another place in correlation with the

other players, and when the striker kicks the ball, the strategies will change dependent on the direction of the ball, and success or failure of the kick. In this way the team is driving all the varying forms of time forward, in the most important time of all, time-future.

In conclusion

The findings have presented the theories of learning, in line with how a television professional works during a live production. They show how the live television professional calls actions to memory, and utilises both conscious and unconscious knowledge of the systems and processes to inform the televisual narrative, with an individualistic and communal creativity inside time-future. This creativity, shown to be intellectual creativity, is supported by previous work on creativity and theories of learning, in particular metis. The evidence collected, collated and analysed during the research, provided a final set of consummate masteries, which are applicable to all professionals who work in the field of live television. These masteries are:

Table 11: Consummate Masteries of the Television Professional

• Passion	• Teamwork
• Work ethic	• Visual and aural literacy
• Focus	• Creativity
• Enthusiasm and stamina	• Aesthetic masteries
• Flexibility and be able to multitask	• Metaliterate
• Speed and Accuracy	• Know the systems
• Excellent verbal and nonverbal communication	• Experience

It is evident that one of these consummate masteries is not found in film, and therefore a new way of approaching models of teaching multi-camera television production is needed. The key skill is the set of aesthetic masteries, which are constrained by time, in various forms as discussed.

The list does not include specific craft skills, as it has been found that application of the set outlined, provides a learning platform for the intellectually creative use of equipment. Furthermore, the most significant outcome of this research is the concept of time-future including the aesthetic masteries, which set the 'live' television professional apart from their film colleagues, and it is within the concept of time-future that a different form of creativity, or innovation exists. Herein lays the fundamental differences to why we need to think about new ways of teaching television production. The fundamental difference between live television and film production is that in the field of live television, actions happen 'in the moment' in real time, within a synchronous and tightly formed team. Furthermore, the elements that make up the aesthetic masteries of flow, rhythm and timing, establish that people who work inside live television, recall memories to action differently from people who work in film. The aesthetic masteries found inside time-future require a pedagogical model, whereby real time strategizing, as a synchronous team can be learned. The immersive model at the New Zealand Broadcasting School provides further evidence that embodiment in the learning process needs to be authentic, in that the procedures and processes employed in producing live television are industry standards.

On reflection, the immersive model at the New Zealand Broadcasting School is a healthy learning environment. The feedback from the students throughout the course, in addition to their continuing success with twenty-one of the twenty-three now placed in paid internships (the final unit of their degree), is evident of a successful pedagogy. In light of this document, and the research outcomes, the ways in which television production is taught at Australian universities, and the needs of the television industry needs consideration.

Moreover, the need for universities to reassess an individual's creative input during live television production, and indeed all forms of new production is overdue. The basis of the film and television industry is 'the narrative'. The thesis has established that people who work in live television are engaged in televisual story telling, just like their film counterparts. However, live television is a televisual narrative produced in a linear sequence in 'real time', and not the same as film narrative, produced in a non-linear sequence over a length of time. The methods of making live

television are not the same as making film, and in this respect the skills and attributes of film and television professionals are dissimilar. As outlined above, the dissimilarities are evident in the aesthetic masteries, and all the elements that make up time-future.

"Creativity is a bit like pornography; it is hard to define, but we think we know it when we see it" by (Mitchell, Inouye and Blumenthal; 2003, 7). The creativity found inside the field of live television can, and is seen to exist as the creativity of the individual, for example the director's vision, or the way a camera operator frames a shot. However, in respect to roles not considered to be 'creative', in as much as the output of creativity cannot be seen, intellectual creativity as a form of metis does exist. Furthermore, it has been established that unless you know the language of the field implicitly, the sighting of creativity can be obscured. Inside the field of live television the outcomes are a real time collaboration of the team, utilising all their consummate masteries, and the elements of metaliteracies in a continuous, synchronous output. Therefore, the output is a team working as one, with individuals and the team 'feeling the game' as strategic moves. The strategic moves, as aesthetic masteries, are where intellectual creativity occurs.

The final chapter, supported by the data examined so far, and the additional research presented in the Appendices, emphasises why the problems of the live television industry have not been solved by the academy. However, it seeks to provide a way forward that will emcompass new pedagogies and future research around the creative attributes of the live television professional.

Chapter 7
Conclusion

This concluding chapter brings together the evidence to support the need for the academy, and the television industry, to reconsider their approach to pedagogical models employed at Australian universities. Basically, universities have overlooked the needs of the live television industry, due in part to a perception relative to the creative elements of broadcasting. As new technologies bring film production closer toward the technologies of television, the time is ripe to open up debate over pedagogical models that will benefit both industries, well into the future. In addition, Government policy relative to film and television is constantly evolving and needs to be reassessed in light of these issues.

In many cases policy change is a necessity brought about by technology. An example of this is a 2005 report on the conversion to digital television, and the allocation of datacasting transmitter licensees, presented by the AFC to the Australian Communications and Media Authority (ACMA). The AFC in its capacity as an industry watchdog, stressed the cultural objectives of Australian content should not be disadvantaged by foreign programming or the allocation of licenses (AFC 2008). Regulations and policy cover various issues. Generally, television as part of the cultural industries is "a vital element of our national sovereignty, providing the opportunity for the expression of the nation's regional, ethnic and historical diversity" (AFC 2008).

The commercial networks have their own regulatory body in the form of FreeTV Australia. FreeTV is a body governed by a board of directors representing all of Australia's commercial free-to-air television networks. The board and its committees are involved in television regulation and policy, and often make recommendations to Government based on their own research.

