Views

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Survey on teaching experiences in cinematography

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Abstract: In a recent survey, 125 cinematographers were asked to describe their teaching experiences. This article summarises their responses to eight question modules. The top three teaching topics are lighting design, artistic use of the lens and picture composition for film and television cameras. From all actual technological developments, digital colour grading is seen as having the greatest impact on teaching cinematography, as well as on cinematography itself. While almost all teachers use digital cameras for their daily work, about 40% still also use traditional film in their courses. Even in the digital age, the traditional film helps draw the students' attention away from technical options towards precision and accuracy in the actual recording of scenes.

Keywords: cinema; cinematography; education; film schools; television.

1 Introduction

The target of this study was to present an international overview of the teaching of cinematography performed by cinematographers. It is executed by the Centre for Advanced Studies of Film Technology at the University of Television and Film (HFF), Munich. The study aims to cover various topics, from working conditions for subject teaching and teaching methods to the personal and individual approaches of the participants. The influences of new technologies are included, as well as those of the traditional ones, the institutional frameworks for teaching and the personal motivation for teaching.

In this context, 'cinematography' refers to the composition of moving images for fictional and documentary movies and television (TV) productions, including commercials, corporate TV, TV studio and remote pickup productions, as well as free artistic productions that showcase the main features of the former.

The starting point for this study lies in the fact that cinematography is most commonly taught by professionals who have recent creative experience in film and TV. Hence, while they are professional cinematographers, they are also (mostly) self-taught teachers. Many cinematographers teach at various institutions at the same time. Consequently, the differences within the institutional frameworks are also considered.

The typology of the institutions that offer cinematography courses has a rich variety and includes both state and private institutions such as film academies, schools of design, university film departments or creative schools, film departments at academies of fine or performing arts, commercial or non-commercial training centres, broadcast academies and so on.[1] Because of such institutional variety, the students of cinematography are not necessarily regular students but may be professional directors of photography, camera assistants or trainees. The variety of the attendees themselves also indicates another demand for teachers of cinematography (Figures 1 and 7).

1.1 Participants

This study was aimed at cinematographers who were in the professional business for fictional and documentary movies and TV productions, including commercials, corporate TV, TV studio and remote pickup productions, as well as in free artistic productions that showcase the main features of the former in 2015, 2016 and 2017, and who were teaching cinematography during the same period of time.

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1 See Slansky, Peter C. *Filmhochschulen in Deutschland. Geschichte–Typologie–Architektur* (in German), VDG-Verlag Weimar, 2011.

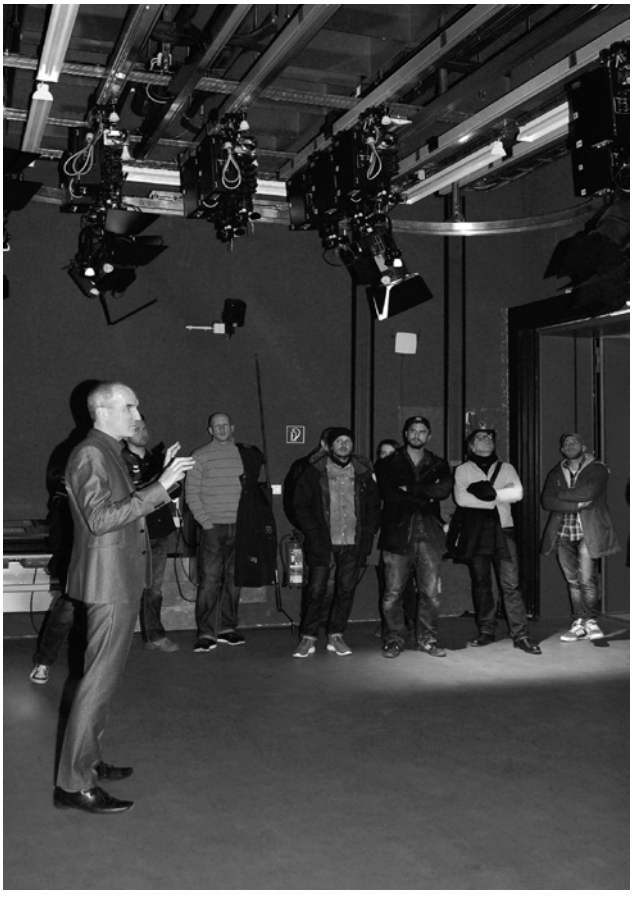

Figure 1: Teaching cinematography is strongly influenced by the individual experience and the creative work of the cinematographer. Most of the teaching cinematographers have developed their teaching methods on their own.

1.2 Questionnaire

The inquiry was structured in eight modules:

- Module 1: Working Conditions as a Cinematographer
- Module 2: Teaching Conditions
- Module 3: Teaching Subjects
- Module 4: Teaching Methods
- Module 5: Students
- Module 6: Personal Relation to Teaching
- Module 7: Tell Us Your Story!
- Module 8: Concluding Questions

According to the respective topics, the questions were framed for single or multiple answers as rating questions or open questions for free textual response. Most of the single-answer questions were provided with the possibility of an alternative free textual response. The type of question is indicated for each case, as well as the actual number of participants who answered that particular question.

1.3 Contributions

The concept of the study was set up by Peter C. Slansky, the executive professor for Film and Television Technology at the HFF, and by Katrin Richthofer from the Centre for Advanced Studies of Film Technology of the HFF Munich, in close cooperation with Professor Tony Costa from Lisbon, who is the chairman of the Educational Board of IMAGO (the European Federation of Cinematographers). Thus, the membership of the participants in one or more cinematographers' societies was included. The potential participants in this survey were addressed via the IMAGO and the national cinematographers' societies. Furthermore, there were also announcements made by the International Society of Film Schools CILECT.

