VIDEO PRODUCTION WITH A DSLR CAMERA

A Guide to Video Production for Smaller Companies

Matias Koistinen

TAMPEREEN AMMATTIKORKEAKOULU

Tampere University of Applied Sciences

TIIVISTELMÄ

MATIAS KOISTINEN:
Videotuotanto DSLR Kameraa Käyttäen
Opas Videototantoon Pienille Yrityksille

Videot ja infografiikka, kuten Youtube ja muut sosiaaliset mediat, ovat tulleet osaksi meidän jokapäiväistä elämäämme. Näiden sosiaalisten medioiden suosiosta johtuen yhä useampi yritys käyttää liikkuvaa kuvaa markkinoinnin työkaluna. Mainostamisessa ja web-sisällössä still-kuva on jäämässä liikkuvan kuvan varjoon, johtuen nykypäivän nopeista internetyhteyksistä, jotka mahdollistavat liikkuvan kuvan tarjoaman suuremman sisällön saamisen kohdeyleisölle still-kuvaan verrattuna. Yrityksillä on jatkuva tarve luoda uutta sisältöä nettisivuille, blogeihin, mainoksiin ja sosiaalisiin medioihin, mutta pienemmille yrityksille tämä voi olla haastavaa alimitoittettujen media-budjettien vuoksi.

Tämän opinnäytetyön tarkoitus on olla kevyt ohjekirja videotuotantoon, jonka avulla yritykset voivat tehdä ainakin osan videoistaan itse, ilman ulkopuolista apua. Opinnätetyössäni käyn läpi videotuotannon eri alueiden perusteita, kuten kameran asetukset, ympäristön, valaistuksen, käsikirjoituksen, kuvaamisen ja editoimisen kuten myös laitteet ja ohjelmistot, joita tulisi käyttää.

ABSTRACT

Tampere University of Applied Sciences
Degree programme in ICT
ICT-Entrepreneurship

MATIAS KOISTINEN:
Video Production with a DSLR Camera
A Guide to Video Production for Smaller Companies

Bachelor's thesis 52 pages
February 2014

Videos and infographics have become a part of our everyday life in the form of Youtube and other social media. Because of their popularity more and more companies use motion graphics as a marketing method. In advertising and web content motion graphics is taking over still image in a very fast pace, due to the bigger information capacity of motion graphics and the capability of using this bigger content thanks to the fast internet connections of today. With social media, webpages, blogs and advertising, companies have a big need to constantly create new materials for their adverts, followers and public image. But for smaller companies this could be tricky due to small or non-existing media budgets.

The object of this thesis was to create a basic manual of video production that allows companies to make some of their video materials by themselves without the need of external help. In this thesis the following topics are discussed: the basics of the different areas of video production such as camera settings, milieu, lighting, script writing, filming and editing as well as which programs and equipment to use.

SISÄLLYS

GLOSSARY

DSLR-camera	Digital single-lens reflex camera
ISO	International Standard Organization
IRIS	A diaphragm with an opening
Shutter	A device that allows light to pass for a determined period of time
Milieu	The environment where the footage is filmed
Exposure	Exposure is the quantity of light reaching a photographic film.
Timeline (Premiere Pro)	A way of displaying a list of events in chronological order
Sequence (Premiere Pro)	An ordered list (footage to be edited, pictures etc…)
Composition	The placement or arrangement of visual elements or ingredients in a work of art, as distinct from the subject of a work

1 INTRODUCTION

No matter where you go in todays civilized world, you will come across some type of moving picture, video advertisement on the streets, on television and more and more importantly in the internet at home or in the bus with a mobile device, literally everywhere. Especially smartphones and other portable devices have risen the usage of the internet to a whole new level, making it an important advertising channel to companies around the globe. In the internet, there was 201.4 billion videos viewed worldwide in one month. (Thenextweb 2014.) This is why the video industry has grown massively since the year 2000. The problem is that smaller companies don't have the money to outsource the creation of this demanded material neither the knowhow to do it by themselves. This Thesis is made to give some of that knowhow to the companies that need it.

The client of this thesis is a continuation of a student company of Proacademy called Kojako, but the thesis will be an asset for all the existing and future student companies. The goal of this thesis is to gather information, theories and techniques about the different areas of video-production to one complete guide.

I chose this topic, because I saw the need for a manual like this during my studies in Proacademy. Shooting video is also a subject in which I want to get better at.

The purpose of this thesis is to provide a guide that ables different companies to make basic video-productions by themselves.

2   VIDEO WITH A DSLR CAMERA

DSLR cameras are designed mainly for photography, so the video settings in them are usually not as diverse as the settings available for photography. Only the high end models offer more divers video settings. The popularity of DSLR cameras in shooting video is growing year by year due to three key factors: inexpensive price compared to professional video cameras, interchangeable lenses and the small compact size of the camera itself which allows more versatile use. (Cnet 2012.)

There are several types of DSLR cameras, but the 2 most common ones are either with an APS-C sensor or a full frame sensor. The full frame sensor is a lot bigger than an APS-C sensor, so it captures a broader expanse of the scene compared to the APS-C sensor (picture 1). Because the full frame sensor is bigger, it usually makes a better image quality and low light features. Full frame cameras are a lot more expensive than APS-C cameras making them rarer. (Cnet 2012.)


PICTURE 1. The APS-C sensor is often called a crop sensor because in a way it crops out a part of the scene compared to a full frame sensor (Captainkimo 2013)

2.1 Camera settings using a basic DSLR camera

There are eight settings for video that are commonly available in almost every DSLR camera.

2.2 Exposure

Exposure plays a key role in photography and in videography. It determines the lightness of the footage. Too little light is called underexposed and too much light is called overexposed. There are three camera settings that affects exposure: Aperture, ISO and shutter speed (picture 2).
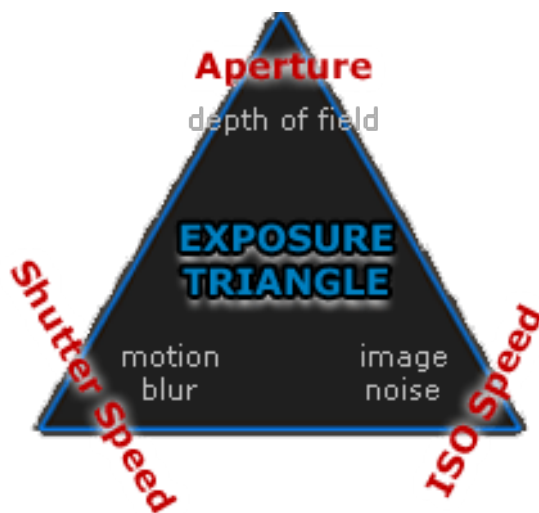
PICTURE 2. Exposure triangle showing the different effects of the three exposure affecting settings. (Cambridgeincolour 2014)

2.3   Aperture

Simply put, aperture is a hole within a lens, through which light travels into the camera body. When setting up the aperture, the size of the hole is altered, this is expressed in f-numbers. The smaller the f-number is, the bigger the hole is and the more light travels through the lens to the shutter of the camera. The aperture effects in two things in the footage, exposure and depth of field. (Digital-photography-school 2014a.)

Depth of field

The size of the aperture has a direct impact on the depth of field, which is the area of the image that appears sharp. A large f-number such as f/32, (which means a smaller aperture) will bring all foreground and background objects in focus, while a small f-number such as f/1.4 will isolate the foreground from the background by making the foreground objects sharp and the background blurry (picture 3). (Photographylife 2014a.)

Bigger aperture lets more light true, making the footage brighter (picture 3). If shooting in low light conditions, it is good to use a lens that is capable of a big aperture in order to have good footage.

PICTURE 3. Image on left shot at f/2.8, Image on right shot at f/8.0 (Photographylife 2014a).

A Nikon D5100 is the camera being used in all the examples of camera settings in chapter 2. In order to change the aperture in a Nikon D5100, the Exposure Compensation button must be pressed and at the same time roll the Command dial (to the left to increase aperture and to the right to decrease it).
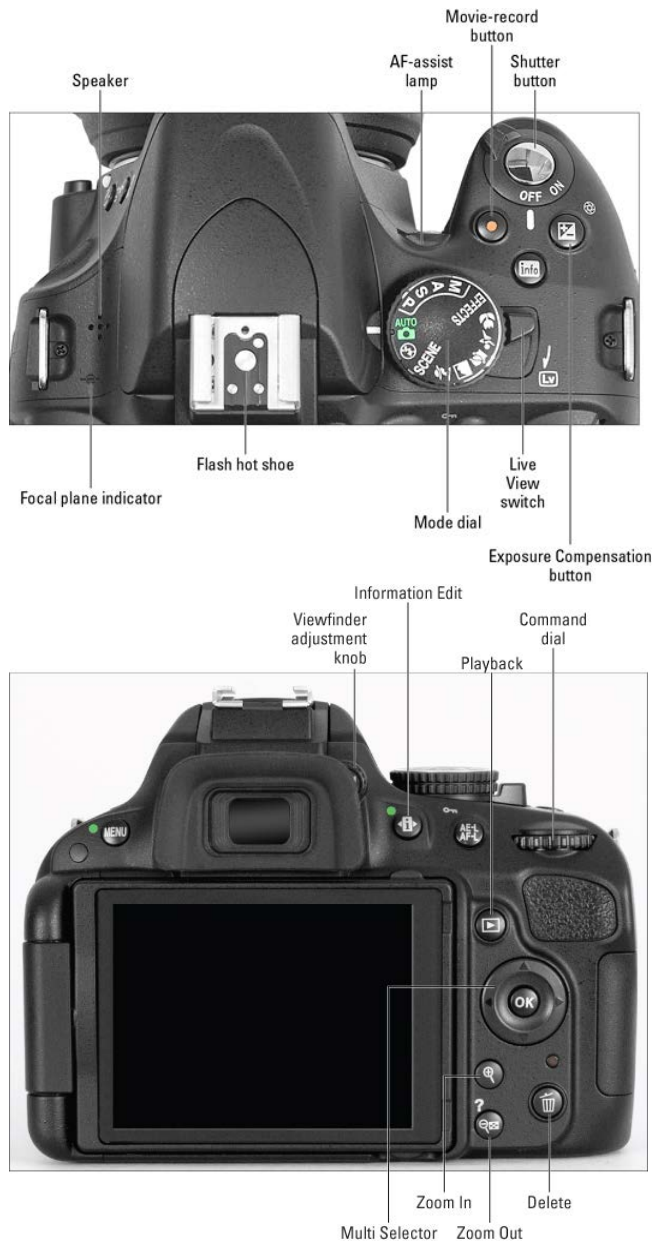

PICTURE 4. Nikon D5100 button layout (Dummies 2014a)

2.4   ISO

ISO stands for International Organization for Standardization. In cameras ISO is fol-
lowed by a number 100, 200, 400, 800 etc… The ISO bit is from the standards for film
sensitivity to light, and the number refers to its rating. The ISO affects exposure so that
the higher the value is the more exposed the footage is. By increasing the ISO number
the noise in the footage increases as well. This is why the number should always be as
low as possible. The lower the number is, the better the quality of the footage is. The
need of increasing the ISO number is dependent on the lighting conditions that the vid-
eo is shot in. The darker it is the higher the ISO number needs to be and vice versa.
(Photographylife 2014b.)

