

Operation of the *Sony FD Mavica 2.1* *MegaPixels* Digital Camera

Documentation



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Problem Identification

◆ Needs Assessment

- ◇ **Statement of the Problem:** Students do not know how to operate the Sony FD 200 Mavica 2.1 Megapixels digital camera. Students find the instruction manuals/booklets insufficient. The organization of the instructions are difficult to follow. Novice users of the cameras find the illustrations in the manuals/booklets hard to follow. Directions often mislead/misguide users and do not provide the assistance that is needed. By providing users a simple and easy to follow this problem can be solved.
- ◇ **Existing Situation:** As is true with most technological products, there are several instructions in the Mavica's instruction manual that are hard to follow. These instructions are written for users whose camera usage is higher than the "novice" users. Some of the students have no digital camera experience, which automatically creates a problem. This problem can be solved with training from a manual that will be created for them.

The instructions are not organized as clearly and efficiently for novice users as they should be. Without these instructions clearly explained, the students cannot successfully complete the project that is attempted to be obtained. Specifically, the students need a step-by-step manual to help them through the process of effectively and efficiently operating the Mavica camera.

- ◇ **Desired Goal:** The desired goal of this project is that students will be able to efficiently operate the Mavica camera.
- ◇ **Gap:** The gap between the existing situation and the desired goal lies in knowledge of operation and the "medium" of that operation. Once the person knows how to efficiently operate the Mavica camera, then that "gap" will successfully be closed.
- ◇ **Reasons for the problem(s)/discrepancies:** Users do not possess the knowledge to operate the Mavica digital camera. And, the instructional manual that is provided with the camera does not provide user-friendly directives.

Problem Identification

◆ Goal Analysis

◇ **AIM:** To create a module for the *Sony FD 200 Mavica* digital camera.

◇ **SET GOALS:**

- Step-by-step guide for capturing digital images and/or movies with the *Mavica* digital camera.
- Break down/ restructure instructions from the *Mavica* instructional booklet in “common” language for users.
- Identify individuals who will be using the *Mavica* digital camera.
- Use pictures from the *Mavica* digital camera to show similarities/ differences to pictures of those from another camera.
- List the parts and functions of the *Mavica* digital camera.

◇ **REFINE GOALS:**

- Step-by-step guide for capturing digital images and/or movies with the *Mavica* digital camera.
- Identify individuals who will be using the *Mavica* digital camera.
- List the parts and functions of the *Mavica* digital camera.

◇ **REFINE GOALS AGAIN:**

- 2nd goal can be dropped because it is not a goal of instruction for the users

◇ **RANK GOALS:**

1. Step-by-step guide for capturing digital images and/or movies with the *Mavica* digital camera.
2. Parts and functions of the *Mavica* digital camera.

◆ Recommended Solution for Instruction:

Based on the goal analysis, the recommended solution for instruction of these skills is to create a print based manual using the Instructional Design Model of Morrison, Ross, and Kemp. The manual will include three chapters, or units: (1) Parts & Functions of the *Sony FD 200 Mavica 2.1 MegaPixels* Digital Camera, (2) Taking & Previewing Digital Images with the *Sony FD 200 Mavica 2.1 MegaPixels* Digital Camera, and (3) Filming & Playing Back Movies on the *Sony FD 200 Mavica 2.1 MegaPixels* Digital Camera.

Analyze Learners and Context

◆ General Characteristics:

- ◇ **Gender:** Male and female.
- ◇ **Age:** Undergraduate and Graduate Students.
- ◇ **Reading Ability:** The learners should be able to read at a college proficiency level, in order to comprehend and follow the instructions in this project.
- ◇ **Socio/Cultural Factors:** There are no socio/cultural factors that are related to the learning of this project.
- ◇ **Economic Background:** Some learners may have more access to equipment that they are learning about.
- ◇ **Previous Experience:** Those learners with prior experience are going to be able to “catch on” faster than those without experience.

