Video Basics

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Zettl

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Herbert Zettl

San Francisco State University

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*For **Becky Hayden***
who, as a Wadsworth editor,
helped develop the first edition of
VIDEO BASICS

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About the Author

Herbert Zettl is a professor emeritus of the Broadcast and Electronic Communication Arts Department at San Francisco State University (SFSU). He taught there for many years in the fields of video production and media aesthetics. While at SFSU he headed the Institute of International Media Communication. For his academic contributions, he received the California State Legislature Distinguished Teaching Award and, from the Broadcast Education Association, the Distinguished Education Service Award.

Prior to joining the SFSU faculty, Zettl worked at KOVR (Stockton-Sacramento) and as a producer-director at KPIX, the CBS affiliate in San Francisco. While at KPIX he participated in a variety of CBS and NBC network television productions. Because of his outstanding contributions to the television profession, he received an Emmy for the prestigious Governors' Award of the National Academy of Television Arts and Sciences (NATAS), Northern California Chapter, the highest honor the organization can give. He is also a member of the Broadcast Legends of the NATAS Northern California Chapter.

In addition to this book, Zettl has authored *Television Production Handbook, Television Production Workbook,* and *Sight Sound Motion.* All of his books have been translated into several languages and published internationally. His numerous articles on television production and media aesthetics have appeared in major media journals worldwide. He has lectured extensively on television production and media aesthetics at universities and professional broadcast institutions in the United States and abroad and has presented key papers at a variety of national and international communication conventions.

Zettl developed an interactive DVD-ROM, *Zettl's VideoLab 4.0,* published by Cengage Learning. His previous CD-ROM version won several prestigious awards.
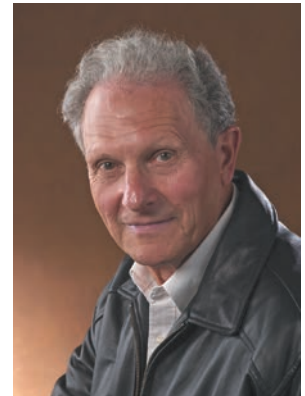
Preface

Despite the ever-increasing speed and variety of improvements and innovations in all areas of video equipment, the basic steps of moving from a good idea to a professional-looking video piece have pretty much remained the same, regardless of whether you use an old camcorder or the latest DSLR camera. The many automated functions, such as optimal exposure under various lighting conditions or stabilizing minor camera wiggles, may tempt you to believe that you can produce an award-winning video without going through basic training. This may be true—if you have exceptional luck or an inordinate amount of time and patience to choose the best shots and assemble them in the most effective sequence. But as a professional, you cannot rely on luck or intuition—you have to *know* how to produce effective video on a regular basis. *Video Basics* is written in the spirit of helping you learn video production from the ground up so that your move from amateur to professional will be relatively painless and maximally effective. A solid knowledge of the basics of video will also give you the confidence to judge what is good or bad, even if it is your own work. Better yet, it will enable you to go beyond the conventional—and to break the rules if necessary for the optimal clarification and intensification of a message.

Do not be bothered by the term *basics*. It does not imply an evaluation of the reader but rather describes an essential prerequisite for providing you with a solid foundation of video production. Note, however, that reading even this text alone won't make you a hotshot videographer. Much like learning how to play a musical instrument, video production requires considerable hands-on practice.

FOR THE INSTRUCTOR

As with the previous editions, *Video Basics 8* is streamlined so that it can be taught in a single semester. It contains information about the basic studio and field equipment and its normal use. Although more and more video productions are done with a single camera to capture shots designed for postproduction editing, multicamera productions are very much alive and well in the larger entertainment field and especially in sports coverage. The text is written so that it can be easily adapted to your specific production setup and emphasis. For example, although your emphasis

may be on the editing of single-camera footage, the principle of good and bad cuts can be demonstrated most effectively by switching with a multicamera setup. A jump cut, for example, can be demonstrated much more easily and effectively by switching from one camera to another than by hunting for one in your video archives.