The implementation and evaluation of the online survey in both the English and German versions were done by Katrin Richthofer.

1.4 Participation

The survey was taken by 125 cinematographers from 40 countries across the world, providing 13 720 answers in total. Of the 125 participants, 106 used the English version and 19 used the German version. The majority of the participants did not answer every question, which is why actual participation is indicated for each question. The number of the participants makes the cross section representative. Many participants came from continents other than Europe, so that a broad international distribution was reached.

1.5 Method of evaluation

The survey was executed using the software tool 'UmfrageOnline' by enovo GmbH, Zurich. All data sets, in which at least the obligatory questions were answered, were accepted. The two language versions were consolidated. Since all participants were asked to provide their nationality, national differences were detected precisely. It turned out, that there were only very few. Every data set for each participant was treated anonymously and, of course, with equal weight in the statistical calculations.

2 Results

2.1 Module 1: Working Conditions as a Cinematographer

At 70%, most of the participants are members of a national cinematographers' society. Another 28% are members of another professional society. This indicates a very high degree of professional organisation participation among the survey participants. However, the fact that the survey was announced and forwarded primarily using the IMAGO and national cinematographers' societies has to be taken into account here, as their members may be slightly over-represented. Nevertheless, it may be assumed that cinematography teachers are as organised in professional societies as cinematographers. Hence, the cinematographers' societies also have a responsibility towards the teaching of cinematography.

The main fields of activity for the cinematographers are dominated by fictional and documentary feature films, including commercials. TV productions, especially multi-camera, were fewer than average. This result may, again, have been caused by the way in which the survey was announced and forwarded to potential participants. On the other hand, this could also represent the reality in many film schools and universities that see feature film as the 'supreme discipline' in cinematography. Clearly, this has a great impact on the teaching of cinematography – which is seen primarily as an artistic topic, accompanied by craftsmanship, technological aspects, scientific aspects and other aspects.

Question 1.4 regarding the types of camera used for the productions was criticised by some participants as 'too technical.' However, it was asked in both module 1 and module 3 with the aim to obtain an indicator about the production types and whether the technical circumstances are the same in teaching. Here, there is an interesting cross-reference, especially for the use of 16- and 35-mm film stock. Most of the productions are shot with digital single-sensor film cameras (it comes as no surprise that it is nearly the same in teaching). All other types of cameras are of lower importance, particularly TV broadcast and studio cameras. Surprisingly, many cinematographers still shoot on photochemical film, especially the 35 mm (and question 3.2 shows that for teaching, this number is even higher).

Another significant cross-reference is found in our earlier 2014 survey, 'The Cinematographer and the Lens for Film and Television,' in which the participating cinematographers stated the use of digital single sensor film cameras for 68% of their productions, 20% of broadcast three sensor cameras – and 7% of 35 mm resp. 5% 16 mm film.[2]

2.2 Module 2: Teaching Conditions

The survey reveals that many participants teach at different schools or institutions at the same time on different time scales. It comes as no surprise that the majority of cinematography teaching is done in state film schools. This is the standard model for academic film education in Europe, which is not followed by the – rarer – private film school model but by state universities. The reason for this is that in many countries outside Europe there are no film schools and the standard model for academic film education is through film departments at universities. Cinematography is also taught by institutions for vocational film and TV training. Academies for fine or performing arts constitute the last group.

The contractual relationships between the teacher and the institutions show great variety. Many of the participants teach as professors and/or in an open contract. Many teach at various institutions in different contractual relationships. Many of the contracts are temporary, and honorary professorships are quite rare.

2.3 Module 3: Teaching Subjects

The most important question for this module was question 3.1: 'Which topics do you teach?' Interestingly, the first priority is not pictorial design but lighting (Figure 2). The results reveal that, surprisingly, the teaching subject on which the highest priority is placed is lighting design, followed by the artistic use of the lens, picture composition for film and TV cameras and operating cameras. Interestingly, the visual effects (VFX) composition and technology are subjects on which the lowest priority is placed.

Question 3.2 – 'Which camera types did you use and how often in your classes…?' – was criticised by some participants as 'too technical.' The answers, nevertheless, are quite enlightening because they precisely match with the answer profile for question 1.4, 'Which camera types did you use and how often in your films during the last three years?' The answers to these two questions show that the

2 Slansky, Peter C. and Richthofer, Katrin: *The Cinematographer and the Lens for Film and Television. An Inquiry*, Centre for Advanced Studies of Film Technology at the University of Television and Film Munich, 2014.