The Nikon D5100 doesn´t allow the ISO to be changed manually for video, but it allows
to set a range of ISO values where it then automatically works for example from a min-
imum ISO number of 100 to a maximum of ISO 1600. To change the ISO number in a
Nikon D5100, push the menu button and select the ISO sensitivity settings from the
camera part of the menu (picture 5). (Dummies 2014b.)
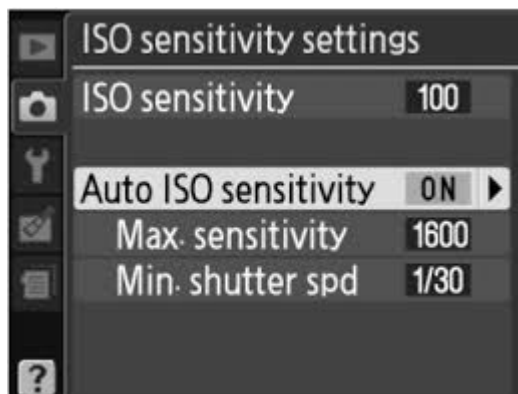
PICTURE 5. Changing ISO in a Nikon D5100 (Dummies 2014b)
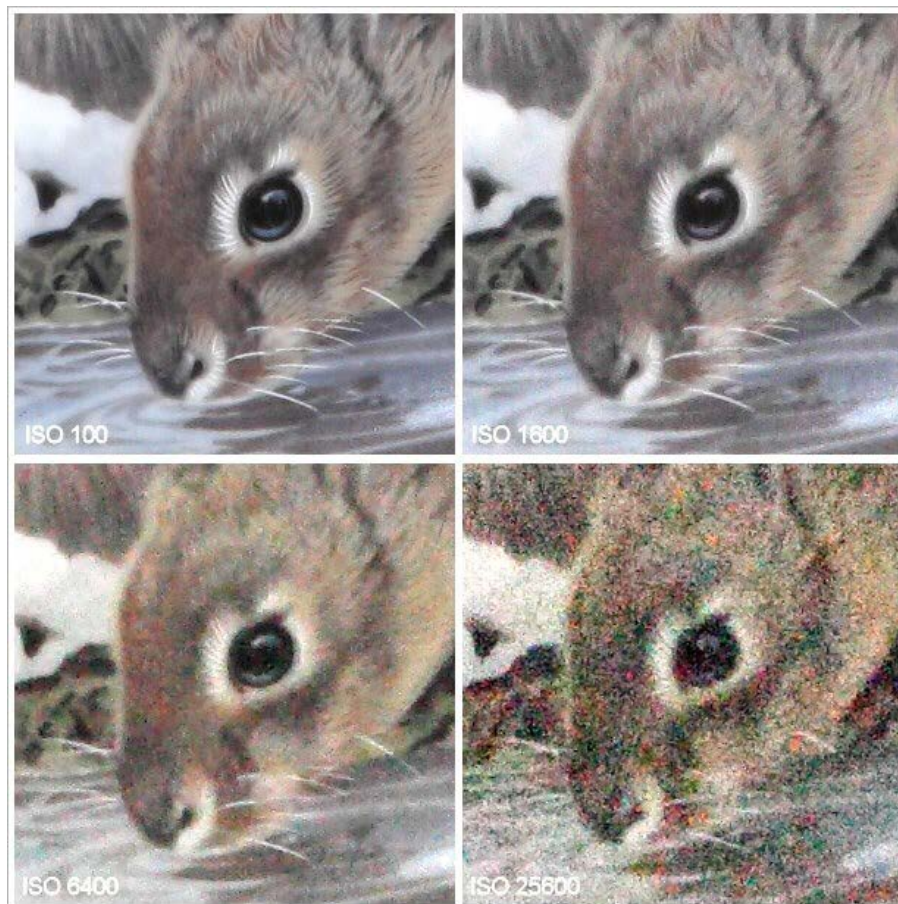
PICTURE 6. The noise that comes with higher ISO values (Bobatkins 2013)

2.5 Shutter speed

Shutter speed in video affects exposure and the motion blur between frames. Shutter speed in a camera is presented in numbers like $1/50^{th}$, $1/400^{th}$, the bigger the value is the more exposed the footage is. According to a guideline called the 180 degree rule, the shutter speed should be double the frame rate. If the frame rate is set to 24 frames per second then the shutter speed should be $1/48^{th}$. The 180 degree rule makes the video image look natural and realistic, because there is enough motion blur between the frames. If the camera is already set to a small ISO number, small aperture and the shutter speed is set according to the frame rate and the image is still over exposed the only option is to use a light filter in front of the camera lens. (Luispower 2013.)

When shooting video, the Nikon D5100 doesn´t allow the shutter speed to be changed, it is possible to set a minimum value like with the ISO settings. There is a way around this issue by using the AE-l AF-L button, AE-L stands for auto exposure lock. The camera changes automatically the ISO and shutter speed values depending on the lighting conditions, when the values are the ones desired the AE-l button needs to be pressed in order to lock the settings. (Youtube 2013a.)

2.6   White balance

White balance is a setting to balance out the colors of your footage for the desired result. "Most digital cameras have functions for Auto White Balance, a group of preset White Balance (sunny, cloudy, shade, flash, fluorescent, etc…), and a Custom Preset that you can set yourself." (Whiteonricecouple 2014.)

In a Nikon D5100, the white balance can be adjusted in a few ways (Dummies 2014c.):

> **Quick Settings screen:** You can get to this screen by pressing the Info Edit button. Press once if the Shooting Info screen is already visible; otherwise, press twice. After highlighting the White Balance option, press OK to display the menu shown on the right. Highlight the desired setting, and press OK (picture7).

PICTURE 7. White balance menu of Nikon D5100 (Dummies 2014c)

> **Shooting menu:** You also can adjust the White Balance setting through the Shooting menu. Going this route gives you access to some additional White Balance settings (picture 8).
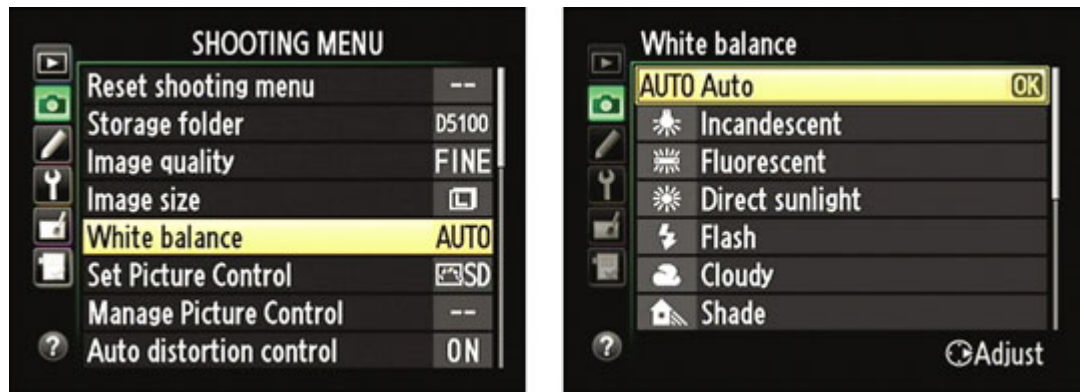
PICTURE 8. Setting the white balance to auto (Dummies 2014c)

2.7 Resolution

All the video capable DSLR cameras of today shoot high-definition video. High defini-
tion refers to the resolution, the HD resolutions are 720p, 1080i and 1080p and they are
shown in an aspect ratio of 16x9 where 16 is the horizontal and 9 the vertical size. The
number 720 refers to the amount of horizontal lines (the lines which create the image),
so 720p has 720 horizontal lines and 1080p has 1080 lines. So when the footage is 720p
and the aspect ratio is 16x9 the resolution is 720x(16/9)=1280= 1280x720. The letter p
in 720p means progressive scan, which means that the footage is stored in a way in
which all the lines of each frame are drawn in sequence. The letter I comes from inter-
laced, but almost all the DSLR-cameras film in progressive scan, so I am not going
deeper into interlaced video. The main thing to know is that the bigger the resolution is,
the better the image looks, but with bigger resolution comes a bigger file size. So many
times when the destination of the video is the internet or it needs to be sent somewhere
via e-mail, the resolution is better to be kept lower for the file size to be suitable for this
environment. (Wikipedia 2014a; Wikipedia 2014b; Wikipedia 2014c.)

2.8 Frame rate

The unit of frame rate is FPS which stands for frames per second. This means the
amount of pictures captured per second. For example, if the frame rate is set to 50fps,
the camera captures 50 images per second. In general it is considered that the higher the
frame rate, the smoother the picture. Frame rate is very important especially when

shooting slow motion video. The higher the fps is, the more you can slow the footage down and still keep it smooth.

In DSLR cameras the frame rate goes usually hand in hand with the resolution. The higher the resolution, the less the fps is. This is because of the capacity of information that the camera can handle. The higher the resolution, the more the footage has data. So when increasing the resolution to make the image quality better, the fps has to go down to decrease the amount of data to a level that the camera can handle.

In DSLR cameras there are presets like 1080i 25fps or 720p 50fps, where the 720p refers to a resolution of 1280x720, the letter p to progressive scan and the 50fps to a frame rate of 50 frames per second.

Setting the resolution and frame rate in a Nikon D5100:
Press the Menu button, go to Movie settings and select Movie quality. From the Movie quality tab you can select your resolution and frame rate setting. (Cameralabs 2014).
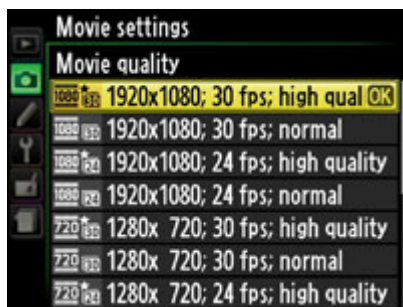
PICTURE 9. Setting the resolution and frame rate in a Nikon D5100. (Cameralabs 2014)

2.9   Video format

A video format consists of two parts, the container file and the codec. A container file defines the structure in which the recorded material is compressed and the codec the algorithm in which the material is encoded and decoded. (Digitalcamerawolrd 2011).

In most DSLR cameras the user doesn´t have control over the file format, but this doesn´t matter because the file formats used are mostly .mov or AVCHD and both of them are good and both of them work with most editing software. (Digitalcamerawolrd 2011).

3 DSLR CAMERA ACCESSORIES FOR FILMING

There is a huge variety of different accessories for a DSLR camera. These accessories help to achieve a professional feel to the video. Accessories like rigs and tripods are meant to make the movement of the camera smoother, different lenses have a direct impact on the actual look of the footage and microphones increases the sound quality.

3.1 Lenses

There are many different type of lenses for DSLR cameras from a variety of manufacturers. The properties of lenses vary depending on the manufacturer and on the camera body that they are used on. Also some cameras have a built in image stabilizing system and some cameras have the stabilizing in the lenses. This is something to keep an eye on because when shooting video, it is important to have image stabilizing in some form for the footage to be better. There are 3 main type of lenses. (Youtube 2011a.)

3.1.1 Zoom lenses

These are lenses that don't have a fixed focal length and therefore allow zooming. The zoom lenses can have different amounts of zoom, different apertures and so on. These lenses are good overall lenses for shooting video, but especially for situations where the objects being filmed are distant, like sport events or concerts. (Youtube 2011a.)