◆ Specific Entry Characteristics:

- ◇ **Prerequisite skills:** In order to attempt the instruction of operating camera, the learner should possess the knowledge base of computer operation.
- ◇ **Attitudes and aptitudes:**
 - The learner must be a very patient learner, as it will take time to learn this very high tech camera.
 - The learner must also be willing to take on challenges, as he/she will face those as they attempt to use this piece of equipment with success.
 - Any learner(s) possessing an inherent talent for technology will be at a great advantage over those learners without that talent.
 - Another aptitude for successful learning of operation of the camera is a learner who possesses a “good eye,” as it is often said in the professional business of picture taking. This will reduce one step of the learning curve.

Analyze Learners and Context

Learning Styles:

- ◇ **Perceptual Preferences and Strengths:** Learners who possess both a strong visual and tactile, while at the same time have good control over their kinesthetic movements will be more successful with this project.
- ◇ **Information Processing Habits:** Learners who able to cognitively process well by hearing information, seeing information, then performing information, will have the most success in this project. The reason for this is because this project has a step-by-step “process” type of instructional project design.
- ◇ **Motivational Factors:** The motivational factors that must be present, in order for this project to be successful, include: anxiety (control of it), degree of structure, achievement motivation, and cautiousness. Of these motivational factors listed, cautiousness is the one that is the most important, because of the importance of the technological features and the way that they are to be used.
- ◇ **Physiological Factors:** Of the most obvious physiological factors (gender, health, and environmental conditions). The environmental conditions are the factors that would have to be taken into consideration the most. This could be due to many reasons, such as: weather, location of picture/movie taking (for example if you were in a crowded room), etc.

◆ Context Analysis

- ◇ **Description of the Orienting Context:**
 1. The goal the learner has is to gain knowledge of the parts of the *Mavica 2.1* digital camera. Another goal the learner has is to be able to take digital images with the *Mavica 2.1* digital camera.
 2. The learners’ perceived use of this knowledge is that they will see this course providing them with useful information because it will assist them in a) earning a good grade in courses that require digital photography and b) providing them with useful information for personal picture taking entertainment.
- ◇ **Description of Instructional Environment:**
 1. **Lighting:** The lighting of the room is easily accessible and will be controlled by turning the lights about the projector screen off, while dimming all other lights.

Analyze Learners and Context

2. **Noise:** Noise is an uncontrolled consideration. There are two doors that will be closed while instruction is being given. However, other noise may come from classrooms located on either side, from cell phones inside the room, or from outside the classroom.
3. **Temperature:** The temperature of the classroom cannot be controlled. It is controlled by a main unit that is located elsewhere, outside of the classroom.
4. **Equipment:** All equipment, including projectors, computers, and the computer lab, are furnished by the university.
5. **Transportation:** Each student and the instructor is responsible for his/ her own transportation to the instruction session(s).

◆ **Topic Analysis**


Topic: Parts of the Sony FD 200 Mavica 2.1 MegaPixels Digital Camera

- ◇ **Selector Switch:** Located on back of camera at top right-hand side of camera, above the screen. This switch allows you to choose between 3 “modes” the camera offers.
 - 3 Modes: Play- Allows you to preview photos taken or watch a movie.
 - Still- Allows you to take pictures
 - Movie- Allows you to film a movie
- ◇ **Lens Cap:** Placed on front of camera lens, in order to protect lens from scratches, etc.
- ◇ **Power Button:** Located in the center, directly under display screen, on back of camera. This turns camera on and off.
- ◇ **Menu Button:** Located on back of camera, under screen at bottom right-hand corner. This button is used to make all of the selections when choosing from any of the different menu options on the display screen. (For example: adjust digital zoom, sharpness, flash level, delete pictures, save)
- ◇ **Display Screen:** Located on back of camera, this screen is where pictures can be previewed or reviewed; options for pictures can be selected, and movies that have been recorded with the camera can be played back.
- ◇ **Shutter Button:** Silver button located at the top right-hand side of the camera (when directing the lens cap away from your body). When pressing and holding this button down pictures will be taken and movies will be recorded.
- ◇ **3 ½” Floppy Disk:** External storage medium used to store pictures and/or movies that are taken with the camera. These disks are placed into the camera in a disk slot, located on the right hand side of the camera.
- ◇ **Disk Eject Button:** Located at the right-hand side of the camera (when directing the lens cap away from your body). When pressed down and slid over, this ejects the 3 ½” floppy disk.