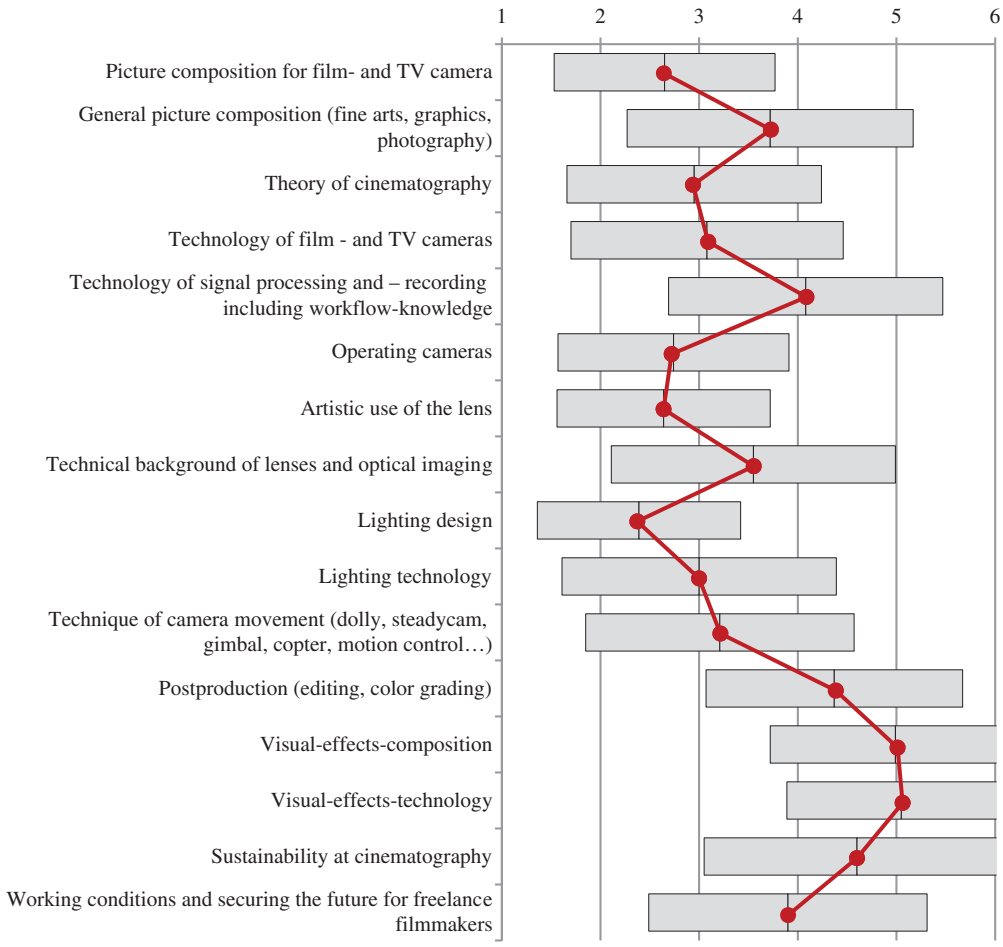

Figure 2: Answers to question 3.1: 'Which topics do you teach?' 1, Exclusively; 2, mostly; 3, often; 4, sometimes; 5, rarely; 6, not at all.

cinematographers use nearly the same camera types for their productions as they do for their lectures. There are two differences. First, the number of semi-professional and consumer single-sensor cameras is higher in teaching than in production. Second, the frequency of the use of photochemical film is significantly higher in teaching than in production (Figure 3).

The fundamental technological change from photochemical film to digital signal processsing, from shooting via postproduction to projection, was carried out by all teachers of cinematography with only very rare exceptions. However, the amount of photochemical film used in teaching cinematography today is astonishing – more than 40% of the participants still use film stock in their lectures. The majority of the others deeply regret that film is not available anymore in their countries or cities. The reasons behind the use of photochemical film in teaching can be found in the answers to question 3.5: 61% of the participants make a clear statement for the future use of film in their teaching; 30% declare that they only use digital cameras now (with some of them regretting this fact but not others); and 9% gave differing answers. The supporters of film, for the most part, declare that the use of photochemical film due to its technique and price educates the students in precision and accuracy. An important element of film for the teaching process is that, due to the lab process, the results are not available immediately. Consequently, all the decisions on the set, such as positioning and movement of the camera, framing, focus, lighting, exposure, filtering and so on, have to be made step by step. The 'shortcoming' – the unavailability of the image on set – turns out to be an advantage for teaching. Another advantage of using film is the reduction of distractions and the increase in student concentration on the optical basics of picture composition, without getting lost in the possibilities and gadgets of digital camera menus. On the other hand, all cinematographers acknowledge the use of digital cameras as today's reality but see cinematography teaching as the only exception. As one participant wrote, '[Film is] useful as a historical reference (like we learn Latin!).'

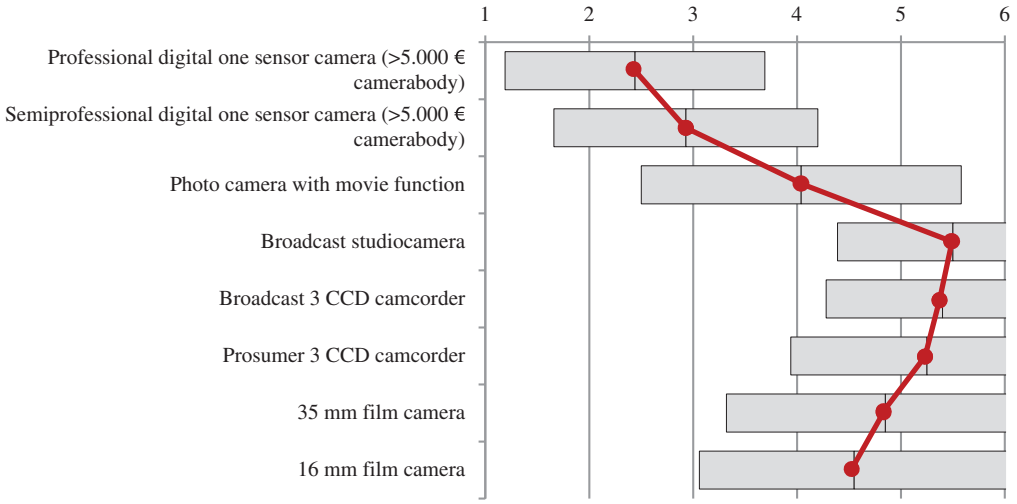

Figure 3: Answers to question 3.2: 'Which camera types did you use and how often in your classes?' 1, Exclusively; 2, mostly; 3, often; 4, sometimes; 5, rarely; 6, not at all.