3.1.2 Macro lenses

These lenses are meant for extreme close-up filming, for example filming insects or other small objects like small pieces of machinery. (Youtube 2011a.)

3.1.3 Wide-angle lenses

These lenses can be with or without a fixed focal length, so with or without zoom. As their name suggests, they make a wider picture. There are different levels of how wide the angle is, at the widest being the fisheye lense which has a 180 degree view or higher. Some moderate wide angle lenses are used to achieve a cinema like image. (Youtube 2011a.)

3.2 External microphones

Every video capable DSLR camera has a built-in microphone, but they do a poor job in recording sound. Therefore a lot of video makers use an external microphone which can be plugged into the microphone input of the camera. These external microphones record sound in a much better quality compared to the internal ones, a rather good one can be bought starting from 100 euros. An external microphone is a very good investment that makes the videos sound a lot more professional. (Desktopvideo 2014.)

3.2.1 Shotgun microphone

A shotgun microphone is an external microphone that is attached to the camera it works like the internal microphone but with a better sound quality (picture 10). It picks up the sound coming from the direction that it is pointed to. Shotgun microphones work well when there are multiple sources of sound at the same time, for example a group of people talking or concerts. (Desktopvideo 2014.)

PICTURE 10. A shotgun microphone (Marshalmonitors 2014)

3.2.2 Lapel microphones

A lapel microphone is a type of microphones used in interviews and in situations where there is only one preferred source of sound to be recorded. A lapel microphone is attached to the clothes of the speaker (picture 11). (Desktopvideo 2014.)

PICTURE 11. A lapel microphone. (Williamssound 2014).

3.3 Memory cards

A memory card in a camera is the place where all the footage is stored. There are many types of cards and the main difference between them is the speed that they are able to write data and the capacity of data that can be written to them. DSLR camera uses mainly 2 types of cards, either an SD-memory card or a compact flash memory card. The SD-cards are getting more and more popular.

3.3.1 SD memory card.

The SD cards are the most common ones in cameras. The letters SD stand for secure digital. There are 2 main types of SD cards the SDHC (secure digital high capacity) and the SDXC (secure digital extended capacity). The main difference between these two cards is the capacity of data they can use. The SDHC can hold from 0 to 32 gigabytes of data and the SDXC can hold up to 2 terabytes. Both of these cards have speed classes which indicate the speed that the card can write data to itself (picture 12). To be able to film HD-picture, the card needed has to be at least a class 6 card. (Sdcard 2014.)

Class		Minimum write	Maximum Write	DSLR Photo	SD Video	HD 720p Video	HD 1080p Video
Class 2	②	2 MB/s	8 MB/s		●		
Class 4	④	4 MB/s	15 MB/s		●	●	
Class 6	⑥	6 MB/s	20 MB/s	●	●	●	●
Class 10	⑩	10 MB/s	30 MB/s	●	●	●	●

PICTURE 12. SD card speed classes. (Oneslidephotography 2011).

3.4 Tripods

To be able to achieve that professional look with smooth camera movement and a steady picture, a good tripod is a must for shooting video. There is a lot of different types and brands of tripods starting from 20 euros going up to thousands of euros. A

tripod for video purposes should have the ability to adjust height and the ability to tilt and pan the camera. (Mediacollege 2012a.)

PICTURE 13. A tripod (Ovocontrol 2014).

3.5 Rigs

The shape and size of a DSLR is not the best for shooting video. This is the reason why professionals use rigs. Rigs come in thousands of different shapes and sizes with different properties. A good rig for an all-around use is a shoulder mount rig, which allows the user to move around in all directions keeping the camera much more stable compared to holding the camera simply in the hands (picture 14). Many of the rigs available are variable, which allows a very versatile use for different filming angles. If shooting videos for commercial or other professional purposes, a rig is a must. (Youtube 2011b.)

PICTURE 14. A shoulder mount rig. (Planetdigital 2014).

3.5.1 Steady-cam

A steady cam is a handheld type of rig with a rotating handle and adjustable weights attached to it. The idea behind a steady cam rig is to adjust the weights to counter the weight of the camera resulting in a very steady footage with a high movability. This allows the cameraman to move a lot but still keep the camera steady. There are many types of steady cam rigs ranging from professional models used in the television and film industry to amateur ones. The cheaper ones do a very good job and are a good asset for any film maker. Prices start from 200 euros and they go higher as your cameras weight goes. (Youtube 2013b.)

3.6 Lights

Shooting in low-light conditions can be a tricky thing. Specially if the filming happens outside at night time. The more the exposure settings are increased to get a brighter picture, the more the image quality suffers. So it is important to have good lighting. There are lights that are directly attachable to the DSLR camera. These lights use the same attachment as the flash for photography uses in a DSLR, the attachment is called the hot shoe. The advantage of this kind of lights is that the light travels with the camera pointing at the same direction as the camera.

PICTURE 15. Accessory light attached to the hot shoe of a DSLR camera. (Rosco 2013).

4   SCRIPT WRITING

Definition of script:

"A script is a document that outlines every aural, visual, behavioral, and lingual element required to tell a story."(Screenwriting 2013.)

4.1   Why does a video project need a script

Writing a script can generate a lot of new ideas for the final product. Writing your thoughts down and thinking about different scenes helps to better organize the whole process of the video production. A script makes the actual video shooting and editing process much faster, because there is a ready thought plan that simply needs to be executed. A written script leaves less room for arguing inside the project team, and therefore helps multiple people work on the same project together.

4.2   Tips on writing a script for commercial videos

Keep it simple, tell what you want to tell and show the things necessary for your point to come clear. Keep your sentences short and leave some space for creativity. Try to be personal and create something new. Nowadays it is hard to create something completely new, but you can borrow an idea from a different field of business and implement it in yours. This way you create a new thing in your field of business, even though it is something that has been done before in another field of business. Your video should introduce a hook in the very beginning. A hook is something that makes clear to the viewer the main message of your service or product. In the other hand, in the videos of today, the hook is sometimes introduced in the end, at first the viewer is miss lead to a wrong direction and just after watching the video gets the hang of it. Either way the viewer should always get your message clearly. The problem that your service or product solves should also be introduced clearly, this is for raising the interest of the possible buyers. (Reelseo 2014.)

There is a bunch of script writing software, but all you really need for your script is Microsoft Word or a similar writing tool where you can add pictures.

Free script writing software:

Celtx

Page 2 Stage

RawScripts

Trelby

Word Template

5   MILIEU

Definition of milieu:

"The physical or social setting in which people live or in which something happens or develops" (Merriam-webster 2013.)

Milieu is the place with it´s surroundings where you are filming. There are not any rules to the milieu. It is completely up to the maker of the video. There are though some things to take into consideration when making videos for promoting a business or other professional videos in order to avoid retakes and therefor save time.

5.1   Background noise

The microphone of the camera cannot choose the sounds it records, so everything that you hear is going to be recorded to your footage as well. If doing an interview for example, it is crucial to take the possible background noises into consideration. If the background noises are too loud, they are going to cover the desired sound under them. Choose your filming place according to your video and sound needs.

5.2   Interference

Other interference than background noises are people and objects like cars. For example, if shooting on a busy street, the people passing by have to be taken into consideration. They might bump into you or look at the camera, resulting in a retake.

5.3   Permits

Whether your filming milieu is in a public building or in someone´s private property, it is always good to ask for permission to film. This way you make sure that you don't end-up filming for hours and in the end someone forbids you to use the material.

6   LIGHTING

Lighting plays a key role on filmmaking, depending on what kind of lights you use, you can affect the feel or the ambiance of your footage. In less professional sets, lights are often dropped out due to their cost and their poor movability.

There are many kinds of lighting setups, but the most common one and the foundation of lighting is called the three point lighting, which includes a key light, a back light and a fill light. Understanding the three point lighting is the first step to understand lighting in general. (Mediacollege 2012b.)

Key light

The key light is the most dominant light in a three point lighting setup. It is the strongest source of light and it is responsible for most of the illumination and shadows created to the filmed subject. (Mediacollege 2012b.)

The key light should be placed on either the right or the left side of the camera so that it illuminates one side of the subject and creates shadows on the other (picture 16).
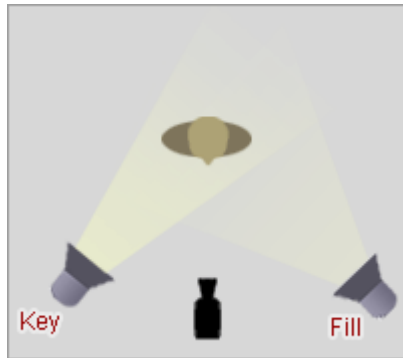

PICTURE 16. Placement of the key light (Mediacollege 2012b)

Fill light

The fill light should be a softer and less bright light compared to the key light. It´s purpose is to fill in the shadows created by the key light to the other side of the subject, making the subject more visible. (Mediacollege 2012b.)

The fill light should be placed on the opposite side of key light (picture 17).

PICTURE 17. Placement of the fill light (Mediacollege 2012b)

Back light

The purpose of a back light is to define the outlines of the filmed object by creating a bright line to the objects edges. This helps to visually separate the object from the background and create a sense of depth. (Mediacollege 2012b.)

The back light should be placed behind the filmed object (picture 18).

PICTURE 18. Placement of the back light (Mediacollege 2012b)

7 FILMING

Filming is the most essential part of video productions. It is very important to do the filming correctly, because there is very little to be done in editing in order to correct bad filming. There are a couple of good tips for filming in order to make a professional looking video.

7.1 Rule of thirds

The Rule of Thirds is an old concept that was first written down in 1797 by John Thomas Smith. This rule is a guideline for composition, where a grid formed by 9 equal sized parts is imagined or placed over the picture, this grid is then used to help to define the right amount of headroom and leadroom of the footage. In the modern DSLR cameras this grid can be chosen to be visible when taking pictures or shooting video (picture 19). (Digital-photography-school 2014b.)