Just as policy change by Government affects the television industry, so does a change in Government. The Liberal Party held Government in Australia from 1994 until 2007, and during that time a number of government departments and funding

bodies evolved. Since the change of government in 2007, from Liberal to Labor there has been a juggling of portfolios, however as of 2011, the division between film and broadcasting (television and radio) still exists. As the digital broadcasting industry monitor:

> The ACMA is responsible for the administration of media ownership laws; assessing control of commercial broadcasting services, and issuing directions to remedy any breach of ownership and control rules (ACMA 2010).

It may be said that the division is becoming greater in the context of policy and guidelines by regulatory bodies.

The digital age provides a greater selection of distribution outlets to the audience including broadcasting, the Internet, DVD's, Personal Video Recorders (PVR), Xbox, Play Station, mobile phones, and other personal devices such as iPods. In 2006, The Cultural Pathfinders Project found that:

> Digital technologies are having a radical impact on broadcasting. The converging technologies that are creating the digital content industry will soon render the concept of 'broadcast' television obsolete (ISBA 2008, 3).

However, access to live programs available on demand are using new technologies, and with the move by film into the realms of digital technology, there is a need to rethink policy, and with that the contribution of all professionals in both industries. As established, sport and other live events programs are a substantial part of the television environment. The statistics supports a very strong television industry, with the capacity for the use of multi-camera masteries to be utilised in the future in on-line streaming. As film and television merge, with the growth of digital technologies, the evolution of new distribution platforms, and user interaction supports the need for receptive and amenable discussion by all the stakeholders. In order for live television, and its value in production to the screen industry; in addition to its economic status in the Australian social sphere, are retained and allowed to grow, a number of points raised in this thesis need reassessment. The data examined along with the tests in the field suggest that:

1. Universities recognise the merging of film and television through new technologies, and acknowledge the fact that television is not dead, and that it has been seen to exist and contribute to the Australian economy through live televised sporting events and other forms of live entertainment.

2. Although distribution platforms such as the Internet and mobile devices appear to signify the demise of television, in reality the skills required to produce multi-camera productions for these platforms is still evident, and found to exist in on-line streaming.

3. Creativity is not confined to certain people and genres of the film and television industry. As outlined and validated in the examination of the data, intellectual creativity exists in live television, and can be observed by stakeholders through the language of the field.

4. In order to obtain a set of skills and attributes required to work in the field of live television, an on-going process over an extended period of time, suggests that consummate attainment occurs inside the environment of live television.

5. As the Australian film industry finds it difficult to absorb all the graduates from film and television degrees, there are advantages in directing students toward television production where there is an industry need.

6. There is a need to structure television production degrees toward live television. Examination of data suggests that viewers of live events such as sport represent a large portion of the television audience.

7. Undergraduates need to acquire attributes aligned to their degree such as self-discipline, time management and organisation. The perceived understanding that students arrive with these skills needs further investigation.

All the information above, and the evidence presented, strongly suggests that teaching television production inside the environment of live television, does work. This is evident from the course presently being taught at the New Zealand Broadcasting School (NZBS), at the Christchurch Polytechnic Institute of Technology (CPIT). During the immersion process, such as the one examined at the NZBS, students learn the language of television, which enables unambiguous

communication inside the team, particularly during live productions. In addition, the tutor/lecturer evaluations examined revealed that different structural models seemingly have an impact on student/teacher relations, and course outcomes. The structured immersive degree allowed students immediate reflection and feedback, while the flexible degree, a pedagogical model employed at most Australian universities, did not provide an environment for a cohesive team.

The immersion process illustrated by the degree at NZBS enables students to take in knowledge, hone skills, and build on dispositions either inherent or learned. Over time, the recitation of the system becomes 'second nature', enabling the students to free up energy to be more innovative. The reflective process allows students to test solutions to problems with the next project or production, which overlaps the previous project, thus building on analytical and problem solving skills. During the immersion process, experience is built up and retained more readily, and students are able to reflect with more immediacy on problems as they arise, and begin to work more fluidly in time-future. However, universities who offer television as part of their degrees need to provide resources and equipment in line with industry, in order to give students the skills and knowledge that reflect industry standards and processes.

In light of the results of the research, a future pedagogical model for live television production, suggests a move toward block learning. The learning, set in an authentic, real time environment, needs to mirror industry standards and incorporate learning outcomes relevant to the inherent skills and learnt masteries outlined. The model is best served by a structured degree with units specific to live television, and the contextual underpinnings of the industry now and into the future. As outside broadcasting is an area not served by universities other than Charles Sturt, a mobile unit could be utilised by a number of universities and colleges and save on resource and equipment costs. The role of all live television production roles needs further clarification, in line with the intellectually creative underpinnings of all roles. Although seen as vocational, all live television production roles require the contextual knowledge to produce a televisual narrative as part of a real time, synchronous team.

However, the research has found that a division by the screen industries into technical and nontechnical has had a significant impact on the approach we have to teaching television production at Australian universities. The investigations have led to an understanding that all forms of television are *televisual narratives*. In the process of degree development, the discipline of live television has been misunderstood and neglected. The neglect of educating live television professionals in a liberal humanist environment appears to have happened on several levels. Firstly, an oversight by the television industry and universities to recognise the intellectual creativity that exists within individuals, inside the collective that is live television. Secondly, the tradition by industry to categorise live television roles as technical functions, with a pervasive notion that many roles merely require 'button pushes'. Thirdly, that all forms of television tell stories, and the omission of televisual narratives, particularly in the field of live television, based on the first two oversights, needs to be addressed. And finally, project based immersive learning observed by people outside the field as vocational education, does not suggest a lack of complex intellectual creativity.

