

## **Research Proposal for Ph.D Admission @ KARE**

### **Title: Development and Evaluation of Film-Based Training Materials for Allied Ophthalmic Personnel: An Applied Study in Ophthalmic Education**

**M.Abdul Aziz Hakkim (App. No: 2025011738)**

*E-Learning Designer, Aurosiksha, Aravind Eye Care System*

#### **Introduction**

The field of ophthalmic education relies heavily on accurate observation and practical skill development. Allied Ophthalmic Personnel (AOPs) play a vital role in supporting ophthalmologists in diagnostic and clinical procedures. Traditional training for AOPs primarily depends on classroom instruction, textbooks, and limited live demonstrations, which may not sufficiently convey complex visual procedures.

With advancements in educational technology and multimedia learning, film-based instructional materials have emerged as powerful tools that combine visual, auditory, and narrative elements to enhance comprehension and retention. The use of film in medical and paramedical education can improve learners' ability to visualize ophthalmic techniques, understand equipment handling, and develop procedural accuracy.

However, despite the growing potential of audiovisual pedagogy, systematic research on the **development and evaluation of film-based training materials** specifically for AOPs remains limited. This research seeks to fill that gap by designing, developing, and evaluating a set of film-based instructional resources to improve ophthalmic learning outcomes.

#### **Problem Statement**

Existing ophthalmic training methods for AOPs often lack visually standardized and engaging instructional materials. As a result, trainees may face difficulties in grasping practical procedures and in recalling sequential tasks. The limited use of visual pedagogy in ophthalmic education highlights a gap between theory and practice.

Film-based training can serve as an effective medium to bridge this gap by providing repeatable, visual demonstrations of ophthalmic practices. However, there is insufficient empirical evidence on how such materials can be designed, implemented, and evaluated in the context of AOP education.

Therefore, this study aims to **develop and evaluate film-based training materials** tailored for Allied Ophthalmic Personnel to enhance both theoretical understanding and practical skill development.

#### **Objectives of the Study**

##### **General Objective:**

To develop and evaluate film-based training materials to enhance the learning effectiveness of Allied Ophthalmic Personnel in ophthalmic education.

### **Specific Objectives:**

1. To identify key ophthalmic procedures and learning areas suitable for film-based instruction.
2. To design and develop high-quality instructional films as training tools for AOPs.
3. To implement the developed film-based materials among AOP trainees in a controlled learning environment.
4. To evaluate the effectiveness of the film-based training modules in improving knowledge retention and practical competency.
5. To compare the learning outcomes of film-based instruction with traditional teaching methods.

### **Research Questions**

1. What ophthalmic topics are most suitable for film-based training for AOPs?
2. How can film production techniques be effectively utilized to create instructional materials for ophthalmic education?
3. What is the impact of film-based training on the knowledge and practical performance of AOP trainees?
4. How do trainees perceive the effectiveness and engagement of film-based learning compared to conventional methods?

### **Significance of the Study**

This study will contribute to both **film studies** and **medical education** by integrating cinematic techniques into pedagogical practice. The outcomes will:

- Provide an innovative framework for developing **visual learning materials** in ophthalmology.
- Offer empirical evidence supporting the effectiveness of **film-based pedagogy** in paramedical training.
- Enhance the quality of ophthalmic education through **standardized audiovisual modules**.
- Serve as a reference for other medical training programs seeking to adopt multimedia-based instruction.

### **Scope and Delimitation**

The study will focus on the development of **film-based training modules** specifically for **Allied Ophthalmic Personnel**. The selected topics will be limited to

fundamental ophthalmic procedures such as visual acuity testing, slit-lamp examination, refraction techniques, and basic eye care protocols.

The research will be conducted within a selected ophthalmic institution offering AOP training, and participants will include trainees and faculty members directly involved in the educational process.

## **7. Research Methodology**

### **Research Design**

- This study will employ an **applied research design** with a **mixed-methods approach**—combining quantitative and qualitative techniques to develop and evaluate the film-based training materials.

### **Phases of the Study**

#### **1. Needs Assessment:**

- Identify ophthalmic procedures and training gaps through interviews with faculty and observation of existing teaching methods.
- Review existing learning materials and determine suitable topics for film-based instruction.

#### **2. Development Phase:**

- Scriptwriting, storyboarding, and filming of ophthalmic procedures using professional audiovisual techniques.
- Post-production editing and integration of narration, graphics, and subtitles to enhance learning clarity.

#### **3. Implementation Phase:**

- Introduce the developed films in selected AOP training sessions.
- Divide participants into two groups: **control group** (traditional method) and **experimental group** (film-based learning).

#### **4. Evaluation Phase:**

- Conduct pre-tests and post-tests to measure knowledge improvement.
- Assess practical skills through faculty evaluation and observation checklists.
- Collect feedback using structured questionnaires and focus group discussions to assess learner perception.

## **Data Analysis**

Quantitative data will be analyzed using statistical methods such as mean, standard deviation, and t-tests to compare pre- and post-intervention results. Qualitative data from interviews and feedback will be analyzed thematically to identify patterns in learner experiences.

## **8. Expected Outcomes**

- A set of **professionally developed educational films** for ophthalmic training.
- Empirical data demonstrating the **effectiveness of film-based learning** in improving AOP knowledge and skills.
- A **framework for integrating film pedagogy** into ophthalmic education curricula.
- Recommendations for the development of future multimedia training materials in medical education.

## **9. References (Indicative)**

- Clark, R. C., & Mayer, R. E. (2016). *E-Learning and the Science of Instruction*. Wiley.
- Fleming, N. D., & Mills, C. (1992). *Not Another Inventory, Rather a Catalyst for Reflection*. To Improve the Academy.
- Mayer, R. E. (2020). *Multimedia Learning (3rd ed.)*. Cambridge University Press.
- Bates, A. W. (2019). *Teaching in a Digital Age*. BC campus Open Textbook.
- Choules, A. P. (2007). *The Use of E-Learning in Medical Education: A Review of the Current Situation*. Postgraduate Medical Journal.