PICTURE 19. The grid of rule of thirds (Snapsort 2014)

7.2   Headroom

Headroom refers to the space between the filmed object and the top end of the frame. In order to make the footage aesthetically pleasing, it is good to use the rule of thirds with the headroom. This is done by positioning the center of interest one-thirds below the top end of the frame (picture 20). When filming people the center of interest is usually considered to be the eyes (picture 21). (Steves-digicams 2014.)
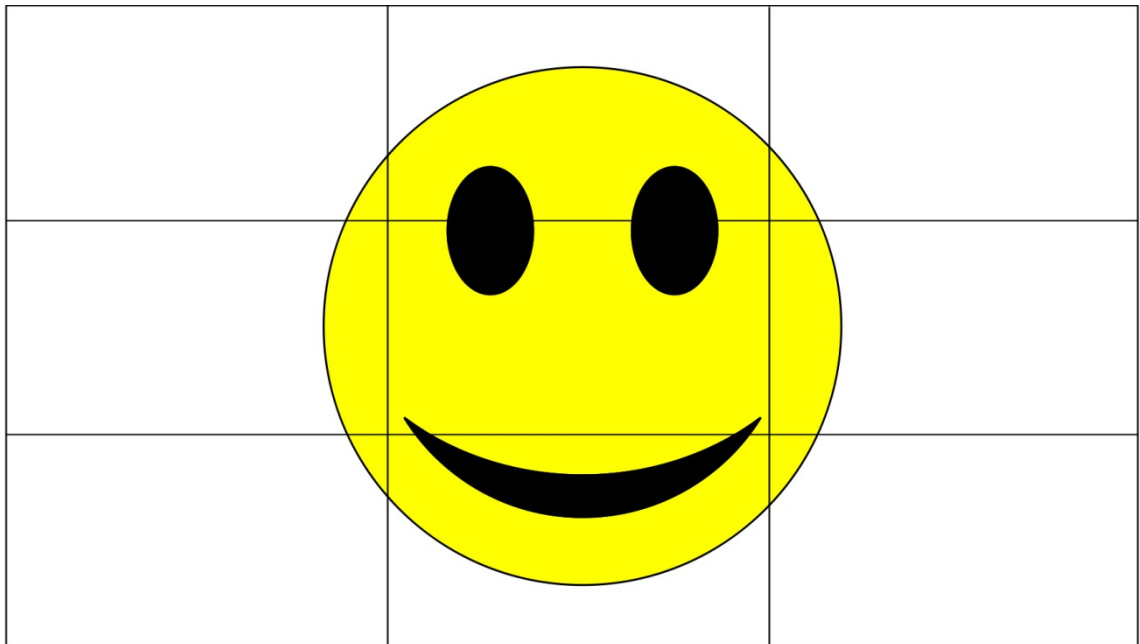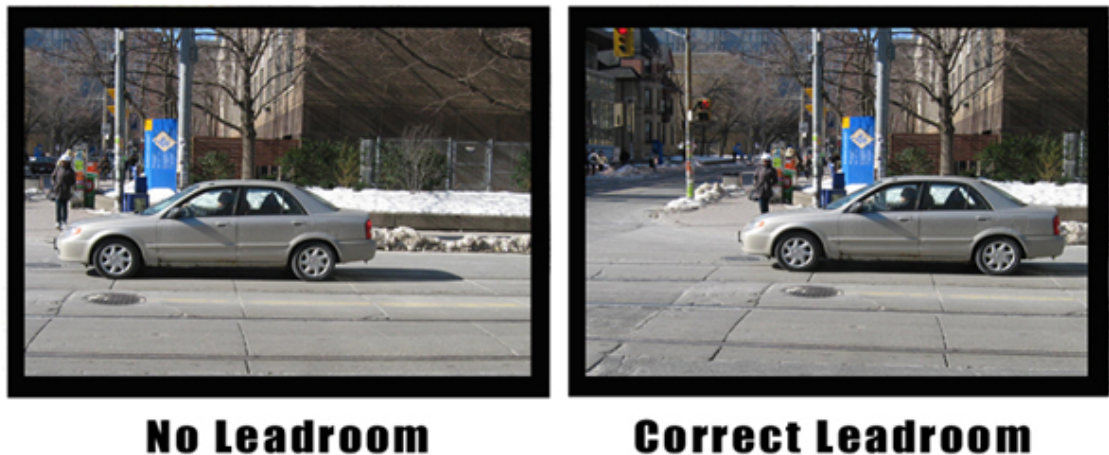

PICTURE 20. Headroom
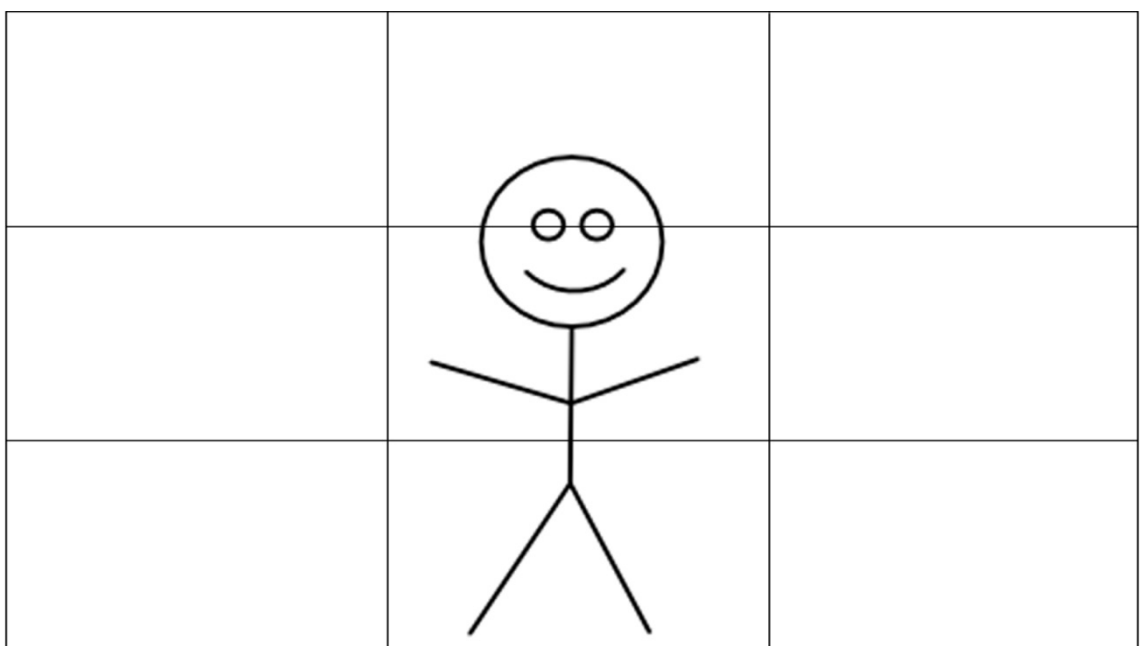
PICTURE 21. Headroom

7.3 Leadroom

Leadroom is the space in front and in to the direction of a moving object. Leadroom is a little bit more complicated than headroom, it´s purpose is to make the movement and the direction of the movement of the filmed object more obvious to the viewer. The rule of thirds is applied here as well by leaving one-thirds of space in front of the moving object. For example if filming a moving car, there needs to be some space in front of the car for the movement to come clear (picture 22). (Pc3production 2012.)

No Leadroom   **Correct Leadroom**

PICTURE 22. Leadroom (Journalism.ryerson 2013)

7.4 Noseroom

Noseroom is like leadroom, but meant for objects that are not necessarily moving, but they project energy to some direction, for example a person watching or pointing something in a certain direction (picture 23). Rule of thirds applied by leaving one-thirds of space in front and in the direction of the filmed object.

CORRECT

INCORRECT
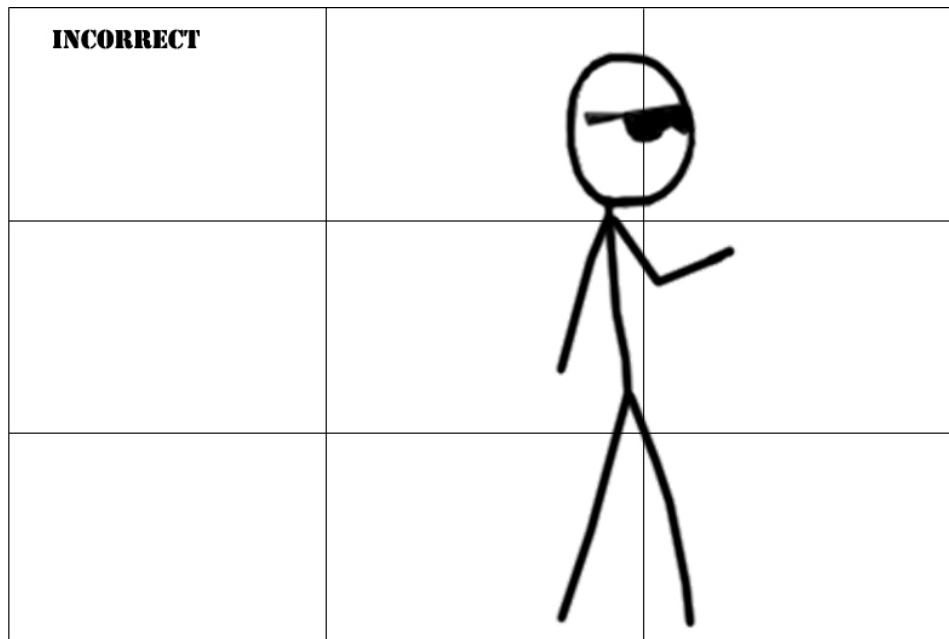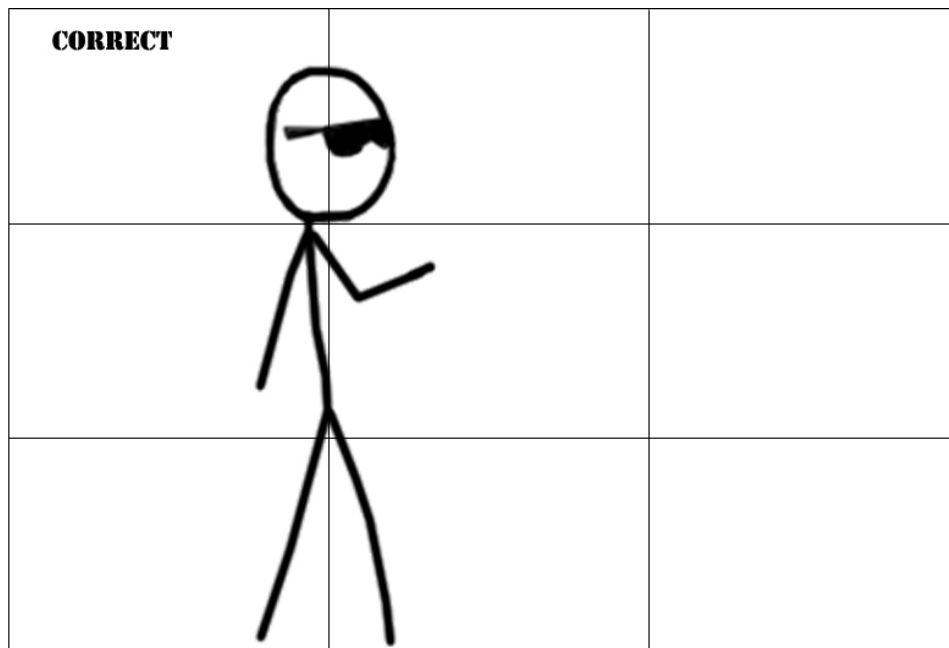
PICTURE 23. Noseroom

7.5 Anticipatory framing

Anticipatory framing means to predict the movements of the filmed subject. This is a technic that comes with experience, but one that can be learned. Practicing can be done by filming someone who for example just moves in front of the camera in a random sequence and the camera operator tries to keep up with the movement of the filmed subject. Repetition is a key factor in learning anticipatory framing. Another way of achiev-

ing good framing on a moving subject is to write down the movements before filming, for example following a detailed script, and practicing these movements. (Youtube 2011c.)