As discussed, creativity is seen to have several forms. The modern concept of creativity suggests something new or innovative. However, it does not suggest what form this innovation takes. It has been established that creativity had two forms in ancient history. Although both saw creative genius as spiritual, the Greeks and Romans formed differing views. In Greece the Gods inspired individuals with a creative genius as an unconscious process, while the Romans attributed creative genius to an inner spirit or daemon, which everyone had from birth. This inner spirit was embodied in the *genius loci,* or particular groups, and within particular localities suggesting creativity was communal (Negus and Pickering, 2004, 138). An open mind on what constitutes creativity is intrinsic to understanding why Australian universities have failed to meet the needs of the television industry. Further, the industry has played a part in failing to provide a true understanding of the industry to the academy. Both need to reassess the creative input provided by all live television professionals. Based on the findings presented in this paper, and the data collated as evidence to substantiate the hypothesis, this thesis also seeks to open up discussion in order to contribute to academic and industry pedagogies, as well as circumscribed government policy surrounding the field of live television.

APPENDIX 1.

The background in perspective: industry and audience

It is evident that television and film are experiencing change, as both forms of production are driven by new technologies, distribution platforms and program content. This state of flux leaves many in the industry wondering where it is all going; what type of content will the audience want and in what form. Added to the mix is an audience that is no longer passive but pro-active; an audience that has become the actor, producer, director and distributor; such as the videos that pop up on YouTube or My Space.

Although there are new ways of watching television programs such as on-demand via the Internet, on a PDA or our mobile phones using other forms of telecommunications, there is still a need for content. If 'content is king' as described by Tim McDonald, General Manger Seven (Aug 26, 2008), it would appear that the viewing habits of the Australian audience, would provide evidence of the type of content that is in demand. Examination of what the Australian television audience watches highlights the size of the problem and the misconceptions surrounding the needs of the television industry. The following statistics have been provided to show the types of programs that people watch. In addition to a spot survey they provide clear evidence of television as a major industry in the Australian economic sphere. More importantly the types of programs people watch are made using the multi-camera live television format.

Value and activity estimates by production genre, shown in the table below for the years 2006/7, are the most up-to-date at the time of writing. The value of sports production and other events that follow the practice of live production is evident. Figure 8 below provides solid evidence that live production contributes significantly to the economy with sport alone contributing $268.4 million.

Exact copy from a source:
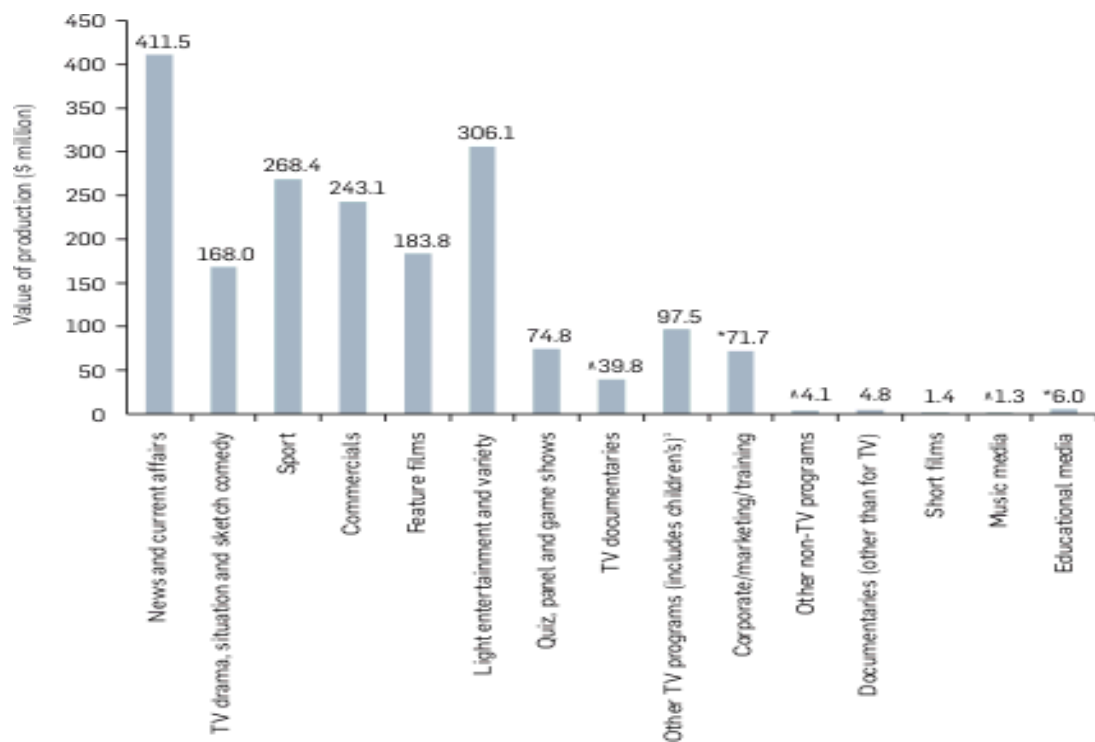
Figure 8 Screen Australia: Value and share of production activity by production type (2009)

In order to establish more accurately where the major source of production in the television sector takes place, the types of programs made in Australia and the programs that people watch were analysed.

- *What we watch*

Investigations sort to determine three aspects of the television industry. Firstly, what do people spend most of their time watching? Secondly, how much value does each production genre bring to the Australian economy? And thirdly, who within the industry makes these programs and where do they get there training? The methodologies used where, an evidence based analysis of free-to-air programs under specific genres over a random sample of days and the retrieval of data from Screen Australia (previously The Australian Film Commission AFC) website.

