The analog-versus-digital debate rages throughout industries all over the world, and cinema is no exception. The implications for professional filmmakers are often discussed, but how does the debate affect film schools? NICHOLAS OUGHTON looked into this very question in his study on the current (and future) role of celluloid in global film education.

INTRODUCTION

In response to Claudio Miranda winning an Academy Award for his cinematography on Life of Pi (Ang Lee, 2012), irascible yet highly respected cinematographer Christopher Doyle fumed: ‘if it were me, I would've said fuck off [...] If somebody manipulated my image that much, I wouldn't even turn up.’ Doyle’s fulmination reflects an ongoing and contentious debate regarding the role of directors of photography (DPs) in the digital age. Doyle continued: ‘Of course, they [the Academy] have no fucking idea what cinematography is. The lunatics have taken over the asylum.’

Many DPs see their authority and authorship declining as their work is increasingly transformed and digitally reauthored downstream. A second and parallel debate concerns the continuing decline of celluloid acquisition in favour of digital capture, with a consequent collapse of the film manufacture, processing and related services. Lamenting the passing of film (and the feudally inspired polity), Frank Prinzi of the American Society of Cinematographers (ASC) comments:

The politics of filmmaking has changed with the digital world now becoming the party of choice. Much like the political climate today, money and powerful companies rule. With all the R&D (research and development) focused on digital, I don’t see film existing side-by-side with digital too much longer. I hope I am wrong."
A third and related conversation concerns the teaching of cinematography in film schools. At a 2012 colloquium in Munich titled ‘How to Teach Cinematography, Nowadays?’, participants— all cinematography teachers and practitioners— argued that ‘film [training] must be carried on as long as possible’, but added that ‘different situations have to be considered according to our respective countries’. This view appears to fly in the face of technological change and digital dominion, posing an important question: Why continue to teach celluloid acquisition in film schools? My investigation seeks to answer this question.

BACKGROUND

Some film schools have ceased teaching celluloid acquisition, while others have reduced their emphasis in favour of digital capture. The many reasons for this change include the high cost of film capture; the unavailability of film processing and telecine facilities; vast improvements in the quality of digital capture; the availability of user-friendly digital cameras; substantial advances in the scope and subtlety of digital post-production; the cessation of film-camera manufacture; the decreasing availability of motion picture stocks; and the current popularity of 3D and special effects. Despite these factors, however, many schools continue to value and teach celluloid acquisition, and the film industry still employs celluloid capture. Why is this so?

To answer this question, I decided to gather information that would throw light on why celluloid acquisition continues to be employed in educational and industrial settings, and to understand its place in the teaching of cinematography. The study was conducted within an international context and gathered data from the world’s top film schools. The project was supported by the Centre International de Liaison des Écoles de Cinéma et de Télévision (CILECT) — the peak international association of film schools, founded in Cannes in 1955 — and CILECT-accredited film schools were selected for the survey.

FRAMING AN INVESTIGATION

This investigation set out to find answers to the following questions:

- How many schools around the world currently teach celluloid acquisition?
- Why do these schools continue to teach celluloid acquisition?
- How long into the future do these schools anticipate teaching celluloid acquisition?
- What future factors may prevent schools from teaching celluloid acquisition?
- What explanations are given for no longer teaching celluloid acquisition?

I believe that the data captured by this research will assist film schools to make informed pedagogical decisions regarding curriculum design and content, and help them to deliver appropriate teaching and learning in their cinematography courses and broader programs.
METHODOLOGY

The strategy adopted in this investigation incorporated:

- a review of relevant film-education history and debate concerning the future of celluloid acquisition; and
- a survey of 146 film-school teachers from fifty-eight countries across the world by means of a self-completed questionnaire.

The survey requested 'tick the box' and one-word responses to a number of demographic and historical questions, followed by consideration of one of two central questions asking for brief responses. These were:

- Can you provide some reasons why you currently teach celluloid acquisition as part of your course or program?
- What are the reasons why your film school stopped teaching celluloid acquisition and the use of film cameras?

Responses to these two questions were subject to content analysis and classification that revealed common themes, which were scored according to popularity and importance.

Importantl, this study recognises that most screen-industry practitioners receive their education and training in film schools and that these film schools are important for the industry's wellbeing. Further, the study notes that those persons responding to the questionnaire are practitioners/teachers with contemporary professional experience and wide educational knowledge. Their views therefore have validity in both an academic and an industry sense.

ROMANTICS, RATIONALISTS AND REALISTS

Over a number of years, the film-versus-digital debate has flourished, with practitioners tending to take one of three positions.

The romantics argue for film's ability to capture nuances and lyrical dimensions that cannot be replicated through digital capture.