Task Analysis

- ◇ **Volume +/- Button:** Located to the bottom left-hand side of the display screen, these buttons adjust the volume of a movie, while viewing during playback.
- ◇ **LCD On/ Off Button:** Located directly above the volume +/- button on the left-hand side of the display screen, this button helps to enhance pictures by automatically focusing them for you.

Procedure: How to Take Digital Images

1. Move **Selector Switch** (located on the top right hand side above the “Still” mode).
2. Holding the camera with the lens pointing away from you, insert a **3 ½” floppy disk** into the right-hand side of the digital camera.
3. Remove **Lens Cap** by “squeezing in” on the two tabs, one on each side of the lens cap, & “pulling lens cap away” from the body of the camera.
4. Turn digital camera ON by using the **Power Button** (located in the lower left-hand side, below the screen).
5. From “Menu Screen,” use the **Menu Button** (located on the lower right-hand side under the screen) to select “Camera.”
6. Using the **Menu Button**, select from the different options available; such as: Digital Zoom, Sharpness, Flash Level, & Exposure. (Use **Menu Button** while in each option to select Preferences.)
7. Use **Menu Button** to move to the  button.
8. *After* completing Step #7; Aim camera at desired object, person, etc. that you want to take a picture of.
9. Press the **Shutter Button** (silver button located on the top right hand side of the camera) to take a picture.
10. **NOTE:** Once a picture is taken, notice the Top Right hand corner of the display screen on the back of the camera. This “**Count Display**” tells you how many pictures have been taken and that are stored on the floppy disk.

Task Analysis

11. Continue to repeat Step #5 through Step #8, until you have taken all of the pictures that you wish to take.

Procedure: How to Preview Digital Images Taken

1. Switch the camera to “Play” mode, using the **Selector Switch** located at the *Top Right* hand side of the screen.
2. Use the **Menu Button** to navigate through screen options to perform actions such as: *Delete, Save, Enhance, Resize, & Copy* your pictures here.
3. When you are satisfied and completed with your work; turn camera OFF by using the **Power Button**.
4. Next, eject the 3 ½” floppy disk by pressing with an *inwards motion* at the top of the **Disk Eject Button**, then with a *downwards motion*.
5. Replace the **Lens Cap** onto the lens of the camera by “squeezing in” on the tabs and “pressing the **Lens Cap** forwards towards” the camera. Then, release the tabs, in order to lock the **Lens Cap** into place.

Procedure: How to Film Movies

1. Move the **Selector Switch** (if the camera is pointed away from you, it is located at the top right-hand side of the display screen) to the “Movie” position.
2. Insert a 3 ½” **floppy disk** into the digital camera into the right-hand side of the camera.
3. Remove **Lens Cap** by “squeezing in” on tabs & “pulling lens cap away” from the body of the camera.
4. Turn digital camera ON by using the **Power Button** (located on the lower left-hand side, under the screen).
5. Aim camera at object(s) you want to film, and press **SHUTTER** button (located at the top left-hand side of the camera) all the way down.

* NOTE: “**RECORDING**” appears on the screen & images and sound are recorded*

Task Analysis

6. If you wish to *Adjust the Brightness* of what you are recording:
 - Use the *LCD BRIGHT* item in the *Menu Settings*. This is found by simply using the **Menu Button** and then looking under the *Camera Settings* on the **Display Screen**.