A real, however temporary, problem might be that technology is sometimes outrunning a common terminology for its use. For example, some directors may still call for a VR roll to retrieve a news package from a server, even though there is nothing to roll, whereas others may call for specific server and cut numbers. But this time of transition should not prevent you from using and teaching a traditional terminology, even if there are variants from one region or station to another.

The following *Video Basics 8* highlights might be helpful even if you have used a previous edition.

VIDEO BASICS 8 HIGHLIGHTS

To make full use of this text, you should be aware of some its features. All are intended to help the student learn a complex subject in an expeditious and affable way.

Chapter Grouping

To cover the broad spectrum of video production, this book is divided into six parts:

- Production: Processes and People

- Image Creation: Digital Video and Camera

- Image Creation: Sound, Light, Graphics, and Effects

- Image Control: Switching, Recording, and Editing

- Production Environment: Studio, Field, and Synthetic

- Production Control: Talent and Directing

As you can see, the book describes how to move from an initial idea to an effective screen event regardless of whether you are doing a wedding video, a documentary, or large-screen digital cinema. It discusses the people normally involved in the production process, the major tools of video production, and how to use them to get the intended job done effectively and on time.

Key Terms

Each chapter's key terms appear at the beginning of the chapter, in the context of the text, and again in the extensive glossary. They are intended to prepare you for the chapter's terminology and serve as a quick reference as needed. The key terms are also identified in **bold italic** in the chapter text in the context in which they are defined.

You should make an effort to read the key terms before moving to the actual chapter text. There is no need to memorize them at this point—they merely serve as

the first part of the pedagogical principle of redundancy. Hopefully, they will trigger an *aha!* response when you encounter them again in context.

Key Concepts

The key concept margin notes emphasize each chapter's principal ideas and issues and are intended primarily as a memory aid. Once you learn a key concept, it should be easier to retrieve the rest of the related information.

Main Points

These summaries recap the chapter's most important points and key concepts. They do not represent a true précis—a precise and accurate abridgment of the chapter content—but are intended as a final reinforcement of the essential points. Beware of thinking that all you need to do is read the summaries. They are no substitute for the in-depth chapter content.

The following information is directed primarily to instructors who are already familiar with previous editions of *Video Basics.*

New to Video Basics 8

All chapters in this edition are updated and, where necessary, the text is streamlined and the concepts clarified:

- All references to videotape and its operation are deleted.
- The concept of a raster is introduced in chapter 3.
- Super-HDTV 4K scanning modes are discussed in more detail.
- Some new DSLR camera mounting devices are pictured, and there is a new section on drones.
- The discussion of electronic shutters is expanded.
- The equipment contained in an audio postproduction room and the Pro Tools display are updated.
- Basic interview lighting is added.
- New digital video recorders are introduced.
- All references to linear editing are deleted.
- The two-column script and its visualization are updated.

SUPPORT MATERIALS

Video Basics 8 offers a wealth of support materials for both instructors and students. These thoroughly class-tested and highly praised print and electronic supplements are available to assist you in making the learning—and the teaching—experience as meaningful, enjoyable, and successful as possible.

For Students

As a student you can reinforce the text with MindTap for *Video Basics 8*.

MindTap for Video Basics 8   This customizable digital learning solution combines readings, multimedia, activities, and assessments into a singular learning path, guiding students through the course, maximizing their study time, and helping them master course concepts. MindTap for *Video Basics 8* includes chapter engagement activities, an interactive e-book, homework assignments (adapted from the *Video Basics Workbook*), chapter quizzes, and flashcards. New to MindTap is *Zettl's VideoLab 4.0*. These interactive videos allow you to manipulate production equipment in a virtual studio or field environment and apply various production techniques from the text. For example, you can mix audio, frame shots, zoom in and out, create your own lighting effects, and have plenty of opportunity for editing. (*Zettl's VideoLab 4.0* is also available on DVD-ROM.) To learn more, ask your Cengage Learning representative about MindTap or visit *www.cengage.com/mindtap.*

For Instructors

To help you with class preparation and classroom activities, several assessments and additional teaching aids are available. If they don't fit your teaching style or environment, however, you should in no way feel obliged to use them.