Meanwhile, the rationalists contend that digital capture reproduces all that film can achieve, and then some! They also argue that digital capture is cheaper and more efficient, adding that film as a medium of acquisition is dead. The realists sit somewhere in the middle, recognising that both systems have merit and that freedom of choice to employ either approach according to the task at hand is essential.

Speaking about his film Blue Valentine (2010), director Derek Cianfrance explains: 'I shot half on Super 16, for all the falling-in-love stuff, and half on digital [. . .] for all the falling out of love, the stuff that took place in real time.' Cianfrance argues that the two systems are complementary, not rivals, and that they offer two distinctive forms of visual storytelling.

Meanwhile, former ASC president Stephen Lightthill suggests that the model we've worked with for 100 years - making pictures with a very simple camera, with no fussing on set - I really think that's what the future holds for us [. . .] The digital cameras that will succeed in the long run are going to work a lot more like film cameras.

This perhaps implies that Lightthill accepts that digital cameras will eventually totally replace film cameras.

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HISTORICAL BACKGROUND

The literature informing this investigation is not extensive—perhaps because, in a historical sense, film-school academies in general and teachers of cinematography in particular are inclined towards action and practice rather than academic reflection and study. There are other reasons, too. Historically, many emerging film schools were embedded in the scholarly realms of humanities departments and cultural studies programs. These university programs did engage in vigorous debate regarding the nature of film and its place in a postmodern world, but their considerations almost exclusively focused on critical histories and on film as language or cultural object.

During the 1970s and 1980s, however, there were studies and analyses of the film process and technique. David Bordwell and Kristin Thompson provided film students with a seminal reader that explained the analytical skills that would help them understand films and film techniques. Meanwhile, Jay Kaufman and Laurence Goldstein—both filmmakers and academics—reflected on the film process by revealing the meanings embedded in film images and the techniques used to elicit those meanings. But these analyses were conducted from the perspective of the audience as observers and visual interpreters of filmed stories, rather than as practitioners constructing the stories.

In his book Grammar of the Film Language, Daniel Arijon examined the film frame in terms of cinematic language and screen geography as well as its role in planning coverage. Meanwhile, cinema historian Brian Cone traced the development of film capture and projection from the optical toys and photochemistry of the late eighteenth century to the mid-1950s adventure with 3D and later flirtations with IMAX. But any discourse regarding the soul of celluloid or nuance of film capture was absent—mainly as there were no other systems for comparison, no compelling need to justify film’s relevance.

Two books that have approached the cinematic medium in terms of film cameras, celluloid capture and the alchemical nature of the process are Kris Malkiewicz’s Cinematography, first published in 1973, and Joseph V Marselli’s The Five C’s of Cinematography. In his book, Malkiewicz intimately explains how celluloid works by recording light reflected from an object by means of a motion picture camera while Marselli attempts to draw attention to the intuitive nature of the medium at a time when pixels were barely contemplated, defining, explaining, clarifying and graphically illustrating motion picture filming techniques in an easy-to-understand way.

FILM SCHOOLS CHANGE DIRECTION

Frank Manchel suggests that in the 1980s, humanities-based film programs came under pressure to ‘become more career oriented and professionally minded.’ This movement in some cases reflected a curriculum being developed in technical colleges and institutes of technology (for example, in the United Kingdom, Australia and New Zealand), where competency-based training and skills development were the prime focus. These changes gained momentum as industry entities such as the ABC stopped training its own workforce in-house.

During the 1990s, many public film schools and technical institutes merged or became universities, thus encouraging or compelling academic practitioners to participate in the higher-education tradition of scholarly research and publication. This stimulated an increased evaluation of the nature of practice and production, and of the impact of new technology.

DISCUSSION

Interesting discussions swirl around the nature and future of celluloid acquisition, often framed in a film-versus-digital debate. On Screen fx.net, Mike Eisenberg states that: ‘With around 25 movies releasing theatrically in 3D in 2011, the money is clearly in the digital realm […] But that doesn’t mean a filmmaker has to make a total switch and give up on film entirely.’ Eisenberg continues: ‘Film will always be a part of the industry. When you listen to a majority of the film community speak, the passion for film is still alive and well.’ Meanwhile, renowned cinematographer Roger Deakins—a migrant to digital—suggests that:

Whether I’ll shoot on film again, I don’t know. [Digital] gives me a lot more options. It’s got more latitude, it’s got better color rendition. It’s faster. I can immediately see what I’m recording. I can time that image on set with a color-calibrated monitor. That coloring goes through the whole system, so it’s tied with the meta-data of the image.

However, Deakins keeps his options open, stating: ‘I would certainly consider shooting film again […] frankly, it’s not the technology that makes the great movies.’