Procedure: How to Playback Movies

1. Move the **Selector Switch** to the “Play” position.
2. Press **▲** on the **Menu Button**, in order to display the “Menu Bar Options” on the Display Screen.
3. Select the movie you want to view by using the **Menu Button**. (The movies will display on the screen as you scroll across them.)
4. To PLAY the movie, PRESS **▲** on the **Menu Button**, then press the center **●**.
 - * NOTE: If you want to PAUSE during playback, you can press any of these symbols: **▲/▶/▼/◀** on the **Menu Button**, and then press the CENTER **●** and the movie will PAUSE.
5. You can use the **Menu Button** keys to navigate through various menu options, while watching a movie.

Adjusting the volume During Playback:

1. Press the **Vol +/-** (located in the lower left-hand corner) to adjust the volume while watching a movie during playback.

Upon completion of Filming Movie:

1. Turn camera OFF by using the **Power Button**.
2. Next, Eject the 3 ½” floppy disk by pressing with an **inwards motion** at the top of the **Disk Eject Button**, then with a **downwards** motion.
3. Replace the **Lens Cap** onto the lens of the camera by “squeezing in” on the tabs and “pressing the **Lens Cap** forwards towards” the camera. Then, release the tabs, in order to lock the Lens Cap into place.

Instructional Objectives/ Classifications

1. TLW correctly identify the parts of the Sony digital camera and their function.
- Procedure: Recall
2. Using the Sony digital camera and instructions, TLW correctly capture digital images for use in print and electronic documents.
- Procedure: Application

Instructional Sequence

- ◇ This module is an example of Posner and Strike's **Learning-Related sequencing** strategy because it is a **procedural analysis**. This module represents this type strategy because a) the parts of the camera and their use must be known prior to demonstrating a more complicated task, b) before a picture can be taken the most familiar information should be reviewed, and c) then progression should be made to the lesser known information.
- ◇ This module is an example of **Temporal/ World-Related sequencing** because the instructions are written in a specific, descriptive order. This order describes the steps that are to be taken in sequence, in order to successfully to complete the task.

Objective 1

TLW correctly identify the parts of the Sony digital camera and their function. (Procedure: Recall)

Initial Presentation. Present digital image of camera with twenty-one numbered with lines extending to different parts of the camera. Use computer image of camera and display each part, one at a time, filling in each blank with the name of the part, on a screen at the front of the classroom. After displaying the name of the first camera part, leave it on the screen while moving to the next numbered camera part.

Generative Strategy. After showing all twenty-one camera parts, review these parts by showing seven camera parts on the screen at a time. Show seven parts on the screen, and then ask the learner to recall only the seven parts that were viewed. After mastery of the seven parts viewed, move to the next seven camera parts and repeat the process. Continue these processes until all twenty-one camera parts are able to be identified correctly.

Objective 2

Using the Sony digital camera and instructions, TLW correctly capture digital images for use in print and electronic documents. (Procedure: Application)

Initial Presentation. Demonstrate holding, aiming, and selecting the appropriate buttons on the Sony digital camera, in order to capture a digital image. Emphasize steadiness of hands while holding and aiming the digital camera, as well as proper proportion of target in camera view. Demonstrate which buttons are appropriate to use under certain conditions (close-ups, light/darkness, etc.). Then, show how to film and play movies.

Generative Strategy. First, have the learner find an object they would like to take a picture of. Second, while being monitored, each learner practices by holding, aiming, and working with the buttons on the camera to get the object in the position they want it. Next, the learner actually takes a digital image photograph using the shutter button.

Pre-instructional Strategy

- ◇ The pre-instructional strategy of this module that will be used to introduce the learner to the instructional materials is an **overview strategy**.
- ◇ The **overview strategy** is appropriate for this module because it will provide both a summary of the parts of the digital camera, and a step-by-step guide for digital image taking and film making with the *Mavica 2.1* digital camera. This step-by-step guide will help the learner overcome problems he/she might face while using the digital camera.