Teaching cinematography for TV is a subject of minor priority. This result is derived from the minor use of broadcast cameras and semi-professional cameras with a beam splitter that is reported. Just as in question 1.4, here it also has to be taken into account that TV cinematographers were not targeted by this inquiry equally to cinematographers for cinema, because the IMAGO members – as well as those of the national cinematographers' societies – prefer cinema to TV. This preference is transferred to the teaching institutions in considerable proportion. The film departments of the universities and film schools mostly see themselves as art schools, and the majority of the cinematography teachers place first priority on the artistic approach. However, as the answers to question 3.1 – 'Which topics do you teach?'– indicate, the majority of the cinematography teachers also teach non-artistic subjects: technology, craftsmanship, image theory and so on.

Also very interesting are the answers to question 3.6, 'Which changes occurred in your teaching due to the following new technologies?' From all new image technologies, colour grading has the strongest influence on cinematography teaching, followed by VFX and previsualising. New technologies for camera movement, such as mini cams, sliders, gimbals and copters, have a medium influence. Only a small influence is made by 'disruptive' image technologies such as 360° film, virtual reality, augmented reality and – taking the last place – games (Figure 4).

Different conclusions are possible for this result. It seems that cinematography teaching (mainly for cinema films) is a remarkably stable – or 'conservative' – field of activity. Technology has changed and is still changing, but the basics of framing, camera movement, lighting, etc., are still the same. The huge impact of digital colour grading does not contradict this. The cinematographers reacted to the challenge by integrating colour grading into their work, as well into their teaching, to maintain their authorship of the image. On the other hand, the 'general convergence of the media,' as proposed very often in recent years, did not take place – at least not in the creative work and teaching of the participants in this inquiry.

Sustainability in cinematography represents a special topic area (questions 3.7 and 3.8). On the one hand, the majority of cinematographers are aware of its significance. On the other hand, they have little experience with it in general. Hence, advanced training – for both the job and teaching – is stated to be important. In the future, a growing demand is expected, as it is expected that the aspects of sustainability will encroach upon other fields of cinematography – especially that of lighting, which is responsible for a significant amount of energy consumption on a film set. Lighting, too, is a top priority for cinematographers as a teaching subject. Therefore, new changes are expected in cinematography as well as in cinematography teaching in the near future.

Most of the cinematographers who took part in this survey teach a bouquet of different subjects related to cinematography that largely combine theory and practice. Only a few cinematographers confine themselves to only one aspect of cinematography, whereas the majority combine different artistic subjects essential for the creation of moving images. The teaching subjects with a low orientation for application have a low priority. The basics of lighting technology, camera technology and lens technology are taught as subsidiary subjects. The interconnection with transcendent subjects, such as 360° film, virtual

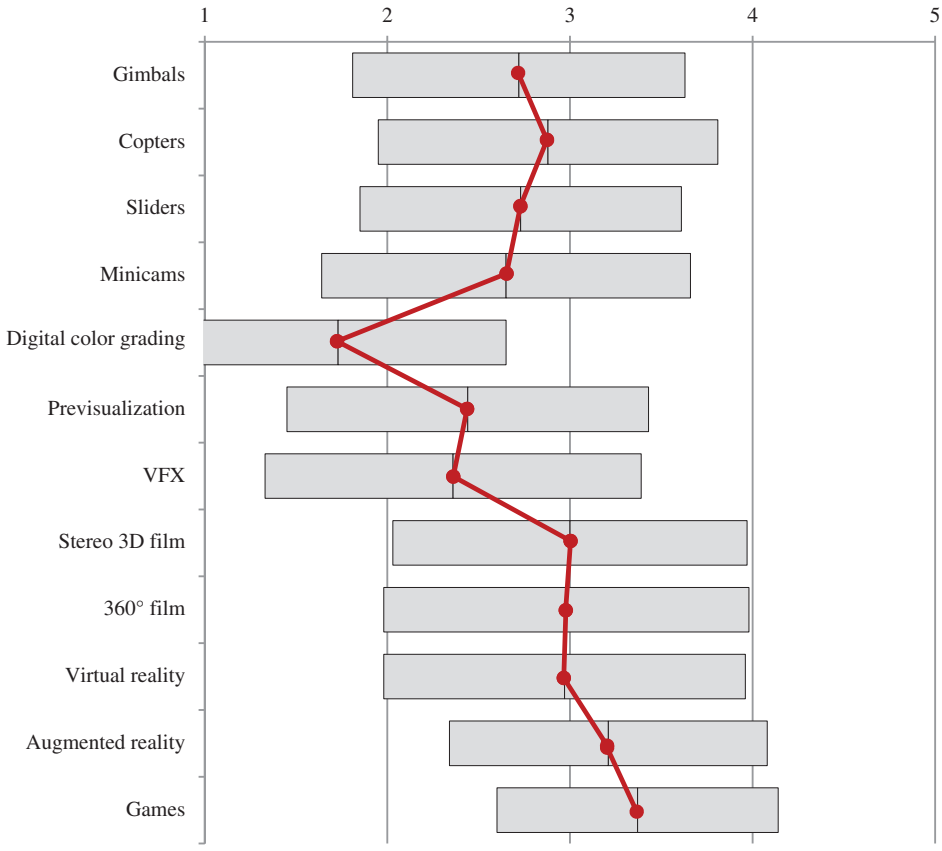

Figure 4: Answers to question 3.6, 'Which changes occurred in your teaching due to the following new technologies?' 1, Big; 2, medium; 3, small; 4, none; 5, does not concern my teaching.

reality, augmented reality and games, is small – 'cinematography' still means the rectangular, upright, standing, moving image on a canvas or a display.