Random survey

A random survey was conducted on the types of programs aired and how many hours of the programs were broadcast over a period of a week in July 2007. The purpose of the survey was to establish what types of programs where being broadcast on the free-to-air channels during an average week. The programs people watch are investigated in two parts. One, what is broadcast and two, what people actually watch?

Figure 9 shows the number of genre hours broadcast over a period of 6 hours from 6pm to 12pm during the period $6^{th} - 12^{th}$ July 2007. The free to air channels included in the random survey were TEN, Nine, Seven, ABC, ABC2, SBS and the local community station Bris 31. The genres hours or program types were: entertainment, sport, movies, news, children's, documentary, music and special. The information was collated from the on-line site yourTV.com.au - Australian TV Guide. It is evident from this graph that entertainment and sport - take up a large percentage of airtime (49%). Sport alone took 11% of airtime over the week surveyed. The following graph is produced from the information gained during the survey period - 6pm to 12pm during the period $6^{th} - 12^{th}$ July 2007.
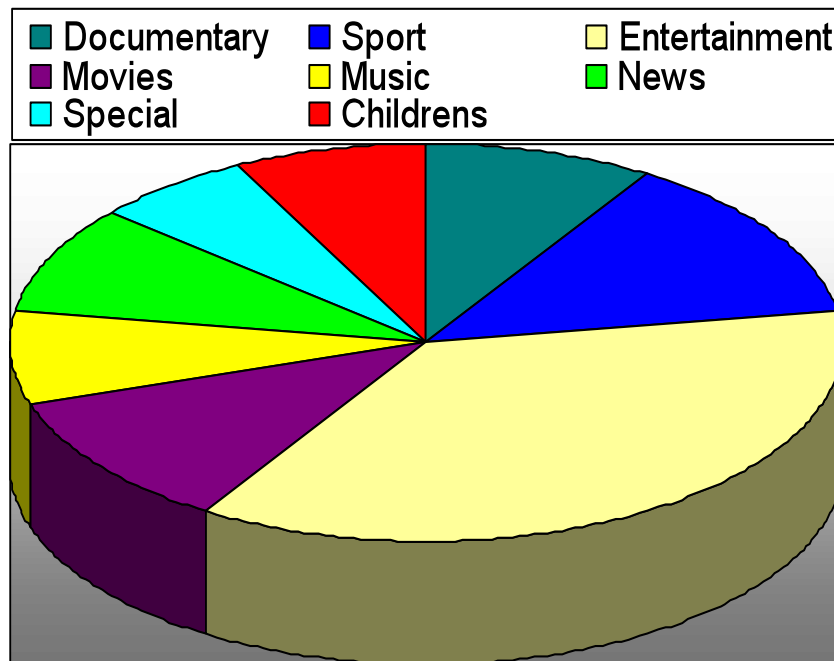
Doco 7% Sport 11% Entertainment 29% Movies 9% Music 6% News 7% Special 5% Children's 6%

Figure 9. Programs that were broadcast 6/7/07-12/7/07

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A large portion of sports production is multi-camera, and is shot on location using outside broadcast vans, or in some case mobile facilities transported in road cases and set-up on site. In both situations the output is multi-camera, either live-to-air or recorded as live, and broadcast soon after. In order to establish what people watch on television, ratings are conducted by OzTAM which:

> Is the official source of television audience measurement (TAM), covering the five city metropolitan areas and nationally for Subscription TV (OzTAM, 2010).

Screen Australia collated the survey conducted by OzTAM, of viewing habits including the top 20 programs as rated on free-to-air television, and the share of hours broadcast (per genre). The following data has been reproduced from the Screen Australia website, and was retrieved on August 18, 2010. There has been no data placed on the website as of December 15, 2011.

Figure 10: Exact copies from a source

Top 20 programs shown on television; Australian programs listed in bold – Five city metro Average

Figure 10   2009 Screen Australia – Get the Picture ratings surveys

Rank	Title	Network	Total people ('000)	Rating[1]
1	**Masterchef Australia – The Winner Announced**	**10**	**3,726**	**25.6**
2	**Masterchef Australia – Finale Night**	**10**	**3,293**	**22.6**
3	**Ten's AFL Finals 2009 – Grand Final: St Kilda v Geelong**	**10**	**2,878**	**19.8**
4	**2009 Melbourne Cup Carnival – Melbourne Cup: The Race**	**7**	**2,673**	**18.4**
5	**Underbelly: A Tale of Two Cities (Episode 1)**	**9**	**2,582**	**17.7**
6	**Rugby League Grand Final**	**9**	**2,528**	**17.4**
7	**2009 Grand Final Post-Match Presentation**	**10**	**2,448**	**16.8**
8	**State of Origin Rugby League – NSW v QLD (1st Match)**	**9**	**2,322**	**16.0**

Rank	Title	Network	Total people ('000)	Rating[1]
9	**Seven's Tennis – 2009 Australian Open – Day 9 Night Session**	**7**	**2,316**	**15.9**
10	**Seven's Tennis – 2009 Australian Open – Men's Final**	**7**	**2,246**	**15.4**
11	**Hey Hey Reunion Special (Episode 2)**	**9**	**2,213**	**15.2**
12	**Hey Hey Reunion Special (Episode 1)**	**9**	**2,149**	**14.8**
13	**State of Origin Rugby League – NSW v QLD (2nd Match)**	**9**	**2,134**	**14.7**
14	**Underbelly: A Tale of Two Cities**	**9**	**2,127**	**14.6**
15	**20/20 – Australia v South Africa (Game 2)**	**9**	**2,123**	**14.6**
16	**The Biggest Loser (Australia) – The Winner Announced**	**10**	**2,094**	**14.4**
17	**20/20 – Australia v South Africa**	**9**	**2,039**	**14.0**
18	**State of Origin Rugby League – NSW v QLD (3rd Match)**	**9**	**1,907**	**13.1**
19	**Packed to the Rafters**	**7**	**1,872**	**12.9**
20	**The Biggest Loser (Australia) – Finale Night**	**10**	**1,798**	**12.4**

2008

In 2008, coverage of the Beijing Olympic Games accounted for ten of the top 20 programs. For comparison with previous years, an alternative list has been provided that excludes Olympic programs.