Formative Evaluation

The students that this module is prepared for are college-aged students. The instructional objectives that are stated for this module are appropriate because the level of learning requires prior knowledge of digital camera operation, as well as the ability to acquire new ideas quickly. At the same time, a weakness exists if there are students who do not have prior digital camera operation knowledge. While these students might struggle with the operation of the digital camera, they will probably struggle with learning the parts of the digital camera as well.

With the knowledge the learners obtain from definitions, diagrams, and step-by-step procedures as they progress through the module, they will be able to successfully identify the parts of the Sony digital camera. The learners will also be able to correctly capture digital images for use in print and electronic documents from this extensive studying module. There are no weaknesses apparent in this learners' use of knowledge or ability to perform because of the thoroughness and detail that is presented in the module.

The instruction of the module of how to correctly identify the parts of the Sony digital camera and these parts' function, and how to correctly capture digital images for use in print and electronic documents requires one college semester or approximately 21 weeks. This time frame is appropriate because it is not spent lecturing for 21 straight weeks. During this time period students are practicing both inside the classroom and outside of the classroom. Lectures are to be divided, so as not to overwhelm the students with too much information at once.

Activities are also practiced during both classroom time and to be given as homework assignments. No activities are to be given before the information is previously covered in the classroom. The learners are to bring all homework assignments to class on the due dates, they are to be reviewed, and any questions are to be answered before moving on to the next stage. This is done in order to keep all learners in the class at the same pace.

All materials for the class are available to each student during class time, making sure to have extra cameras, in case of any problems that could arise. (Such as battery failure, etc.) Outside of the classroom, the cameras are to be kept at the computer laboratory. While kept here, the students can check out only one camera at a time, and it must be returned before the next class meets.

Since the learners are college-aged students, they enjoyed having the freedom to study when they wanted to (or when they did not want to). The students also enjoyed the activities because by practicing with the cameras in class it gave them hands-on experience, which helped with the learning-curve of the camera's

Formative Evaluation

operations. The learners found the evaluation methods to be fair and non-biased.

Tests were broken down into units of approximately four to five weeks worth of material that had been covered in the classroom. The tests in the module included: identification/ labeling questions, using a diagram, to test learners of a camera's parts and the teacher used checklists to grade learners' performance on whether or not they followed the correct steps that were taught to them on how to take digital photos for use in print and electronic documents. This assignment was graded on the skills that were taught in module and in the classroom over the entire semester. Every type of these testing methods used satisfactorily assessed the instructional objectives.

Some revisions in this module may be necessary. For example, if there are learners who need remedial help before starting the unit, then they need to be identified. Another revision that may have to be made is for those learners who learn faster than others. The decision that pertains for these learners will be whether or not they are allowed to skip ahead to the next step if they already know how to perform the step being performed. A progress report is another revision that may need to be included in the module. This report would help the learner (and the instructor) know how they are performing as they progress through the module.

Effectiveness would be a very strong measure of evaluation for this module. The reason being is because tests can be given to learners before they start the module. Then, tests could be given again after completion of the module, in order to be graded for performance. A measurement of effectiveness could be taken from these comparative scores.