Zettl's VideoLab 4.0   Even if you lecture or conduct your lab activities in a studio, you may find it convenient, at least initially, to demonstrate some of the production techniques by first showing the class examples from *Zettl's VideoLab 4.0,* included with MindTap for *Video Basics 8*. Such a primer seems to facilitate the use of equipment in an actual production or lab situation. *Zettl's VideoLab 4.0* now features Advanced Labs—challenging exercises designed to improve students' ability with the equipment and concepts introduced in the regular modules. (These tutorials are also available on DVD-ROM.) Ask your Cengage Learning representative for more information.

Instructor's Manual   The *Instructor's Manual for Video Basics 8* includes chapter notes with teaching suggestions and activities, multiple-choice questions, essay/discussion questions, and additional teaching resources. Note that for the multiple-choice questions, the correct answer is indicated by a → symbol and the page number where the specific problem is first discussed in the text.

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Herbert Zettl

Production: Processes and People

Today it is possible to use your smartphone and a laptop computer to create a documentary in high-definition video and sound that will garner you an Oscar nomination. Right? Well, there is always the chance that you get lucky—once. But as a professional in the video business, you must be much more consistent and produce high-quality programs on a more regular basis. To achieve this goal, you must understand not only how a specific piece of equipment works but also how to get from idea to video image efficiently and effectively—the whole production process. You must also learn to work with people—a team of experienced production experts—all of whom must collaborate to create a worthwhile program and bring it to its intended audience. This book will help you become such a professional.

Part I explores how the production process works and how to move systematically from the initial idea to the finished production with confidence and minimal wasted effort. You are also introduced to the standard technical and nontechnical production teams.

KEY TERMS

angle The particular approach to a story—its central theme.

field production Production activities that take place away from the studio.

medium requirements All personnel, equipment, and facilities needed for a production, as well as budgets, schedules, and the various production phases.

multicamera production The use of two or more cameras to capture a scene simultaneously from different points of view. Each camera's output can be recorded separately (iso configuration) and/or fed into a switcher for instantaneous editing.

postproduction Any production activity that occurs after the production. Usually refers to video editing and/or audio sweetening.

preproduction The preparation of all production details.

process message The message actually perceived by the viewer in the process of watching a video program.

production The actual activities during which an event is recorded and/or televised.

production model Moving from the idea to the program objective and then backing up to the specific medium requirements to achieve the program objective.

program objective The desired effect of the program on the viewer. The defined process message.

single-camera production All the video is captured by a single camera or camcorder for postproduction editing. Similar to the traditional film approach. Also called *film-style.*

studio production Production activities that take place in the studio.

Production Process

You are ready to roll. You've got a million ideas for shows, each of which is considerably better than what you ordinarily see on television. But how exactly do you get them out of your head and onto the screen? This step—the production process—is the core of all successful programs. It cannot be done intuitively; it must be learned. But don't be dismayed.

This chapter provides you with a useful guide to moving from idea to image—your prizewinning masterpiece. It also explains the production phases and leads you through the preproduction steps. Finally, it helps you generate useful program ideas on demand and points you toward the ever-closer convergence of video and digital cinema productions, regardless of whether they are done as single- or multicamera productions in the studio or in the field.

▶ **PRODUCTION MODEL**
   Organizing the details for moving from original idea to finished product

▶ **PRODUCTION PHASES**
   Preproduction, production, and postproduction

▶ **IMPORTANCE OF PREPRODUCTION**
   Moving from idea to script and from script to production details

▶ **PREPRODUCTION: GENERATING IDEAS ON DEMAND**
   Brainstorming and clustering

▶ **PREPRODUCTION: FROM IDEA TO SCRIPT**
   Program objective, angle, evaluation, and script

▶ **PREPRODUCTION: FROM SCRIPT TO PRODUCTION**
   Medium requirements and budget

▶ **MEDIA CONVERGENCE**
   Digital cinema and video and single- and multicamera use in the studio and in the field

MindTap®

Start by reviewing the chapter's learning objectives. After reading this chapter, you will be able to do the following:

1. List the three major production phases.
2. Define each of the production phases.
3. Discuss the importance of the program objective.
4. Explain the process of moving from idea to script.
5. Graph how the program objective determines the medium requirements.