7.6   Depth

The placement of the filmed objects is crucial if a sense of depth is desired in the footage. A sense of depth is achieved when the filmed objects have distance between them, some objects further than others. For example, when filming a group of people, the people shouldn´t be aligned, but rather have a few meters of distance between them (picture 24).
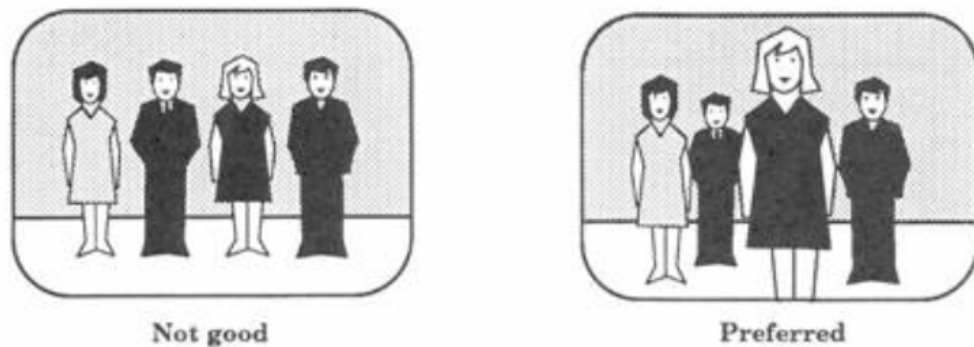
PICTURE 24. Achieving a sense of depth (Lesliewand 2013)

8   EDITING

The final stage to a video production is editing. Editing is a massive concept, so this manual is concentrating to the basics of editing such as cutting, video and audio transitions, adding pictures or titles and color levels. Learning these basics gives a good understanding to editing, and a good foundation to learn more about it. The instructions apply only to Adobe Premiere pro video editing software.

8.1   Adobe Premiere Pro

Adobe Premiere Pro is a timeline based video editing software launched in 2003. It is a professional software that is widely used in the broadcasting and cinema world. The current version of Adobe Premiere Pro runs on the two most used operating systems Mac and Windows.

Adobe Premiere Pro versions (Mediacollege 2012c):

Premiere Pro (AKA Premiere Pro 1, Premiere 7, PPRO)
A significant release, this version was promoted by Adobe as a transition to the fully-professional arena. This version did not offer support for the Mac, an unusual move which was eventually rectified in Premiere Pro CS3.

Premiere Pro 1.5
A number of minor additions and bug fixes. Really just a more stable version of PPRO.

Premiere Pro 2
A moderately significant release, included a new interface and lots of new features such as: Record-to-DVD, Multi-camera editing, scrolling timeline, improved color correction, GPU accelerated processing, native HD/HDV support, improved integration with other Adobe applications.

Premiere Pro CS3 (2007)
Relatively minor release, including a few nice features such as time remapping. Now ships with Adobe Encore CS3. This version also sees the welcome return of Mac support.

Premiere Pro CS4 (October 2008)
Again, not many new features but a solid upgrade. Improved format support, flexibility and efficient editing workflow.

Premiere Pro CS5 (April 2010)
Most notable for the Mercury Playback Engine which uses the GPU for render-less previewing. Various general enhancements with basically the same interface.

Premiere Pro CS6 (May 2012)
Quite a few changes to the interface. Introduction of Adobe Prelude and Speed-Grade. Three-way color corrector, adjustment layers, new preset browser, rolling shutter repair effect. Introduction of Adobe Creative Cloud

8.2 Getting started with Premiere Pro

The examples in this manual are for Premiere Pro CS5.5, but the usage of the application hasn´t changed a lot so these guidelines are valid for almost all versions of the application.

Step 1
After the application is opened a window opens up asking to start a new project or open up an old one. Start a new project (picture 25).
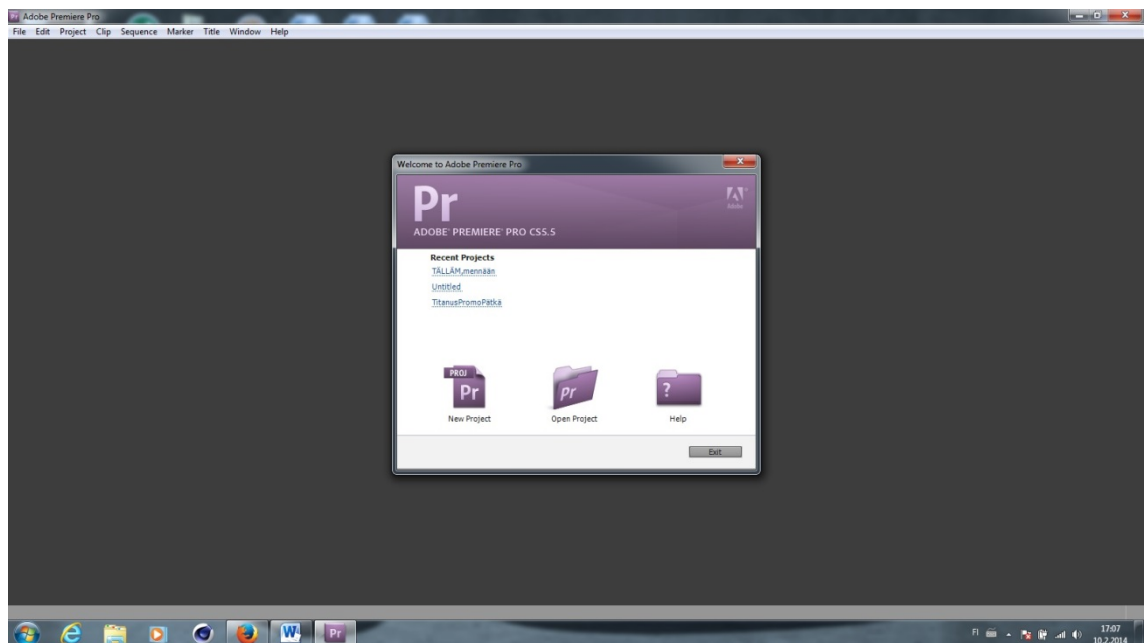
PICTURE 25. Starting a project in Premiere Pro CS5.5 (Premiere Pro cs5.5 2014, print screen)

Step 2

After starting a new project the application is asking to put a name and a location for the project to be saved in. After choosing a location and a name for the project, click on ok. Do not mind about the other parts at this stage (Video, Audio, Capture) yet (picture 26).
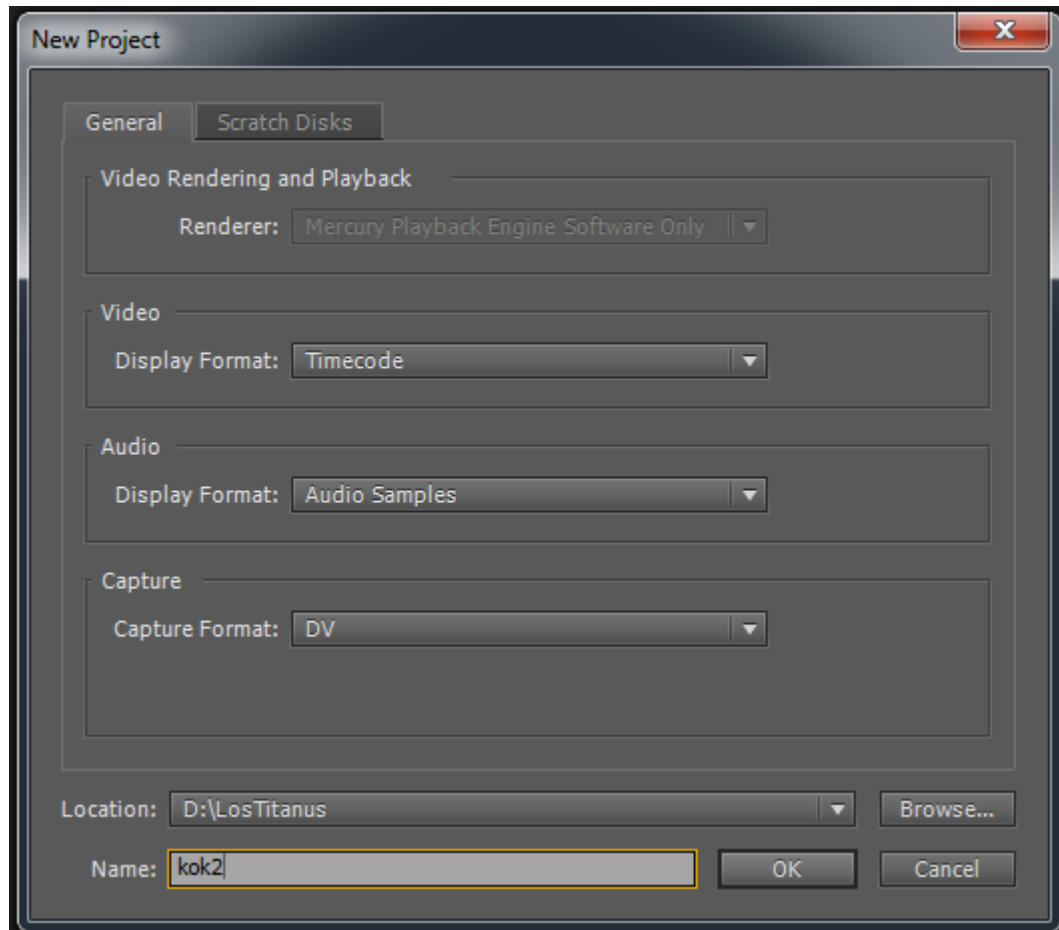
PICTURE 26. Project settings in Premiere Pro CS5.5 (Premiere Pro cs5.5 2014, print screen)