2.4 Module 4: Teaching Methods

Many participants answered question 4.1 – 'Do you teach on the basis of content-methodical agreements with the university/the lecture organiser?' – by stating that they decide on their teaching subjects and methods in collaboration with the representatives or other teachers of the school. In one third of the cases, a firm commitment is made prior to the beginning lectures or workshops between the teacher and the teaching institution. Beyond that, there is a wide variety of formal and informal arrangements on the teaching subjects and methods, including stable, long-term engagements.

In their answers to question 4.2 – 'How long do you work on the preparation and follow-up of your classes?' – the participants provided the number of working days per year they spend on the preparation and follow-up of their lectures. These numbers are remarkably high. Half of all the participants spend between 11 and 40 days per year for lecture preparation and follow-up. The cinematographers with a fixed professorship spend 50 days per year, on average, with some of them spending up to 200 days per year for lecture preparation and follow-up. Such results can be explained by the extraordinary time-consuming need for setting up the technical equipment – cameras, lenses, lighting, dolly or grip – and the highly technically equipped rooms – studios, cinemas, editing or colour grading suites – for the purposes of teaching cinematography. The high level of teaching technicisation demands a similar level of organisation, which can be delegated only to some extent. It is fair to say that, from all the academic disciplines, cinematography has one of the highest preparatory and follow-up activity requirements directly linked to teaching.

Question 4.2: 'How long do you work on the preparation and follow-up of your classes?' (Figure 5)
These results need to be seen in the context of question 4.3, 'Do you get paid for preparation and follow-up time?' The time for preparatory and follow-up work is paid for completely in only 30% of all cases. In more than half of

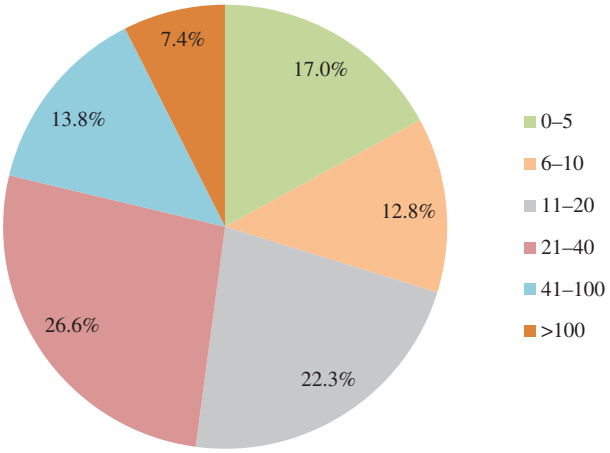

Figure 5: Answers to question 4.2: 'How long do you work on the preparation and follow-up of your classes?' The numbers reflect days per year for preparation and follow-up of the classes.

the cases, the teachers are not paid for this work at all. Full payment is mostly given to teachers with a fixed contract or professorship, while typically no payment is provided for visiting lecturers or teachers with an open contract. In many countries, the state universities and film schools are bound to strict legal regulations that allow payment for effective teaching time only and prohibit payment for preparation and follow-up work. Consequently, this indicates that there is a huge payment (in-)justice gap for many cinematography teachers.

Question 4.3: 'Do you get paid for preparation and follow-up time?' (Figure 6)

It does not come as a surprise that practical workshops in studios are the most commonplace form of cinematography teaching (question 4.4, 'In which group constellations do you teach?'). Interestingly, lectures in seminar rooms outweigh film screenings in cinemas or screening rooms. The lower availability of cinemas or screening rooms in comparison to seminar rooms may be one reason for this result, but it can also be taken as a sign that cinematography is not completely dominated by practical training and that theoretical studies come into its own.

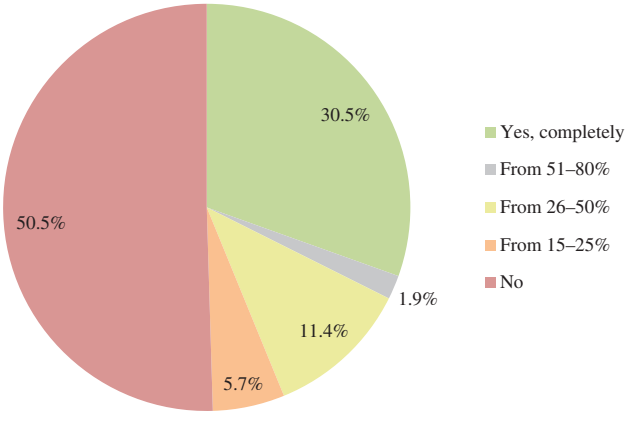

Figure 6: Answers to question 4.3: 'Do you get paid for preparation and follow-up time?' More than 50% of the preparation and follow-up of the classes is done without payment.

The answers to question 4.4 show a wide consensus between the participants. Greater variations are seen for question 4.5 regarding the learning group sizes. This does not present a big surprise, because smaller groups of students result in higher costs for the teaching institution. The participants claim an average group size of 12–25 students for practical workshops at universities. For film schools, the wide majority of participants indicate 6–12 students per group. There are no significant variations dependant on nation or country for this result. It can be concluded that a group size of between 6 and 12 students is established as an optimum for the practical workshops and lectures that utilise technical equipment. The schools and the teachers have to deal with the high levels of technicisation and organisation and the small group sizes to achieve a high quality of teaching, which can raise problems especially at shareholder value-driven institutions.

The answers to question 4.6 – 'With which written/pictorial teaching materials do you teach?' – show that there is a wide consensus about the teaching materials for cinematography – nearly all participants prepare their own scripts and presentations. This is also one of the primary reasons for the great amount of preparatory work needed. Only a minority of the participants use self-written articles for journals or books in their teaching, serving as a type of double outcome of the preparatory work. Professional literature is used widely. Interestingly, the majority of the teachers do not use image examples from their own films or photography but mostly those of other cinematographers and/or photographers.