PRODUCTION MODEL

Don't be dismayed. A model is not a set of absolute rules; it is strictly a suggestion of how to approach and accomplish a difficult task. In this case it is meant to help you organize the many details necessary to move from the original idea to the finished product. The production model is not a foolproof system that works every time you use it but more of a road map for how to get from idea to screen image with the least number of detours.

The production model is based on the realization that the message that counts is not necessarily the one you start with but the one that is perceived by the viewer. This process is a bit like cooking: the final success of your undertaking is measured not by the ingredients you use (the initial idea) but whether your guests like the meal (the message actually received). Wouldn't it make sense, then, to start with an idea of how the meal should finally look and taste and then figure out what ingredients you need to make it?

This production model works on the same principle: once you have developed the initial idea, you move directly to what, ideally, you want the viewers to learn, feel, or do.[1] The ***production model*** suggests that rather than move from the initial idea to the production, you jump from the initial idea to a ***program objective***—the desired effect on the viewer. Then and only then do you back up and decide on the medium requirements necessary to produce the intended communication effect. Because the final effect is the result of a process between what you present on-screen and what the viewer actually perceives, this all-important message is called the ***process message***. **SEE 1.1**

As you can see, this model shows four distinct processes: (1) moving from the basic idea to the program objective (desired effect on the viewer) and the angle; (2) determining the necessary medium requirements in preproduction; (3) generating the program objective in the production phases; and (4) distributing the message (the production) to the target audience.

What happened to the process message? You won't really know what the actual process message is unless you observe a viewer watching your show and reacting to it. This is the weakest point in the production of video and broadcast communication. We rarely, if ever, know

Program Objective (Desired Effect)
You move from the basic idea directly to the desired effect on the viewer—the program objective.

Basic idea

Program objective (desired effect)

Medium Requirements
The program objective and the angle will determine the specific medium requirements— what production elements are necessary to meet the objective.

▶ Content elements
▶ Production elements
▶ People
▶ Distribution

Message Actually Received (Real Effect or Process Message)
The message moves through the phases of production and is delivered to the target audience.

Process message (real effect)

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1.1 Production Model
The production model shows how to move from the show idea to the finished program with maximum efficiency.

1. This concept is based on the classic instructional design by Mager. See Robert Mager, *Preparing Instructional Objectives,* 3rd ed. (Atlanta: Center for Effective Performance, 1997).

just what the actual process message is or how close the program objective came to the actual viewer impact. Rating services estimate (more or less accurately) how many people are watching a particular show but not what they actually think, feel, or do while watching it. This is why smart producers of comedy series let a studio audience see each installment before it gets on the air. If a sure-fire joke does not generate audience laughter, it is rewritten on the spot or scrapped.

PRODUCTION PHASES

Over the years certain routines—production processes—have evolved that can facilitate the complex job of getting ideas translated into effective shows. These processes include chores that need to be done *before* the production, *during* the actual production activities, and *after* the production. In production lingo we call these the preproduction, production, and postproduction phases.

Preproduction includes all the planning and coordination of details before the actual production activities.

Production starts when you open the studio doors and turn on the equipment or when you load your vehicle with the gear for a field production. In production you actually encode, or translate, the original program objective into a series of video segments. Production involves the medium requirements—the coordination of production and technical people and the operation of the production equipment.

In *postproduction* you select the best bits and pieces of the recorded event, enhance their picture and sound quality as necessary, correct some of the minor production mistakes, and assemble the shots and scenes into a coherent whole—the video program. For complicated programs that require a great deal of editing, the postproduction phase may take as long as, or even longer than, the preproduction or production period.