Surprised to hear that six of the ten 2013 Oscar nominees for Best Picture were shot on Kodak film, renowned film critic and writer Leonard Maltin wrote: ‘Wait a minute. Kodak is still in the film business? And digital technology hasn’t replaced motion
picture film after all.5 Confused, Maltin turned to prominent cinematographer John Bailey to seek clarification. Bailey commented: 'film is NOT dead and many of us continue to prefer it when we are allowed to and when smart directors support us.'9

A 2013 BAFTA event titled 'Film Versus Digital: Debate' brought together a cross-section of the film community to discuss the merits of both film and digital capture. The loudest message emanating from this exchange was that film should remain an option, thus providing freedom of choice and expression. According to director Kevin Macdonald, who featured in the debate, this would allow filmmakers to pick their capture option on a case-by-case basis.

All speakers agreed that both digital and film capture were useful tools, and that — when correctly applied — each contributed in its own way to the look, feel and economics of a project. Director Iain Softley and director of production John Mathieson argued that film renders certain aspects of the image — for example, skin tones and highlights — in a superior manner. Softley talked of the 'organic and painterly aesthetic of film', while Mathieson maintained that film exhibits an 'integrity of colour that has been lost in digital capture'.

Macdonald, who uses both mediums, stated that digital was the ideal medium for capturing 'a sense of life as it happens', but added that the beauty of the moving image can 'transcend medium and format'. Mathieson also noted that there were some projects he would only consider shooting on film.16

Other practitioners have stated that any discussion regarding 'the look' of film is redundant, as audiences do not readily perceive the difference between film and digitally derived images. Tech-savvy cinematographer Jozo Zovko (who confesses to a love of art cinema) disagrees. He believes there is a discernible difference:

I just think of it as different colors and textures. I really do wish we could just keep the old tools, as well as the new ones and live happily ever after. I would have hated to have taken away the egg tempera from Andrew Wyeth and [been] the one to tell him, 'folks round here ain't using clat point no mo, now take this copy of Adobe Photoshop and this Wacom tablet and git'.9

Regarding the issue of budgets, BAFTA debate contributor Softley reported that using film during the production of his film Trap for Cinderella (2012) 'paid dividends all the way through post-production', while editor Lisa Gunning added that, on certain productions, film capture is no more expensive than digital capture when it comes to post-production.

AN EDUCATIONAL PERSPECTIVE

The last negative film-processing laboratory in Australia, Deluxe Film Laboratories, recently closed for business, citing economic reasons. This action spurred heated debate among the Australian film community. The president of the Australian Cinematographers Society, Ron Johanson, commented: ‘This is a disaster for the film and television industry here in Australia, jeopardising future training and employment’.9

Meanwhile Erika Addis, cinematographer and teacher at the Australian Film Television and Radio School (AFTRS), commented:

The availability of high-end digital cameras has certainly unshackled directors and crews from the constraint of low shooting ratios [...] Shooting ratios have [as a consequence] expanded [...] But the question is, has this liberation brought about a corresponding increase in experimentation, better storytelling, and depth of learning and more powerful works? My experience is a definite no.’9

THE SURVEY: SOME BASIC STATISTICS

During this study, a self-completed survey was sent to 146 full members of CILECT. Sixty-one members, or 42 per cent, replied to this survey, thus providing a sample size that is large enough to derive significant conclusions from.

Celluloid acquisition

Eighty per cent of responding schools reported currently teaching celluloid acquisition and 83 per cent of these schools anticipated that they would continue to do so beyond 2016. However, many schools making this forecast indicated that future offerings would depend on the availability of film stock, film processing and telecine services. Seventeen per cent of schools currently teaching celluloid acquisition believed that they would cease to do so within two years.

Fifteen per cent of the participating schools that previously taught celluloid acquisition had ceased doing so since 1998, while 5 per cent of participating schools stated that they had never taught celluloid capture.

Level of study

Of those schools that continue to teach celluloid capture, 20 per cent do so at both undergraduate and postgraduate levels, while the majority of schools (67 per cent) offer courses at an
undergraduate level only. These undergraduate courses are commonly delivered in Year 2 of the program, closely followed by Year 3, with Year 1 being the least common.

**Celluloid in post-production**

Interestingly, 43 per cent of schools that continue to employ celluloid capture also employ film in some aspects of post-production. In many cases, this is confined to basic exercises and picture-only editing. One school stated: ‘The craft of 16mm acquisition and editing is still important for understanding the development of film language.’