Including Olympics				
Rank	Title	Network	Total people ('000)	Rating[1]
1	**Seven's Beijing Olympics – Opening Ceremony**	**7**	**2,824**	**19.8**
2	**Seven's AFL – Grand Final: Geelong v Hawthorn**	**7**	**2,491**	**17.5**
3	**Seven's AFL – Grand Final: Presentations**	**7**	**2,468**	**17.3**
4	**Seven's Tennis – 2008 Australian Open – Men's Final**	**7**	**2,447**	**17.2**

	Including Olympics			
Rank	Title	Network	Total people ('000)	Rating[1]
5	**2008 Melbourne Cup Carnival – Melbourne Cup: The Race**	**7**	**2,272**	**16.0**
6	**Seven's Beijing Olympics – Day 9 Primetime**	**7**	**2,226**	**15.6**
7	**Seven's Beijing Olympics – Day 1 Primetime**	**7**	**2,215**	**15.6**
8	**Seven's Tennis – 2008 Australian Open – Men's Final Presentation**	**7**	**2,207**	**15.5**
9	**State of Origin Rugby League – NSW v Qld (3rd Match)**	**9**	**2,145**	**15.1**
10	**Seven's Beijing Olympics – Day 5 Primetime**	**7**	**2,131**	**15.0**
11	**Seven's Beijing Olympics – Day 4 Primetime**	**7**	**2,112**	**14.8**
12	**Seven's Beijing Olympics – Day 2 Primetime**	**7**	**2,093**	**14.7**
13	**State of Origin Rugby League – NSW v Qld (1st Match)**	**9**	**2,092**	**14.7**
14	**Seven's Beijing Olympics – Day 11 Primetime**	**7**	**2,090**	**14.7**
15	**State of Origin Rugby League – Qld v NSW (2nd Match)**	**9**	**2,084**	**14.6**
16	**20/20 Cricket – Australia v India**	**9**	**2,077**	**14.6**
17	**Rugby League Grand Final**	**9**	**2,051**	**14.4**
18	**Seven's Beijing Olympics – Day 10 Primetime**	**7**	**2,043**	**14.4**
19	**Seven's Beijing Olympics – Day 12 Primetime**	**7**	**2,038**	**14.3**
20	**Seven's Beijing Olympics – Day 3 Primetime**	**7**	**2,015**	**14.2**

	Excluding Olympics			
Rank	Title	Network	Total people ('000)	Rating[1]
1	**Seven's AFL – Grand Final: Geelong v Hawthorn**	**7**	**2,491**	**17.5**
2	**Seven's AFL – Grand Final: Presentations**	**7**	**2,468**	**17.3**
3	**Seven's Tennis – 2008 Australian Open – Men's Final**	**7**	**2,447**	**17.2**
4	**2008 Melbourne Cup Carnival – Melbourne Cup: The Race**	**7**	**2,272**	**16.0**

	Excluding Olympics			
Rank	Title	Network	Total people ('000)	Rating[1]
5	**Seven's Tennis – 2008 Australian Open – Men's Final Presentation**	**7**	**2,207**	**15.5**
6	**State of Origin Rugby League – NSW v Qld (3rd Match)**	**9**	**2,145**	**15.1**
7	**State of Origin Rugby League – NSW v Qld (1st Match)**	**9**	**2,092**	**14.7**
8	**State of Origin Rugby League – Qld v NSW (2nd Match)**	**9**	**2,084**	**14.6**
9	**20/20 Cricket – Australia v India**	**9**	**2,077**	**14.6**
10	**Rugby League Grand Final**	**9**	**2,051**	**14.4**
11	**Seven's AFL – Grand Final: Post-Match**	**7**	**2,009**	**14.1**
12	**Packed to the Rafters**	**7**	**1,938**	**13.6**
13	**The Biggest Loser – Finale**	**10**	**1,896**	**13.3**
14	**So You Think You Can Dance – The Winner Announced**	**10**	**1,877**	**13.2**
15	**So You Think You Can Dance – Finale Night**	**10**	**1,832**	**12.9**
16	**So You Think You Can Dance – Audition 1**	**10**	**1,830**	**12.9**
17	**Find My Family**	**7**	**1,803**	**12.7**
18	**Carols by Candlelight**	**9**	**1,784**	**12.5**
19	**Underbelly**	**9**	**1,707**	**12.0**
20	**The Zoo (Tuesday)**	**7**	**1,688**	**11.9**

2007

Rank	Title	Network	Total people ('000)	Rating[1]
1	**Ten's AFL Finals 2007 – Grand Final: Geelong v Port Adelaide**	**10**	**2,563**	**18.2**
2	**Seven's Tennis – 2007 Australian Open – Men's Final**	**7**	**2,442**	**17.4**
3	**Rugby League Grand Final**	**9**	**2,422**	**17.2**