This chapter focuses on preproduction. The details of production and post-production take up the rest of the book.

IMPORTANCE OF PREPRODUCTION

In preproduction you develop the initial program idea, define the program objective, and select the people and equipment necessary to translate your idea into effective video and audio images.

Meticulous preproduction is a key factor in maximizing your video production efficiency and effectiveness. There is a proven formula that you must not only remember but also always apply, even if the production you are doing is relatively simple: *the more attention you pay to preproduction, the more effective the production and postproduction phases will be.* Remember this advice especially when you are tired of organizing details and are itching to go on-location and start shooting.

Normally, the preproduction activities require two distinct approaches: the move from idea to script and from script to production details.

PREPRODUCTION: GENERATING IDEAS ON DEMAND

All good productions start with a good idea. As obvious as this sounds, you may be surprised to find that one of the more difficult demands in professional video is coming up with good ideas consistently. Often the calendar or clock dictates when to be creative. Unfortunately, tight production schedules will not tolerate your waiting for divine inspiration.

To help you find new ideas on a regular basis, you must call on techniques that jolt your imagination even on a down day. Two often-belittled but highly effective devices for unlocking ideas and getting the creative process started are brainstorming and clustering. Although you should try to avoid clichés, don't fall into the trap of always searching for out-of-the-box ideas. There are plenty of new and workable show ideas still in the box.[2]

Brainstorming

Brainstorming involves freeing your mind of the restrictions you impose on it because you feel, however unconsciously, that you have to think and say something that fits the situational framework and others' expectations. It is a form of "conceptual blockbusting" that ignores or breaks down traditional barriers to creative expression.[3]

Picture yourself for a moment as an observer of a brainstorming session of advertising people who are supposed to think of a "new approach to showing a family car that handles like a high-powered sports car." Six people sit in a circle; in the middle of the circle are two microphones and a small audio recorder. One of the people (P1 = person 1), who is also the team leader, starts with:

P1: "Knock, knock!"

P2: "Who's there?"

P3: "Nobody. It's raining."

P4: "Japanese calligraphy."

P5: "Slick roads."

P6: "Sports car–like handling."

P1: "Bullet-like fast."

P2: "Slalom ski race."

P3: "Replaces space shuttle."

P4: "Calligraphy of haiku poetry."

And so forth.

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2. See Stuart W. Hyde, *Idea to Script: Storytelling for Today's Media* (Boston: Pearson Education, 2003).

3. See James L. Adams, *Conceptual Blockbusting,* 4th ed. (Cambridge, MA: Perseus, 2001).

After a few more go-arounds, one of the participants gets annoyed at person 4, who consistently expanded on the theme of Japanese calligraphy and its aesthetic and spiritual meanings. Person 4, who works as a designer and is currently taking a workshop in Japanese calligraphy, defends herself by saying that this workshop opens up a whole new design world for her—poetry in motion. Someone snickers. Person 1, the team leader, admonishes everybody that anything goes in brainstorming and that, initially, all ideas are equally valid. He reminds the idea team that there should be no judgment passed as to the relevancy of the utterances, however far out they may initially seem. During the discussion period, person 4 says that she could easily paint a beautiful curvy wet road with one brushstroke on which the new red car could safely speed along. Bingo! This idea was finally translated into a highly successful car commercial: first you see the black road being painted on the screen; then you see the red car moving fast, but safely, along the graceful curves of the shiny black road.

Although there should be no restrictions, successful brainstorming depends on a number of conditions:

- It is best done with several people.

- You start out with a general idea or related image (car commercial) and let everybody call out whatever springs to mind.

- It's important to let all minds roam freely and not evaluate or judge any of the ideas, however irrelevant they may seem.

- Document all ideas by audio-recording them or writing them down.

- In the review stage, recite the list of comments several times to discover novel connections.