Step 3

Sequence settings. A sequence is like the platform where you gather the material to be edited. Choose the correct resolution and frame rate settings according to the footage that is going to be edited (picture 27). If these informations are not known or remembered, it is not a problem they can be set later. Click on ok to continue.
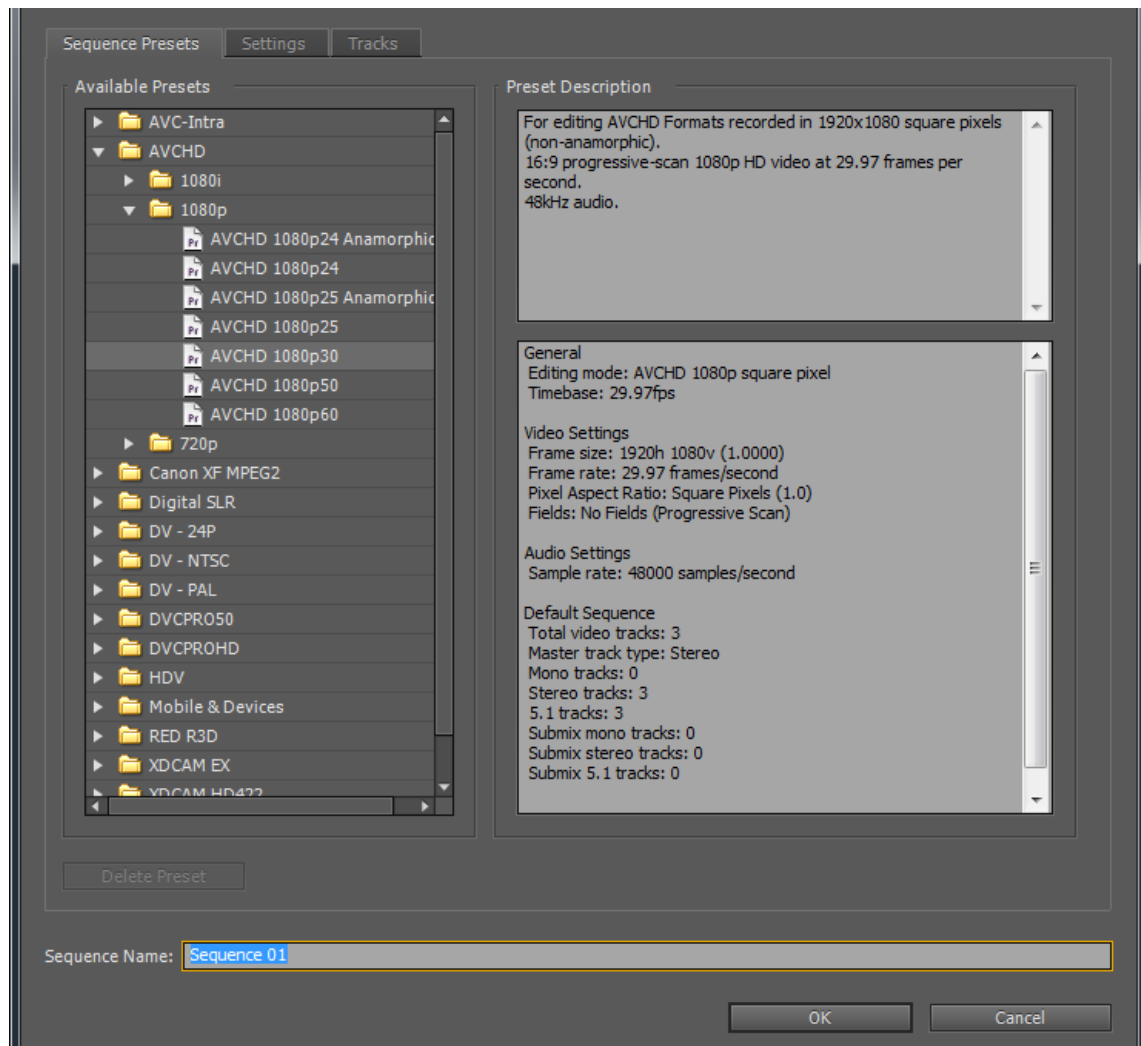
PICTURE 27. Sequence presets in Premiere Pro CS5.5 (Premiere Pro cs5.5 2014, print screen)

Step 4

At this point the main working window opens. On the bottom, there is the timeline (5) where the actual editing is mainly done. On the left of the timeline (4), there is the effects library tab where the desired effects like audio and video transitions can be found. The black section (3) is the preview section where the edited footage can be previewed. Section 2 is the effect control panel where the amount and duration of the chosen effect can be altered. Section 1 is the project section. This is where the edited materials are imported to. Go to section 1 and right click somewhere on the grey empty space below the sequence sign and choose import. From the opened window select the footage that is meant to be edited and click open.
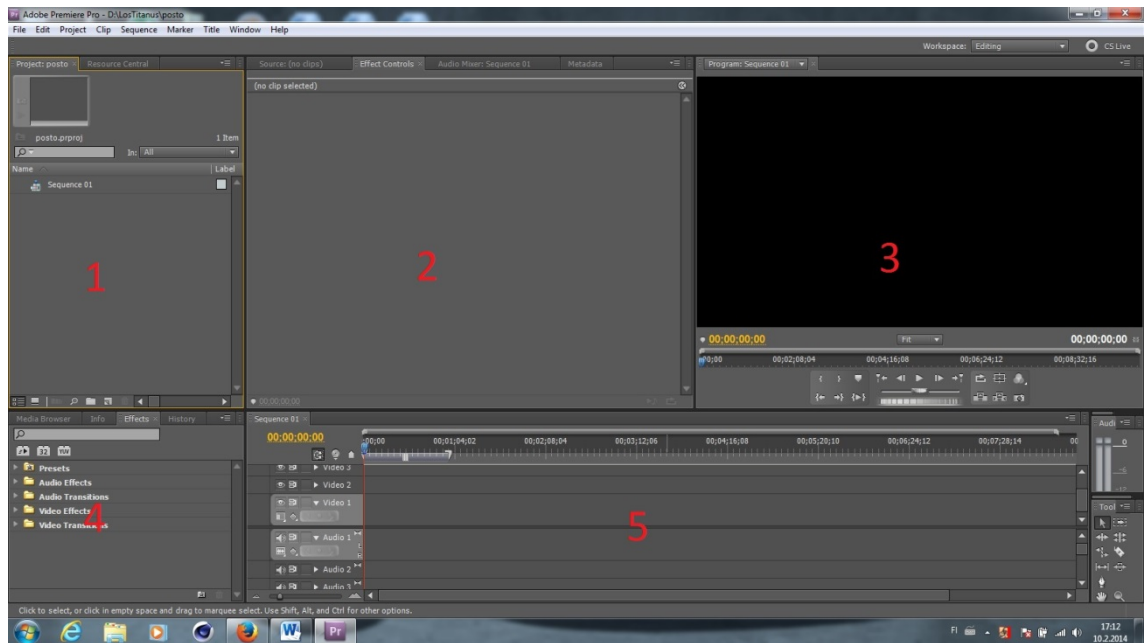

PICTURE 28. The default layout of Premiere Pro CS 5.5 (Premiere Pro cs5.5 2014, print screen)

Step 5

Once the desired footage is imported, they will appear on the project window (picture 29). This is the other part where the sequence settings demonstrated in step 3 can be set. This is done by right clicking on one of the imported pieces of footage and selecting *New Sequence From Clip*. This will create a sequence with settings according to the footage.

Now that the sequence is set properly, the pieces of footage can be dragged on to the timeline and the editing can start.
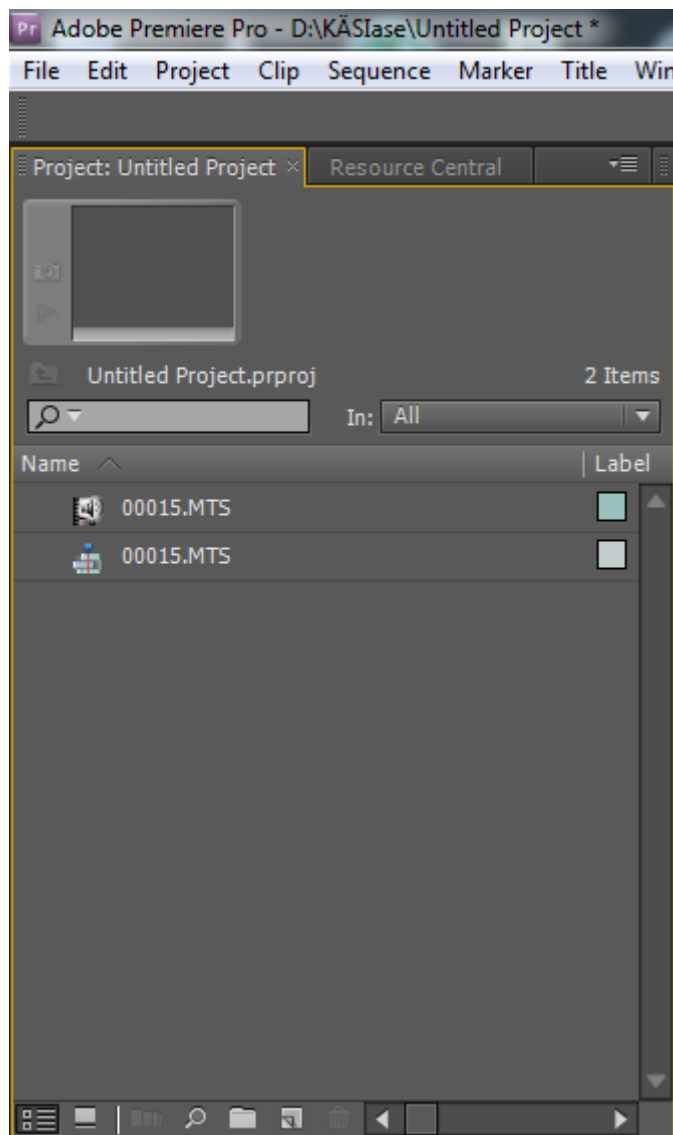
PICTURE 29. The Project window in Premiere Pro CS5.5 (Premiere Pro cs5.5 2014, print screen)

When a piece of footage is dragged to the timeline, the application automatically separates the video and audio tracks (picture 30). The audio track can be cut in the same way than the video track. By selecting the audio track and pressing backspace, it can be deleted and replaced for example with a song. Audio files are imported and dragged to the timeline in the same fashion than video files.
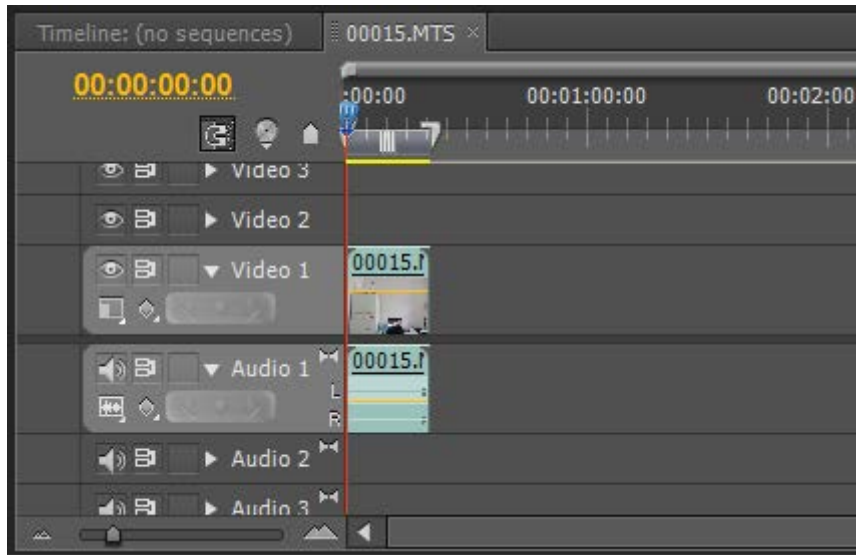
PICTURE 30. The timeline in Premiere Pro CS5.5 (Premiere Pro cs5.5 2014, print screen)

8.3   Cutting

The word cutting in video production comes from the earlier stages of film making. Back in the days video was captured to a film roll and when there was parts that needed to be deleted or scenes that needed to be put together, the film roll was cut from the desired point and either deleted or glued together to another film.

Cutting is considered to be art, and cutters tend to have their own style and their own visions on how the video should look like. So what comes to cutting, there is no rules, it is all up to the liking and vision of the cutter.

8.3.1 Cutting with Premiere Pro CS5.5

Once the footage is on the timeline, the cutting can begin. The cutting tool can be found on the right side of the timeline (picture 31). The symbol of the cutting tool is a razor-blade and in the application it is called the razor tool.


PICTURE 31. The tool window in Premiere Pro CS5.5 (Premiere Pro cs5.5 2014, print screen)

Once the razor tool is selected the arrow of the mouse becomes a razor. The actual cutting is done by simply clicking in the desired section of the video or audio track in the timeline. This action cuts the footage in 2 pieces and the undesired part can be either deleted or left for later use. The pieces of footage can be moved around the timeline using the arrow tool (shown selected in picture 31).