In question 4.7 – 'How do you teach your practical classes?' – the answers could only be chosen from a list of very concrete examples by their purpose. The results show medium standard deviations. Most cinematography teachers let their students recreate scenes from films, photographs or paintings. The examples from third-party works overweigh the examples from one's own work. Interestingly, photos and paintings are nearly as often in use as templates as film scenes. The participants generally agree about teaching cinematography students together with directing students. Also, the technical camera and lens tests are very common. Teaching cinematography for fictional films overweighs teaching for documentary films. When the students are shooting for documentary purposes,

they are mostly not supervised by the teachers. Often, the colour grading is done by the students. As in question 3.6, this is expressed by a small standard deviation and represents another instance in which colour grading is very important for cinematography teaching purposes.

The teaching equipment is mostly the school's or institution's property, as the answers to question 4.8 show. As stated in answers to question 3.2, the cameras used for teaching are nearly the same as those used for production. This means that the schools and institutions must spend a lot of money on their equipment pools and on keeping them up to date and serviceable. The rental of teaching equipment is less common, as is the free provision of equipment by companies. Sometimes, the cinematography teachers themselves bring their own equipment, mostly for free. This presents further evidence for the high intrinsic motivation of the cinematographers (who participated in this survey) towards teaching.

Of all participants, 70% also conduct examinations, with a majority of practical exams. In two-thirds of these cases, the exams are obligatory and only in 25% are they are tentative. In 20%, only after the practical exam is passed are the students allowed to use the respective equipment. In light of the fact that cinematography is mainly seen as an artistic teaching issue, the exam procedures seem to be quite strict. In the following question module, it is seen that cinematographers educate not only cinematography students but also those from many other disciplines. Hence, cinematography tends to be a bit of a 'hard' topic within film studies. This is expected to be even more the case as technical aspects gain an even wider scope in cinematography teaching.

2.5 Module 5: Students

Question 5.1: 'What subjects do the participants of your courses study?' (Figure 7)

The answers to question 5.1 – 'What subjects do the participants of your courses study?' – reveal that cinematography is a central subject for many – if not for all – aspects of film studies. In more than 50% of all cases, the cinematographers also educate directing students, as well as more than 33% of production, editing and script writing students. For many other film disciplines, cinematography is a fundamental element of study. Thus, teaching cinematography carries with it a high responsibility for the teacher – not only towards his or her own profession but also for the entire film and TV education. The fact that, in most cases, the cinematographers are called to teaching because of their creative work must be taken into account in question module 6. They serve as a kind of 'anchor,' a professional counterweight, opposing the potential tendencies towards the theorisation and academisation of film studies.

According to the answers to question 5.2 – 'What is the academic framework of your lecturers?' – the most common degrees for cinematography teachers are bachelor's (57%) and master's (46%).[3] However, the amount of full-time diploma degrees (36%) and postgraduate diploma degrees (14%) is remarkably high, and the majority of the diploma degrees are claimed by the participants from Europe. This is quite surprising, because the Bologna process, from classic diplomas to the bachelor/master system, had had first political priority in Europe, but the cross-examination with question 2.1 reveals that many film schools in Europe have successfully escaped from the Bologna process. Even 19 years after beginning the Bologna process implementation, these institutions have an obviously good reason to stand firm: full-time studies leading to a diploma degree in the end seem to have remarkable advantages in comparison to a two-step system.

Apart from working within an academic framework, the cinematographers are also teaching as postgraduate trainers (21%) or vocational educators (12%). Thus, they have to interact not only with students but also with professionals or trainees with differences in previous knowledge, learning style and motivation. Hence, the cinematography teachers have to develop – and respectively they have developed – special teaching skills.

In 67% of the cases, the teachers receive documented feedback for their lectures by the teaching institution, and oral feedback in another 21% of cases. From this, it can be gathered that, currently, a formal teaching evaluation procedure seems to be a permanent feature of cinematography teaching. On the other hand, 39% of the participants state that they had to 'collect' their feedback directly from their students.[4] For this question, neither national nor institutional differences could be found.

2.6 Module 6: Personal Relation to Teaching

The questions in module 6 were designed to target the individual biographies of the participants and the

3 Please do keep in mind that the percentage numbers here do not add up to 100% because many teachers teach at more than one institution.