Rank	Title	Network	Total people ('000)	Rating[1]
4	**2007 Grand Final Wrap-Up (AFL)**	**10**	**2,387**	**17.0**
5	**Seven's Tennis – 2007 Australian Open – Men's Final Presentation**	**7**	**2,344**	**16.7**
6	**20/20 Match: Australia v England**	**9**	**2,306**	**16.4**
7	**Dancing with the Stars (Series 6 Grand Final)**	**7**	**2,199**	**15.6**
8	**2007 Melbourne Cup Carnival – Melbourne Cup: The Race**	**7**	**2,191**	**15.6**
9	**Kath and Kim**	**7**	**2,127**	**15.1**
10	**The Biggest Loser (Finale)**	**10**	**2,023**	**14.4**
11	**State of Origin Rugby League – Qld v NSW (1st Match)**	**9**	**2,020**	**14.4**
12	**State of Origin Rugby League – NSW v Qld (2nd Match)**	**9**	**1,961**	**14.0**
13	**2007 Grand Final Pre-Match (AFL)**	**10**	**1,913**	**13.6**
14	**Big Brother – The Winner Announced**	**10**	**1,902**	**13.5**
15	**State of Origin Rugby League – Qld v NSW (3rd Match)**	**9**	**1,890**	**13.4**
16	**One Day Cricket – Australia v New Zealand (Game 5 Session 2)**	**9**	**1,864**	**13.3**
17	**Thank God You're Here (Series 3)**	**10**	**1,860**	**13.2**
18	**One Day Cricket – Australia v England (Game 1 Session 2)**	**9**	**1,846**	**13.1**
19	**The Force: Behind the Line (Monday)**	**7**	**1,845**	**13.1**
20	**Border Security: Australia's Front Line**	**7**	**1,828**	**13.0**

Source: OzTAM; compiled by Screen Australia.

The information gleaned from the surveys produced by OzTAM, collated and presented by Screen Australia in Figure 10 above, is evidence of the high percentage of programs viewed, and produced that are classified as sport or entertainment - both generally shot as 'live', or 'as-live'. In 2008 sport accounts for 100% of the top ratings during the Olympics, and omitting the Olympics from the data, sport still dominates the ratings with eleven of the top 20 programs being sports orientated.

In 2009, 11 of the top 20 programs were sport; 2007, 13 programs were sport; 2006. Over 5 year survey period 2005-2009 sports programs took over 50% of the top ratings.

APPENDIX 2

Interview questions 2/4/08

Industry

1. What are the job expectations of graduates?
2. Does this reflect a shift in attitude?
3. Are university courses in-line with industry requirements/why/why not and do you think graduates are trained properly for the requirements of the industry?
4. How does university training compare to on-the-job or at TAFE training for film and television employees?
5. What does a university graduate bring to a job as opposed to a person from TAFE or someone trained on-the-job?
6. What areas need improving?
7. When was the last time you or a delegate from your company was involved in advising a university as to the requirements of industry?
8. How do program makers assess crew skills?
9. Who can they rely on in a studio environment and why?
10. Why is that person a senior camera operator or senior vision mixer?
11. Where did you get the desire to work in TV and why?

Academics

1. What do you look for in applicants for your course?
2. What do you base your course structure on?
3. How do you incorporate the specialist crew roles into your course?
4. Do you believe it is better to have a flexible course as opposed to a well-structured course, why/why not?
5. What is your view on 'internships', are they effective and why do you offer them as part of the course?
6. When was the last time you spoke to a cross section of industry about the effectiveness of your course?
7. How do we assess production management, producing; different job proficiencies?

1.0   Television Director

It is clear from the participant observation undertaken that a director requires a vast set of skills and attributes to undertake a basic program such as those observed and the one in which I directed. Looking at the preproduction phase up to and not including the set and light, the set of skills and attributes required include:

- Organisational – working with production office to establish crew, set, lighting, sound and production equipment requirements
- Budget management – negotiating cast, crew and production costs including all equipment, facilities and other resources in relation to the budget
- Time management – preproduction, production and post-production schedules, studio schedules, call sheets and marketing an distribution schedules
- Problem solving – in collaboration with all cast or on-air personnel and crew, and production requirements.
- Computer literacy – e.g. forms, emails, correspondence, floor plans and production software
- Analytical – e.g. analysing problems and finding solutions in relation to camera coverage or set and lighting design
- People: teamwork, negotiation and advocacy
- Leadership: in conjunction with all the other proficiencies
- Design knowledge in the areas of set, lights, sound and program styles
- Understanding the language of television
- Editorial: sound, vision and the written word
- Equipment knowledge and capabilities
- Television systems

1.1   Key Skills

Using Skillset UK (2010), a contemporary website for television production crew, the key skills of a television director were outlined as:

- Ability to conceptualise ideas and to think visually;
- Ability to decide about the appropriate graphic style and the music for the production;
- Precise attention to detail;
- Methodical approach to work with high stress tolerance and stamina;
- Knowledge of the entire production process;
- Excellent verbal and written communication skills;
- Ability to lead a team and to motivate actors and crewmembers;
- Initiative and problem solving skills;
- Ability to see the broader picture and to co-ordinate effectively;
- Budgeting and financial skills;
- Diplomacy and sensitivity when working with Writers, Producers, Actors, and crewmembers;
- Knowledge of the requirements of the relevant Health and Safety legislation and procedures (Skillset, 2010).

1.2 Production stage - performance criteria

- Oversee camera and sound check and rehearsal of shots.
- Provide final briefings to talent and crew and respond to queries as required.
- Check that two-way communication equipment is functioning
- Direct cameras and operations to achieve required style.
- Direct live switches as required.
- If directing live programs, be prepared to make decisions on the fly in the event of unforeseen circumstances.
- Monitor pace and flow of programs and take action to bring them back on track if necessary (Commonwealth of Australia, Screen & Media Training Package, CUFDRT401A 2008:291-293).