8.4 Video and audio transitions

Once the footage is cut, it is time to place these pieces of footage together. These clips can be simply dragged together in the timeline without any kind of transition, or a transition effect can be placed between the two clips. The transition effects can be found in the effect library section on the left of the timeline (picture 32).
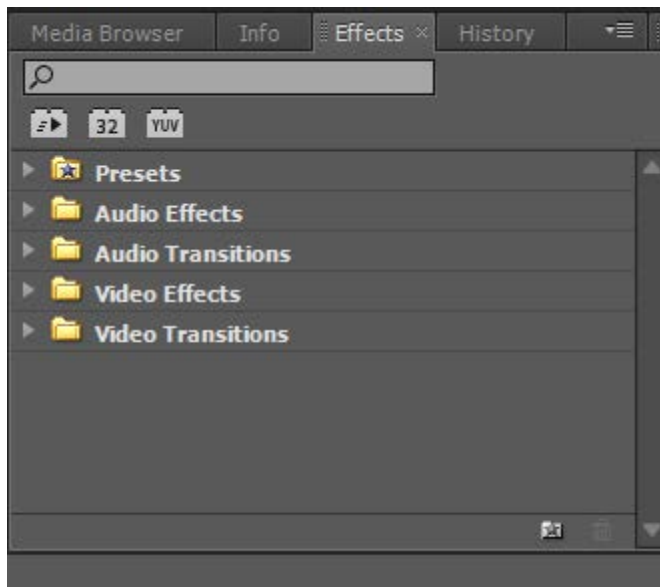
PICTURE 32. The effects library in Premiere Pro CS5.5 (Premiere Pro cs5.5 2014, print screen)

By clicking on the arrow before the desired folder, a new sub folder opens with the available choices. There is a good variety of different choices for video and audio transitions and the best way to find ones own style is by trying out the transitions. The desired transition is applied to the footage by dragging it to the timeline between the 2 clips (picture 33).
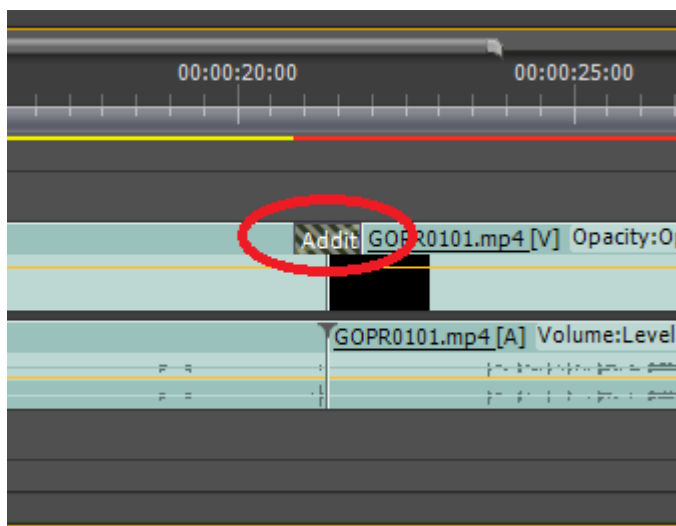
PICTURE 33. Adding the transition in Premiere Pro CS5.5 (Premiere Pro cs5.5 2014, print screen)

By clicking on the added transition (picture 33, inside the red circle), the controls of this effect will open in the effect control tab just above the timeline (picture 34). In the effect control tab, the attributes of the transition effect can be altered. Attributes like the duration of the transition, the starting and ending point of the transition.
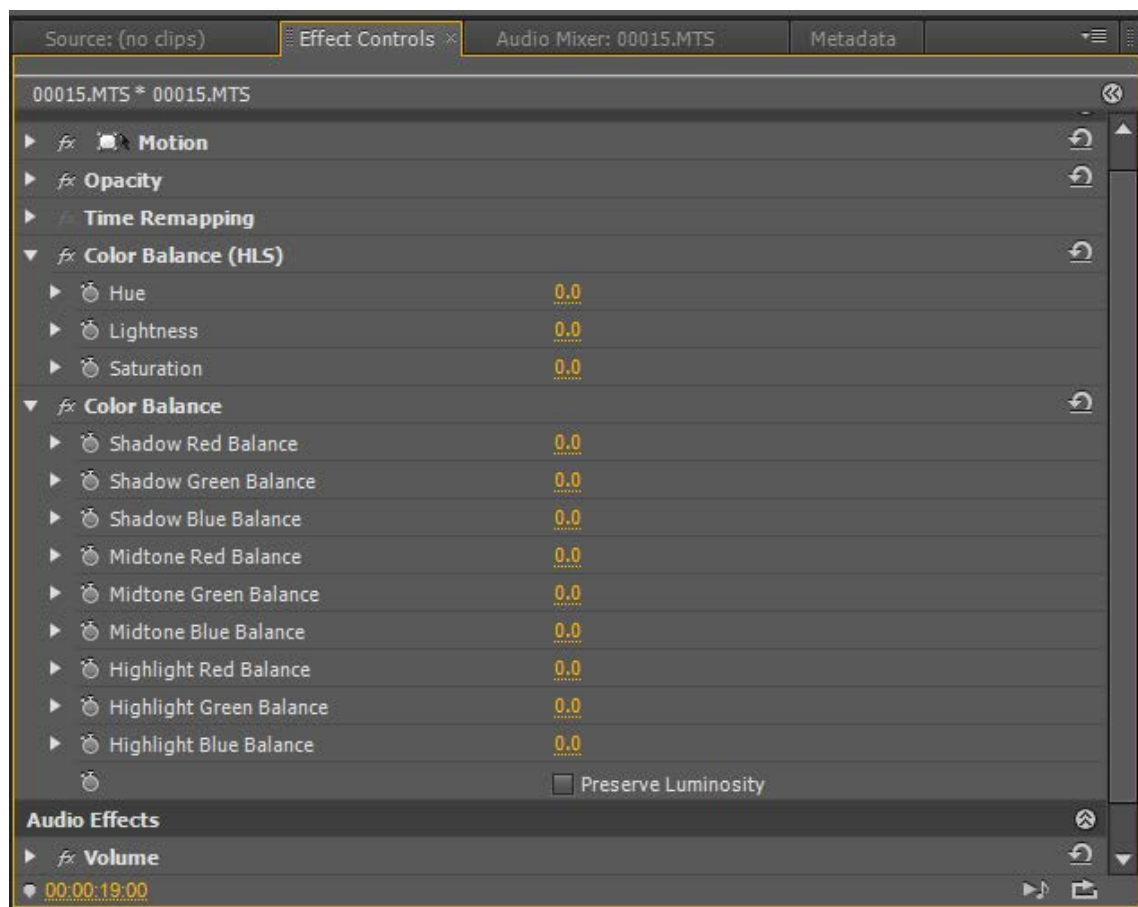

PICTURE 34. The effect control window in Premiere Pro CS5.5 (Premiere Pro cs5.5 2014, print screen)

8.5 Adding titles or images

There are several ways to add text to your footage whether it is for a title or information purposes. The text or images can be made with Microsoft paint or Photoshop or any other type of image software. Once your titles, logos or pictures are ready (whether they were downloaded from the internet or made by yourself), just simply import them to the sequence the same way the video or audio footage was imported. The title and pictures can then be dragged to the timeline in the same fashion as the video footage. The transition effects can also be added to pictures and title.

8.6   Changing the color levels

There are several ways to change the color of the footage. This is one of them. Whether to adjust a certain color or making the footage black & white, the color levels are altered by selecting video effects on the effects tab on the left side of the timeline. From there select color correction and from the opened sub category drag color balance and color balance (HLS) to the footage on the timeline. This will open the effect controls to the effects tab (picture 35).


PICTURE 35. The effect control window in Premiere Pro CS5.5 (Premiere Pro cs5.5 2014, print screen)

From the color balance (HLS) section, the footage can be made to black & white by de-saturating it (change the saturation value to -100). From the color balance section the color feeling of the footage can be changed. It is recommended to try out the levels to see what happens and learn from there. As an example, if the footage was shot in red lighting conditions and the colors of the footage are desired to look natural, the values of red must be decreased.

8.7   The final steps

After the video is edited, it is time to put it to an actual video format so that it can be opened in media players or uploaded to the internet. For the moment, it exists only as a Premiere Pro project file which can be opened only with a couple of applications from the adobe software family.

Once the video is ready, click on the sequence that was created from one of the video clips that were imported, to select it. Once the sequence is selected go to File -> Export-> Media or press Ctrl+M (picture 36)
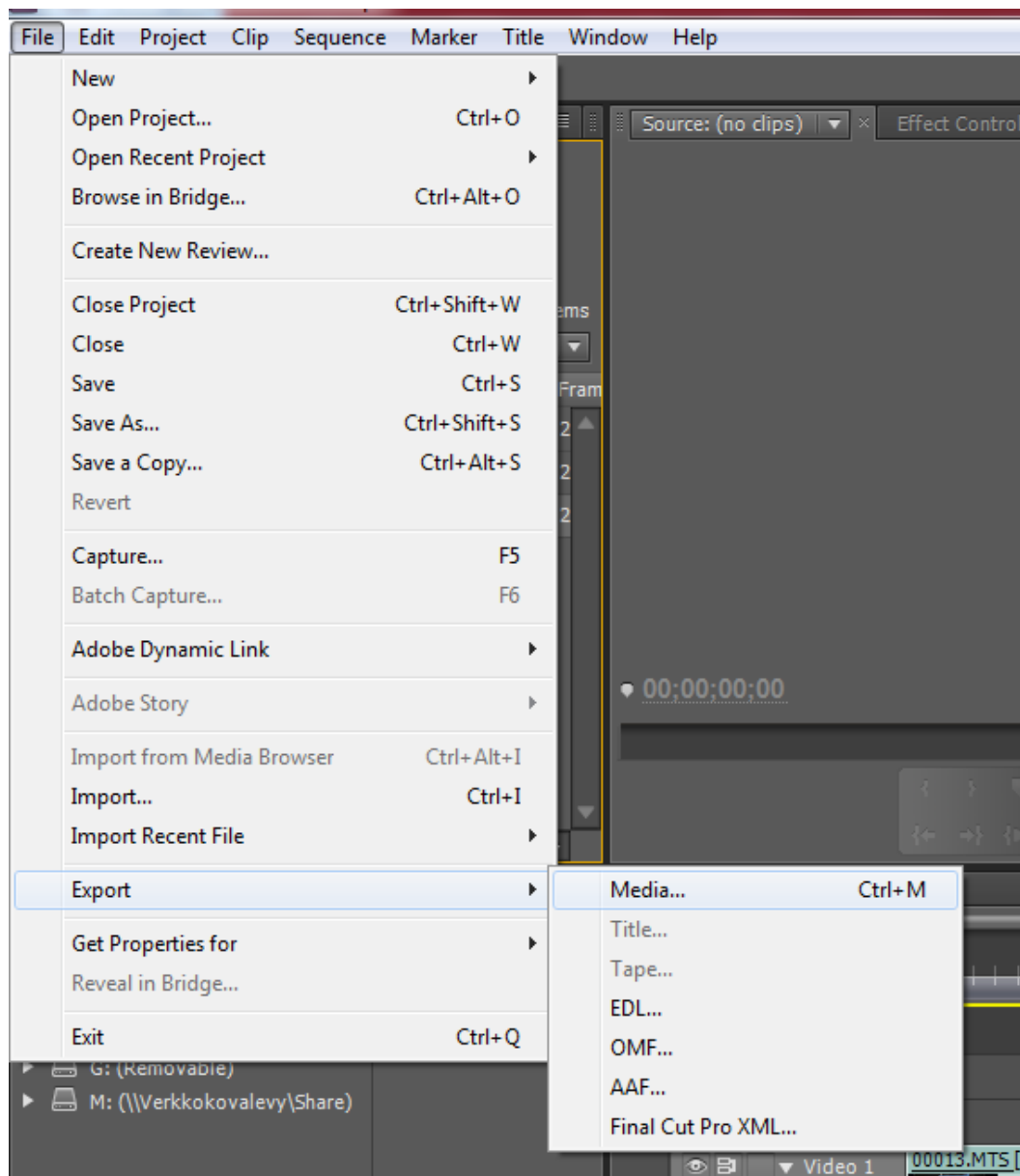

PICTURE 36. Choosing Export Media in Premiere Pro CS5.5 (Premiere Pro cs5.5 2014, print screen)

The Export Settings Window opens (picture 37). To be sure to that the same video quality that the footage was filmed in stays in the final product, it is crucial to click on the first box under "Export Settings" which says Match Sequence Settings. This will keep everything in the same settings than the original footage.