If necessary, you can do brainstorming by yourself, but you will need some way of recording it or writing it down. One of the more popular solitary brainstorming techniques is clustering.

Clustering

In the middle of a piece of paper, write a single word that seems somehow central to your basic program idea or program objective and circle it. Now write down and circle another word that is somehow associated with your key word and connect the two. Write down other word associations and connect them to the last one circled.

In a short time, you will have created a cluster of words or ideas. Don't try to design a cluster or be logical about it. Work fast so that you will not be tempted to ponder your associations. Let your mind flow freely. When you feel that your ideas are exhausted, don't force yourself to find more or more-logical connections. The idea cluster seems to have a natural limit. You will most likely know when you have enough branches and it is time to stop. If one word or phrase is especially intriguing yet seems out of place, start a new cluster but leave the old one alone. Once you are at that point, look at the finished diagram and search for patterns. These patterns

1.2 Clustering

Note that clustering starts with a central idea and then branches out in various directions. Clustering must be done quickly and uncritically; it is much like written brainstorming.

will inevitably reveal some novel connections and relationships that were not obvious before and can serve as springboards for the program objective (defined process message) and the medium requirements. **SEE 1.2**

As you can see, clustering is similar to brainstorming except that during clustering you create an immediate visual pattern that yields quite readily the major interrelationships of the various ideas.[4] But it is also much more restrictive than brainstorming.

Whatever techniques you use, don't push your brain too hard. Sometimes it helps to relax your brain and think a little goofily.

K E Y   C O N C E P T

Successful brainstorming and clustering depend on a free, intuitive, and noncritical flow of ideas.

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4. Clustering as an idea-unlocking technique for writing was developed by Gabriele Lusser Rico in *Writing the Natural Way,* rev. ed. (Los Angeles: J. P. Tarcher, 2000).

PREPRODUCTION: FROM IDEA TO SCRIPT

You must have some idea of what meal to prepare before starting to cook. The same is true in video production. Running around with your camcorder before deciding what it is you want to tell your viewers is a wasteful activity at best. An effective production process depends on a fairly clear idea of what you want to communicate. As we all experience, however, most initial production ideas are rather vague and rarely concise enough to serve as a definition of the desired communication effect—the program objective. This way of thinking is perfectly normal. As a matter of fact, you should weigh the potential effectiveness of several similar ideas before settling on a single one, but you should not move on to specific production details without first having a clear program objective.

　　For example, suppose you have just moved to Big City, and your daily commute prompts you to "do something about these crazy Big City drivers." You are certainly not ready at this point to plunge into production. Changing your idea to "do a documentary on the crazy Big City drivers" is no improvement. You need to think more about exactly what you want viewers to learn about becoming better drivers. The more precise your definition of the intended effect—the program objective—the easier it is to decide on the appropriate production format and necessary procedures.

Program Objective

Exactly what is it that you want the audience to know, feel, or do? To "do something about these crazy Big City drivers" says little about what to do and how to go about achieving that "something." You need to construct a precise program objective.

　　Rather than tackle all the bad habits of the "crazy Big City drivers," you may want to isolate a single problem that is especially bothersome and that you consider important. As in most learning or persuasion tasks, specific objectives are usually more effective than general ones, and small steps are more easily managed and accomplished by the viewer than large ones. For instance, you may find that the misuse or nonuse of turn signals has become a serious threat to traffic safety. So, rather than address *all* the bad habits of Big City drivers, you can isolate a single objective: *Demonstrate to Big City drivers that turn signals help other drivers react to your changing directions and contribute to traffic safety.*

　　Once you have a clear program objective, you can start visualizing some possible approaches. Because you are a creative person, you come up with several good approaches to this video. But which one should you choose? What you now need is an effective angle.

Angle

In the context of designing a show, an **angle** is a specific approach to the story—a point of view of the event. Effective video programs often have an angle that is different from the usual treatment of the same subject and is more relevant to the viewer. Although the requirement of "finding an angle" has been abused by many newspeople