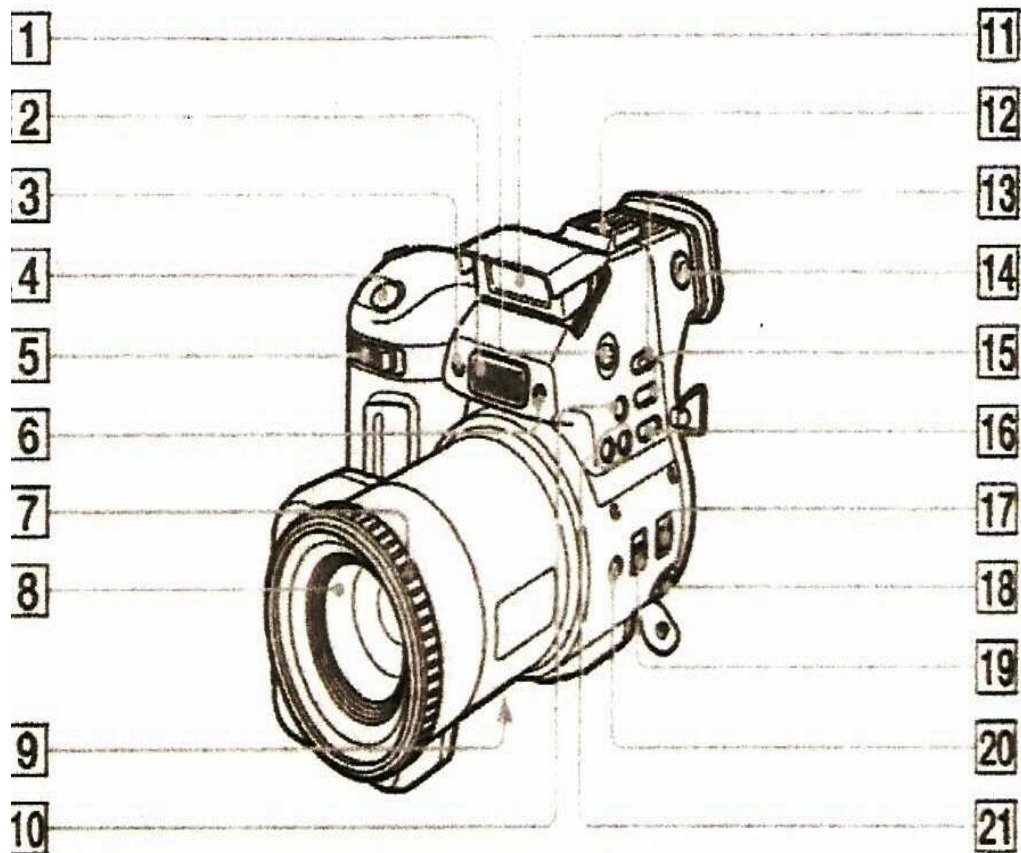
Standards, or norms, could also be set by gathering enough data from learners' testing data. These norms could be used to observe learners in higher education, to check for achievement rates. This group would be the control group in the experiment.

An achievement test is where this data is collected. So by, gathering the norms from observations, the person(s) who are responsible for analyzing these test scores would be using this module as an aid/ tool.

As long as the university/ college have the cameras that are needed, the main costs that are going to be associated with these evaluations will be time. It will take both a large amount of the learners' time reviewing this module, and a large amount of the instructors' time helping students work on their assignments. However, if the cameras are not there, then the technology fee would be the highest costs.

Summative Evaluation

1. Please correctly identify and label the parts of the camera (pictured below) from the list of the parts that are listed directly below the picture.



CAMERA PARTS:

Lens	Focus Auto/ Manual	AUDIO/VIDEO OUT jack
Shutter button	Program buttons	Open Button
Accessory shoe	Program button	Focus ring
Steady shot ON/OFF	Self-timer lamp	Photocell window for flash
Built-in microphone	DC IN cover/DC IN jack	Macro button
Zoom lever	SPOT METER button	Finder adjustment dial
WHITE BALANCE button	Flash	One-push white balance

Summative Evaluation

2. Using what you have been taught this semester and the lessons that you have learned from the module, take this knowledge and a digital camera and create a portfolio of digital images on the topic of your choice. This portfolio will be graded on the main issues that we have discussed in class, such as: image quality, video recording (if you choose to record a video), color, etc. The portfolio should be placed in a 3-ring binder, as well on CD-Rom, for grading purposes.