4 Again: the numbers do not add up to 100% for reasons stated previously.

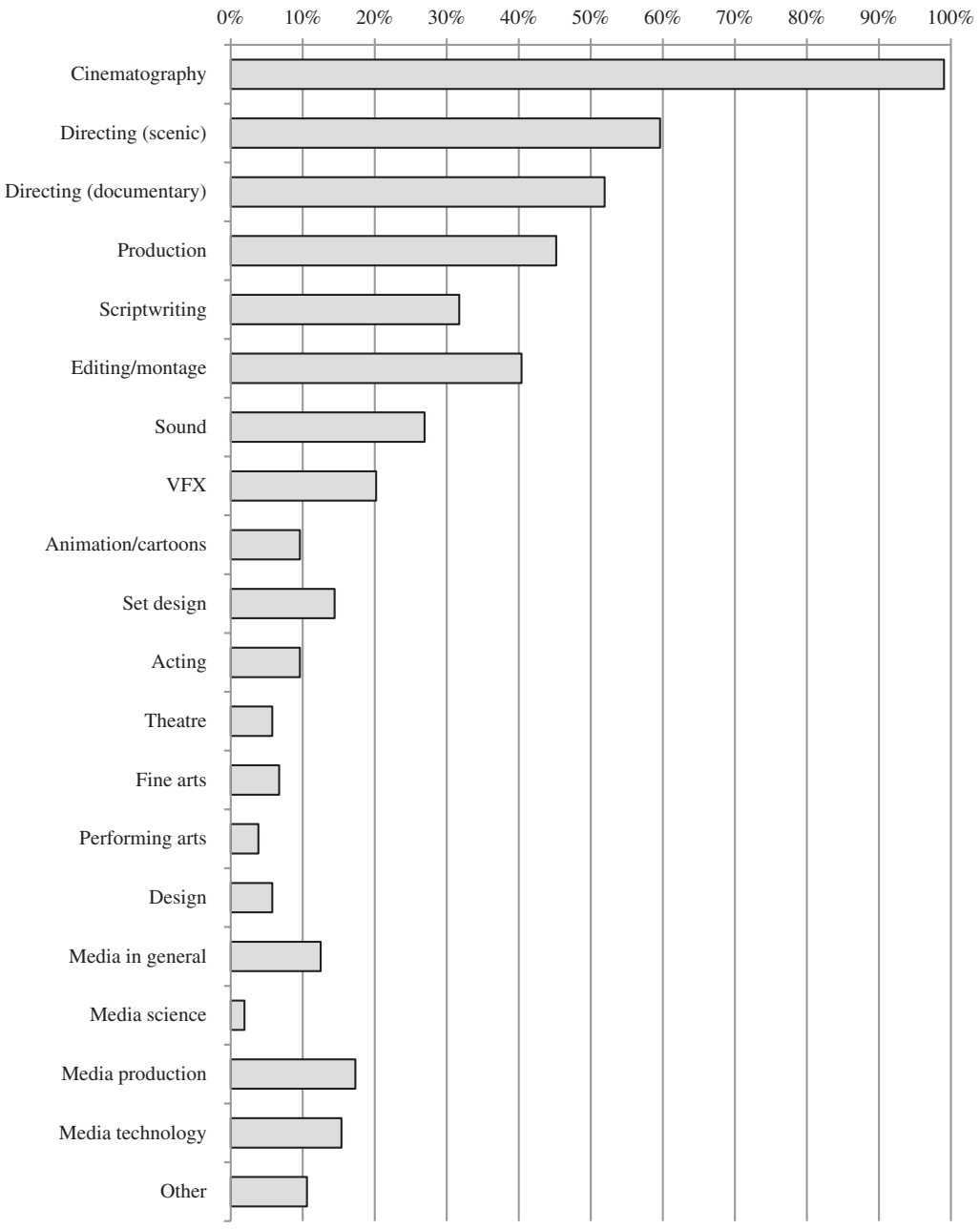

Figure 7: Question 5.1: 'What subjects do the participants of your courses study?'

interconnection between their creative work and their teaching. A wide majority (75%) answered question 6.1 – 'How did you start your teaching?' – with the following response: 'I have been asked by a representative of a university/a provider because of my camera work.' This is a central result of this survey – in a specific moment in time, a cinematographer is 'called' to teaching. The initial point for the call is his or her creative work up to that moment in time. The call can come as a 'calling' for a professorship.

From the answers to question 6.2 – 'When did you give your first lecture?' – the teaching experience of the participating individuals was calculated and put into categories. The result is a three-thirds distribution: one-third of the participants have up to 10 years of teaching experience, another third has 10–20 years of teaching experience and the last third has more 20 years of teaching experience. Two participants have 50 years of teaching experience, one from Belgium and the other from the US.

Surprisingly, for many questions of this survey, no significant systematic differences are found in the answers between these groups. This indicates, on the one hand, that the 'long-term' cinematography teachers have also adapted to the fundamental shift from analogue to digital technology in their creative work, as well as in their teaching. On the other hand, cinematography also seems to deal with the 'eternal questions' that have to be answered anew in each era. A participant puts it like this: 'Technology took an enormous leap forward in the last 30 years but cinematography, in principle, is still the same.'

More than 60% of the participants answer question 6.3 – 'How did you develop your teaching methods?' – with 'At the beginning I developed my teaching entirely from my practical work and later developed my own teaching methodology.' A quarter of the participants state that they developed their own teaching methods right from the beginning. In free textual answers, 16% wrote that they completed a pedagogical degree or pedagogical courses. This needs to be remembered when analysing question 7.5: 'If you could start again today, what would you do differently with your entry into teaching?' Many participants wrote that they wished they had more didactic knowledge, via a pedagogical degree or training, for example.

Altogether, the answers to question module 6 reveal a pattern of how the cinematographers are called to teaching and how they develop their teaching methods. This is deepened and individualised in the follow question module as a culmination point of this survey. However, it must not be forgotten that this survey includes only those cinematographers who are still teaching, not those who have quit after a short or a long time period as teachers – for whatever reasons.

2.7 Module 7: Tell Us Your Story!

This module is the narrative core of the study, in which the participants wrote answers in a very personal, emotional way. Because of their openness and diversity, these statements provide a treasure trove of information for all who are interested in cinematography and in teaching it.

Question 7.1 asks, 'How was your very first course?' Twenty-five percent of the participants respond that their first course went quite well, and 9% wrote that there were no special incidents. Thirty-three percent of the participants state that they were very excited and nervous, and another 25% thinks that they made serious methodological mistakes in their first lecture. The last two groups together constitute 58%, the majority of the participants. Only six participants wrote that they could not remember this event at all. On the contrary, 92% of the participants have an exact memory of their teaching debut. For the majority, this debut as a teacher is associated with a bundle of highly emotional, sometimes contradicting, personal experiences. These experiences are based on their personal uncertainness in a new role model and on the struggle to transfer their competence in cinematography into teaching cinematography. Here is a striking citation: 'Stepping from behind the camera to the front was quite a big step.'