Later on, if the video has to be in a smaller file size the project folder can be re-opened in Premiere Pro and the settings changed accordingly, this may result in bad video quality and other problems. The location where the final product is stored in, can be changed on the "Output Name" part,

Once the settings are set, click on Export. The time that the exporting takes depends on the size of the video and the performance of the computer used.
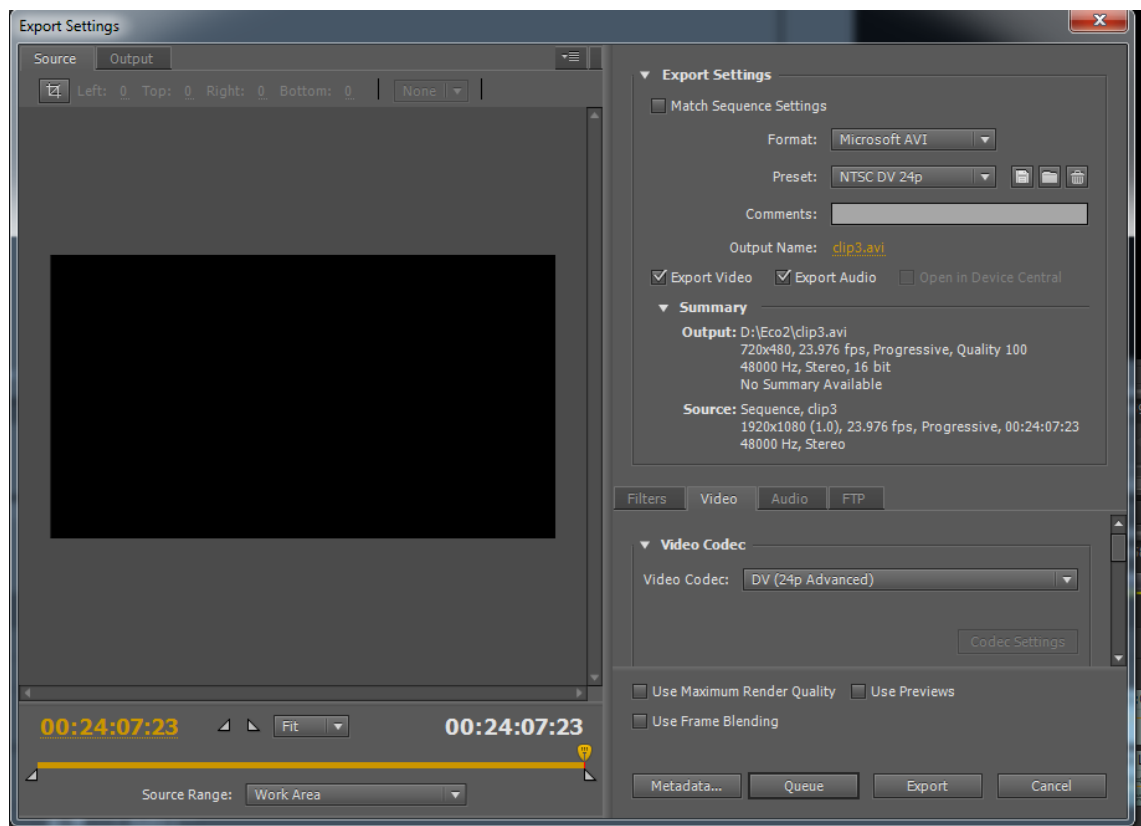
PICTURE 37. The export settings in Premiere Pro CS5.5 (Premiere Pro cs5.5 2014, print screen).

9 CONCLUSIONS

The usage of videos is growing year by year and they play a key role in today´s marketing and content creation for a variety of media. The popularity of videos is based on the fact that they are moving imagery combined with sound and they can transmit tons of information in a relatively short amount of time. "An image tells a thousand words", imagine how many words a moving image tells.

Almost all the cameras available today are capable of shooting decent HD video and the software needed for basic editing is also available at a relatively cheap price. The reason for a lot of companies not making their videos by themselves is usually the lack of knowledge. A lot of this knowledge is scattered in small pieces all around the internet, and for it to be accessible you have to know the basics. Without knowing the basics it is very hard to know even the terms which you start searching with. The majority of the tutorials found in the internet are made with the assumption that the viewer already knows the basics and this is what this thesis was made for.

The goal of this thesis was to create a manual of the basics of video production, to a person that is not familiar with the subject. I gathered information from all over the internet, from educational sites to video tutorials. I wanted to cover as many aspects as possible in order to give my client the easiest start possible into the world of video production. I started by gathering information about the equipment needed for shooting video with a professional touch to it, I went through DSLR camera and it´s basic settings to the accessories like tripods, rigs, lights, microphones and memory cards. The accessories are the key to make the video look and sound more professional. I tried to keep the order of the subjects logical, so after the equipment part the manual concentrates on the stages of preparing for the actual filming. Parts like tips on writing a script, where to film (milieu) and what to take in consideration about it and a basic lighting setup. After the proper gear and preparations where done, I concentrated on the filming itself with different technics and the final part editing and rendering out the final product.

Kojako my client was satisfied with the manual and believed to be able to produce videos by following the instructions, so in this aspect I achieved the goal of the thesis. I

also showed this thesis to a starting film maker and the feedback was positive. The biggest success of the thesis in Kojako´s and in my mind as wel,l was the fact that this manual covers the basics from the right equipment to a finished video.

I consider the material that I gathered very reliable. I used a lot of different sites as the source of my information, but because of my previous knowledge on the subject, I am certain about the reliability of the information. I also double checked many of the information that I wasn't sure about.

I have been in some video production courses and done some videos in the past as my work, but I still learned a lot of new things in the making process of this thesis. Especially about the camera accessories and some filming technics. Some of these things are going to be implemented in my own productions for sure.

REFERENCES

Bobatkins 2013.
http://www.bobatkins.com/photography/digital/canon_eos_5D_mkii_review_5.html

Cambridgeincolour 2014. http://www.cambridgeincolour.com/fi/tutorials/camera-exposure.htm

Cameralabs 2014.
http://www.cameralabs.com/reviews/Nikon_D5100/movie_mode.shtml

Captainkimo 2013. http://captainkimo.com/full-frame-camera-vs-cropped-sensor/

Cnet 2012. http://reviews.cnet.com/8301-6501_7-57554468-95/the-best-cameras-for-shooting-video-roundup/

Desktopvideo 2014.
http://desktopvideo.about.com/od/desktopeditinghardware/bb/externalmic.htm

Digitalcameraworld 2011. http://www.digitalcameraworld.com/2011/06/29/dslr-video-a-beginners-guide-to-shooting-hd/

Digital-photography-school 2014a. http://digital-photography-school.com/aperture

Digital-photography-school 2014b. http://digital-photography-school.com/rule-of-thirds

Dummies 2014a. http://www.dummies.com/how-to/content/nikon-d5100-for-dummies-cheat-sheet.html

Dummies 2014b. http://www.dummies.com/how-to/content/controlling-iso-with-a-nikon-d5100.html

Dummies 2014c. http://www.dummies.com/how-to/content/how-to-change-white-balance-settings-on-a-nikon-d5.html

Jouenalism.ryerson 2013. http://www.journalism.ryerson.ca/workshop/868/4/

Lesliewand 2013.
http://www.lesliewand.com.au/video_course/video_course_notes_2.htm

Luispower 2013. http://luispower2013.wordpress.com/2013/03/12/the-180-degree-rule/

Marshalmonitors 2014. http://www.marshallmonitors.com/products/microphones/FR-310/

Mediacollege 2012a. http://www.mediacollege.com/video/camera/tripod/

Mediacollege 2012b. http://www.mediacollege.com/lighting/three-point/

Mediacollege 2012c.
http://www.mediacollege.com/adobe/premiere/version/history.html

Merriam-webster 2013. http://www.merriam-webster.com/dictionary/milieu

Oneslidephotography 2011. http://oneslidephotography.com/s-card-capacity-for-dslr/memory-card-capacity-for-dslr-sd-card-class/

Ovocontrol 2014. http://ovocontrol.com/product/camera/camera-tripod/

Pc3production 2012. http://www.pc3production.org/rule-of-thirdsheadroomlead-room/

Photographylife 2014a. http://photographylife.com/what-is-aperture-in-photography

Photographylife 2014b. http://photographylife.com/what-is-iso-in-photography

Planetdigital 2014. http://www.planet-digital.net/front/index.php/professional-photo-for-video/dslr-rig/253-dslr-rig-shoulder-mount-rl-02

Reelseo 2014. http://www.reelseo.com/web-video-script/

Rosco 20113. http://www.rosco.com/spectrum/index.php/tag/litepad-ho/

Screenwriting 2013. http://www.screenwriting.info/01.php

Sdcard 2014. https://www.sdcard.org/developers/overview

Snapsort 2014. http://snapsort.com/blog/2011/09/12/the-rule-of-thirds/

Steves-digicams 2014. http://www.steves-digicams.com/knowledge-center/how-tos/film-and-video-production/production-understanding-head-room.html

Thenextweb 2014. http://thenextweb.com/media/2011/12/14/1-2-billion-people-watched-over-200-billion-online-videos-in-october-says-comscore/#!xvt3e

Whitericecouple 2014. http://whiteonricecouple.com/photography-travels/white-balance-digital-photography/

Wikipedia 2014a. http://en.wikipedia.org/wiki/List_of_common_resolutions

Wikipedia 2014b. http://en.wikipedia.org/wiki/Aspect_ratio_%28image%29

Wikipedia 2014c. http://en.wikipedia.org/wiki/Progressive_scan

Williamssound 2014. http://www.williamssound.com/catalog/mic-054

Youtube 2011a. http://www.youtube.com/watch?v=rmFwxYidvNU

Youtube 2011b. http://www.youtube.com/watch?v=2vuluGDg96Y

Youtube 2011c. http://www.youtube.com/watch?v=0pd0K2u1Bk8

Youtube 2013a. http://www.youtube.com/watch?v=tv7eSKcAoiQ

Youtube 2013b. http://www.youtube.com/watch?v=lPC3ps_R8y0