2.0 Vision Mixer

2.1 Key Skills

According to The Sector Skills Centre for Creative Media Skillset website in the UK site, a vision mixer has:

- A good understanding of the language of the transmission;
- Ability to multitask;
- Excellent organisational abilities;
- Initiative and problem solving skills;
- Precise attention to detail;
- Excellent verbal and written communication skills;
- Effective team working skills;
- Diplomacy and sensitivity, patience and tact;
- Advanced IT skills;
- Excellent visual and aural awareness, combined with artistic and aesthetic abilities;
- Excellent colour vision,
- Ability to appreciate music;
- Good sense of rhythm in order to produce accurate and sensitive transitions;
- The ability to read a musical score, or to bar count;
- Knowledge of the requirements of the relevant Health and Safety legislation and procedures (Skillset 2010).

2.2 Standardised skills and criteria of a vision mixer

The Screen and Media Training Package CUFBRD402A skills set for a vision mixer includes:

1. Communication and organisational skills sufficient to:
   - Liaise with relevant production personnel
   - Plan and schedule relevant aspects of video mixing processes

- Communicate effectively and efficiently using two-way communication devices
- Organise television and interactive media content logically and accurately
- Utilise relevant file management protocols for specified operating systems

2. Initiative and enterprise in the context of:

- Achieving creative outcomes within technical constraints
- Visualising and interpreting creative concepts
- Responding appropriately and effectively in unanticipated situations

3. Technical skills sufficient to:

- Operate specific vision-mixing equipment
- Work in both non-linear and linear configurations
- Judge picture-to-sound synchronisation
- Check and test that equipment is working to specifications
- Undertake basic maintenance of a range of mixing devices and equipment

4. Self-management skills sufficient to:

- Prioritise work tasks
- Work calmly under pressure and to tight deadlines
- Make decisions within level of own responsibility
- Seek expert assistance when problems arise

5. Literacy and numeracy skills sufficient to:

- Interpret scripts and other relevant documentation e.g. equipment specifications
- Prepare and write reports
- Document, log and file source materials, e.g. composites, video digital effects
- Record durations of sequences and measure timings for transitions and effects (CUFBRD 402A 2008:385).

3.0   EVS/Videotape operator

3.1   Standardised skills and criteria of EVS/Videotape operator

The Screen and Media Training Package CUFBRD303A skills set for videotape operators are:

- Provide production support for television productions

- Liaise with relevant production personnel to confirm written documentation or verbal instructions for treatment of source materials

- Ensure source materials are clearly identified, labelled and in a format compatible with available equipment.

- Set up and test equipment according to specified standards as required to meet source materials criteria.

- Report faults or problems and arrange for maintenance where applicable.

- Ensure destination media is prepared correctly and ready to receive inputs, including set-up of equipment signals.

- Handle source materials and destination media with care to avoid damage throughout the production process.

- Test that source materials are appropriate to the input of equipment, including standard converter parameters.

- Load and ingest source materials using correct equipment and transfer to required destination media in correct sequence.

- Apply appropriate conversions to source materials to achieve required formats, ensuring time codes and cue points are set to synchronise with equipment where applicable.

- If necessary, select, add or alter appropriate time code and cue points that meet technical and transmission requirements.

- Monitor transfers and recordings to ensure they meet required quality and technical requirements and establish cue points if required.

- Check that the destination media is in suitable condition, of suitable length and on appropriate format for recording.

- Undertake additional transfers, dubs or copies of materials as required and save in required location.

- Assist in switching video sources live to air under direction of relevant production personnel.

- Undertake editing of materials as required in close consultation with relevant production personnel.

- Author materials to a range of formats for distribution to clients and relevant production personnel.

- Complete documentation and distribute to relevant production personnel, including originals or reformatted versions of source materials where applicable.

- Archive materials as instructed and transfer to appropriate archival format according to enterprise procedures.

- Undertake accurate labelling and logging of materials and check for faults.

- Return source and other materials to originators or owners in accordance with enterprise procedures.

- Review and reflect on performance and note areas for improvement (CUFBRD303A 2008:363).

4.0   Director's Assistant.

4.1   Standardised skills of a director/producers assistant:

1. Communication and organisational skills sufficient to:
- Liaise with relevant production personnel, e.g. editors, directors, station managers
- Understand and carry out instructions and creative directions as required
- Prepare relevant documentation and production information

- Call shots and cues clearly using intercoms and talkback facilities during production
- Communicate effectively on the telephone and with two-way communication devices
- Assist with securing copyright clearances

2. Technical skills sufficient to:

- Use standard word processing, database and spreadsheet applications in the context
- Of providing production support
- Apply relevant file management protocols across a range of operating systems
- Use intercom and two-way communication devices to send and receive messages efficiently and effectively

3. Initiative and enterprise in the context of being flexible and dealing with the unexpected during productions

4. Literacy and numeracy sufficient to:

- Undertake a range of administrative and clerical duties
- Interpret production schedules, scripts, running sheets
- Accurately record timings and durations of production components
- Provide information on expenditure against budgets

5. Self-management skills sufficient to:

- Prioritise work tasks
- Work under pressure and meet deadlines
- Make decisions within level of own responsibility
- Seek expert assistance when problems arise.