Similar results are also revealed through a cross-check with question 7.5. The challenge of transforming one's own competence in cinematography into a teaching competence is an adventure that has to be told like a hero's journey. This is the dominating narrative. Its domination is explained by the fact that here only the 'survivors' – those who are still teaching – were asked to tell their story. The stories of the others – those who gave up after their first attempt, those who gave up after a longer period of teaching, those who never agreed to answer the teaching call and those who were never asked to teach at all – are not told here (although their stories might be touching enough also to be told).

In question 7.2 – 'What was your best experience in one of your courses?' – most of the answers are about positive learning moments, often described as 'eureka events,' or about positive feedback from the students. Inspiration, 'back' into their own creative work, also belongs to the positive outcomes of teaching cinematography. In this way, the circle becomes complete – after all, their creative work is why they were called to teaching.

Question 7.3 – 'What was the biggest disaster in one of your courses?' – is a mirror to the former question. Less than a fifth of the participants (only) respond that they did not face a real disaster in their teaching career (yet). Another fifth wrote that they see their own mistakes as the main cause of their biggest teaching disaster, mainly due to bad preparation (which is not paid for in many cases). More than 40% of the participants state that their biggest teaching disaster relates to one or more of their students or course participants. The more conciliatory narratives are about positive feedback being missed. The more dramatic narratives are about explicitly negative teaching experiences caused by a single instance of inappropriate student behaviour or wrecked group interaction. These are taken very seriously because the learning group is widely associated with the film team – another result of self-taught teaching methods. Technical problems are cited by 12% of the participants as the

reason for their biggest teaching disaster, while another 12% wrote about other reasons that were outside of their control. Altogether, the reasons for teaching disasters are mainly related to wrecked socio-technical interaction between the teachers and learners, as well as among the learners themselves.

Question 7.4 – 'Which of your own examples of teaching worked especially well?' – evoked a wide variety of concrete descriptions, covering a full range of topics and methods of teaching cinematography. They can be seen as a collection of best-practice examples. However, a cross-check with question 3.2 brings a surprising discovery – 'lighting,' which is stated to be the most important teaching subject here but plays a minor part, with the majority of examples centring around simulating the work of a film crew on the set.

Question 7.5 asks, 'If you could start again today, what would you do differently with your entry into teaching?' Nearly every second participant, or 45%, describes concrete approaches. Another 22% state that they would like to develop their didactic methods more systematically. On the other hand, 33% state that they neither see a reason nor a possibility to do anything differently. In other words, two-thirds of the participants would have done several things differently if they could start teaching again today. This is another indicator of the cinematography teachers' capacity for self-criticism. It also reflects the widespread autodidactic approach of their teaching.

More than half of the participants in question module 7 wanted to give their statements by name. This additionally displays the awareness of the significance of authorship among the cinematographers, which is not surprising.

2.8 Module 8: Concluding Questions

The answers to question 8.1 – 'Do you wish for advanced training opportunities, specifically for your teaching?' – are clear; 45% of the participants wish for advanced training opportunities for their camera work, but 76% wish for advanced training opportunities for developing their teaching methods, which is a confirmation of the results for question 7.5. Only 19% of the participants do not see a need for any training at all.

The wish for the improvement of teaching methods is accompanied by the wish for more opportunities for exchange with other teachers of cinematography. On the priority list, this is followed by advanced training for new camera technologies. Last priority is given to advanced training for disruptive image technologies.

The answers to question 8.2 – 'Did you participate in… ?' – reveal that many participants in this survey also take part in other activities organised by various camera societies, especially by the IMAGO; nearly 33% took part in the 2017 conference 'Teaching Cinematography' at the HFF Munich, while another 33% participated in other IMAGO conferences or masterclasses at the CAMERIMAGE. Only 10% took part in the inquiry 'The Cinematographer and the Lens for Film and Television' conducted by the authors of this survey in 2014. Also, only 12% took part in conferences organised by the International Association of Film and Television Schools CILECT and another 12% in the 'Hands On' masterclass program at the HFF Munich. This is a remarkably low overlap; however, cross-examination shows that there is a significant congruence between the positive answers – nearly a third of the participants in this survey also took part in recent activities of different institutions. In contrast to this, there are two-thirds of the participants who did not take part in any of the activities mentioned. It is obvious that the last group, especially, has the potential for participation in future activities such as conferences, masterclasses or training programs. Also, a closer collaboration of the cinematographers' societies with CILECT seems to be valuable, particularly for the purposes of exchange of teaching methods.

3 Conclusions

This survey cannot present more than a snapshot-style cross section, and there are new questions that arise about teaching cinematography to be answered in the future.

As a general result, this survey finds that the cinematographers see themselves as mostly self-taught teachers who need to improve their teaching methods continuously and systematically. They appreciate support by national and/or international institutions, such as the IMAGO, in this process.

TV and other related media seem to play a minor part in cinematography teaching. Whether they shall – or can – be integrated in the future or whether cinematography teaching shall continue to differentiate the cinema and TV paths remains to be addressed.

Furthermore, there is still a huge imbalance between the number of male and female cinematographers, which also has a strong impact on teaching cinematography.

The so-called 'new media' and new media technologies, beyond the rectangular canvas or display, have not yet had much impact on cinematography teaching, which tends to remain, in a sense, on the conservative side. Whether

the technical aspects should be integrated or taught separately from various artistic aspects is an ongoing discussion among cinematography teachers today.

Some cinematographers see a need for creating a distinct science of cinematography, whereas others underline the cinematography's artistic priority. Some participants even asked if teaching cinematographers should have a PhD. The question as to which institutions would be responsible for such a science of cinematography has yet to be discussed. Further examination of this prospective science – and its relation to the arts – seems valuable, if not necessary, and there is also the common sense that teaching cinematography is also valuable for the artistic work of a teaching cinematographer.

The full report is available in both the German and English versions at www.filmtechnologie.de.

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