**THE STATUS OF FILM ACQUISITION: A THEMATIC ANALYSIS**

Themes arising from responses to the short questions included in the survey provided by those schools that continue to teach celluloid capture, in order of popularity and with weightings, were as follows:

- It encourages discipline, thinking, planning, organisation and precision (50 per cent of schools).
- It teaches craft and important technical processes such as exposure, latitude, lenses, lighting, etc., and these skills are transferable (50 per cent of schools).
- Many students want to learn film acquisition (31 per cent of schools).
- It encourages industry standards and professionalism (17 per cent of schools).
- It encourages pre-visualisation, imagination, creativity and an understanding of ‘the look’ (15 per cent of schools).
- It builds an understanding of the ‘chain of history’ and film language (8 per cent of schools).
- It enhances communication skills (5 per cent of schools).

Schools that no longer, or had never, employed celluloid acquisition in their programs, and those schools that plan to give up teaching film within two years, provided the following justifications:

- There was a lack of lab and telecine services (52 per cent of schools). Regarding this topic, a school revealingly commented: ‘While we may wish to continue to shoot on film for whatever pedagogic reasons, the reality may be that we do not have a practical choice in the matter.’
- Problems with acquiring film and the cost of film stock (50 per cent of schools).
- Problems with acquiring and maintaining telecine cameras (33 per cent of schools).
- The quality of digital images is equal to film images (26 per cent of schools).
- Industry pressure to focus on digital acquisition exclusively (25 per cent of schools).

**FURTHER DISCUSSION**

Some critical issues regarding the future of celluloid acquisition that arise from this study and that are central to celluloid’s future are as follows:

With film-camera manufacture terminated in 2011, the longevity of the world’s remaining stock of cameras is in doubt – how long will it last?

- Will the world’s film industries continue to employ celluloid capture at sustainable levels? If so, for how long, and what qualifies sustainability in the current economic situation?
- Will film manufacture, film processing and downstream services remain economically viable at sufficient locations around the world, and where would these services be located?
- How long will the accumulated bank of film cameras remain in commission?
- Will film schools continue to see compelling reasons for teaching celluloid acquisition?

The first two questions are symbiotic, difficult to answer and not critically examined in this study. With economies and markets in flux, these topics could form the basis for further examination. Certainly, celluloid capture will continue into the foreseeable future, in a boutique sense. Many filmmakers around the world believe that film acquisition should be an option, and that film capture is still the industry standard. Interestingly, some argue that, in certain circumstances, film capture is a cheaper option. But will demand for stock and services provide appropriate economies of scale and incentives for film manufacturers and film laboratories to continue operating?

Many governments subsidize their national film industries in one form or another. For example, in Australia, the Producer Offset scheme provides a tax rebate for producers of Australian projects.

*Image: Keanu Reeves and Martin Scorsese in *Side by Side*.*
Other incentives such as direct subsidies for film-processing laboratories should also be considered, as should tie-ins and collaborations between laboratory services, film libraries, museums, archives and conservationists.

With film-camera manufacture terminated in 2011, the longevity of the world’s remaining stock of cameras is in doubt – how long will it last? Motion picture cameras are robust, and have in-built obsolescence, and assuming that spare parts and maintenance skills remain, the residual stock may continue in operation for some ten to twenty years, or even longer.

The fourth question is perhaps easier to answer. A general interpretation of the evidence in this study shows that film schools around the world anticipate that they will continue to employ film capture. Those who support this notion argue that skills and abilities learned while shooting film are readily transferred to, and enhance competencies in, digital acquisition.

But some see a different picture. Matt Moriaty, an ‘N camera/steadicam operator, observes:

“There will be a point in the next five or ten years where there simply is no fiscal model that can pay to heat the negative bath, much less sustain the whole film workflow [...] Five years ago, over a few drinks, you probably could have gotten me to cry about it. But as someone [...] smacked in the middle of his career, I don’t have the luxury of moping. I don’t allow myself regret or guilt as this whole issue is so utterly out of my control.”

In a piece for The Guardian about the documentary Side by Side (Christopher Kenneally, 2012), which looks at technological changes in the film industry and which he narrated and produced, Kenan Reeves writes: The debate isn’t about whether digital is better than celluloid. It’s about giving an artist the choice. He also states: It’s unlikely that film will completely vanish [...] there is a significant number of directors still using film for image acquisition. It’s important that they have the tools to make films in the way they want to.” Reeves ends the piece by revealing that he is less worried about the fate of celluloid today than he was when Side by Side was being filmed. No doubt the future will reveal all to Reeves – and to the rest of us.

Nicholas Oughton has extensive experience in cinematography, having produced a wide range of television commercials and documentaries for national clients. He is a senior lecturer at Griffith Film School, secretary of the Asia Pacific Film School Association and an executive member of the Australian Screen Production, Education and Research Association. SE

Endnotes


15 ibid.


17 John Bailey, quoted in Maltin, ibid.