4.2   Required knowledge

- Functions of technical areas, e.g. sound, lighting, camera, video operations

- Roles and responsibilities of personnel in broadcast operations and production

- Understanding of the artistic and technical elements of a production

- Broadcast terminology

- OHS standards as they apply to working in broadcast operations and working for periods of time on computers (CUFBRD302A 2008:357).

5.0   Multi-camera operator

5.1   Standardised skills of a multi camera operator

A list of required skills for a multi-camera operator from the Australian governments CUF07 Screen and Media Training Package are:

1. Communication skills sufficient to interpret creative requirements of productions

2. Ability to work and communicate effectively as a team member

3. Technical skills sufficient to:

   - Operate a range of professional camera equipment in a multi-camera environment in the context of a range of program styles

   - Communicate effectively using two-way communication devices during multi-camera shoots

4. Initiative and enterprise in the context of:

   - Making creative contributions to program ideas and outcomes

   - Responding quickly to changes in planned camera shots and movements

5. Self-management and planning skills sufficient to:

   - Work under pressure

   - Balance creative and technical requirements

   - Evaluate own contribution to creative solutions

6. Literacy skills sufficient to interpret and provide written and verbal instructions, e.g. shot lists, labelling and scripts

7. Numeracy skills sufficient to make decisions that take account of budgetary constraints

With a required knowledge covering:

1. Features of a range of cameras and accessories
2. Framing techniques and shot composition
3. Concepts and techniques of cable handling and compatibility with other equipment
4. Duty of care to colleagues and general public, especially on location
5. Industry knowledge, including:

   • Roles and responsibilities of production and post-production team members

   • Sound understanding of the creative and technical elements of a range television productions

   • Broadcast language and terminology

   • Issues and challenges that arise in the context of shooting television content in a multi-camera environment

6. Well-developed understanding of photographic principles, such as:

   • Exposure

   • Tonal relationships

   • Focus

   • Light sources

   • Sensitivity and balancing

   • Camera's interpretation of colour

   • Colour correction techniques

   • Colour temperature and compensation

7. OHS procedures, particularly as they relate to lifting, climbing rigs and use of electrical equipment (IBSA, CUF07. 2008:35-3).

APPENDIX 4 Course Analysis Sheets 2010

University	University Established	Faculty	Use of term - 'vocational' or other relevant terms.	Type of Course	Degree Title	Stream	Dominant Genre/s
Bond University	**1987**	Humanities and Social Sciences	*YES* Specific – Director, Producer, Writer, Editor	*Television*	Bachelor of Film and Television	Television Production	Comprehensive
Charles Sturt University	**1989**	Arts	*YES* TV roles	*Television*	BA (Television Production)	Television Production	Doco, Drama, News, Current Affairs
Curtin University of Technology	**1986**	Humanities	*YES* '…a commitment to publicly recognised professional outcomes' (CUT, 2007) The screen arts major combines essential analytical, creative and practical production skills to provide an excellent springboard for a career in the film and television industries (Aug 22, 2010).	*Television*	BA (Media and Information) Screen Arts	Screen Production stream	Doco, Drama, News, Current Affairs
La Trobe University	**1967**	Humanities & Social Sciences	*YES* 'The Bachelor of Media Studies is a vocationally oriented degree…' (Aug 22, 2010).	*Communication*	Bachelor of Media Studies	Video/ Television	News
Queensland University of Technology	**1989**	Creative Industries	*YES* 'This unique industry oriented degree will train you for the 'ideas jobs' in television—such as producing, researching and writing' (QUT, 2007).	*Television*	Bachelor of Creative Industries	Television Producing	Doco, Drama
University of Canberra (V) C/NM	**1967**	Art and Design	*YES* The Bachelor of Arts degree provides a flexible preparation for many areas of vocational and professional employment (Aug 22, 2010)	*Communication/ New Media*	BA (Media Arts and Production)	Major in Advanced Media Arts	X Media Doco, Drama 3D, Web

University	Other genres	Working with Actors	Audience	Script Writing (C) core	Producing	Legal	Internship
Bond University	Corporate, News, Training, Music, Magazine, Sitcom, Current Affairs, Infotainment, ENG, Commercials	Directing 1	Nothing specific poss. (Screen Studies Adaptation)	Scriptwriting 1 & 2.**C**	**Producing Stream**	Producing 1. Film Industry Producing 2. Project Development Contemporary Issues in Law and Society	YES
Charles Sturt University	Magazine, Sport, ENG, Infotainment,	Television Directing and Writing Overview	NO	Nothing specific but some in Visual Storytelling	Nothing specific	Industrial & Legal Issues in the Arts	YES
Curtin University of Technology	New, Current Affairs, Sport, Actuality, Entertainment	Drama Production – Screen Production Stream	Screen Studies Stream Screen Actualities "…the relationship between filmmaker, subject and audience is explored" (Aug 22, 2010).	Screenwriting: Introduction & Developing Dramatic Action **C** **FTV Screenwriting Stream**	Nothing specific Poss. Major Project Pre-Production	May be possible through electives	YES
La Trobe University	News, Magazine, Infotainment	Working with presenters	Audience and Communication Researching Media Audiences	Writing for Media Writing for Video **C**	Nothing specific	Media Project Development	YES
Queensland University of Technology	Entertainment	Nothing specific	Media Audiences	Film and Television Scriptwriting **C**	Producing	Creative Industries Legal Issues	YES
University of Canberra	Animation, Music video	In the subject Drama Production	Communication and Media Research	Nothing specific	Nothing specific	Professional Media Project – Students learn effective project management skills directed towards developing theoretical and applied knowledge in preparing a project budget, production planning and scheduling, risk assessments, insurance, legal, ethical and copyright issues, strategic marketing and distribution, and leadership skills.	NO

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