

Evaluating the Effectiveness of Teaching Software Design Patterns by Developing a PHP Framework for the Learning Environment

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1. Introduction

The introduction of frameworks (**Fig 1**) has made re-use of code easier. These frameworks are built upon common design patterns to assist with repetitive tasks, allowing applications to be built more rapidly, increasing productivity in software development.



Fig 1: PHP
Frameworks [1]

2. Aims and Objectives

Aim:

Evaluate the effectiveness of using a PHP Framework to teach Software Design Patterns in the Learning environment.

Objectives:

1. Analyse the most common PHP frameworks used today and evaluate the use of design patterns.
2. Evaluate an approach to teaching a PHP framework and design patterns by designing and building a PHP application that can be used in teaching.
3. Conduct a study using a focus group and a questionnaire to analyse the results to determine the effectiveness of the framework and teaching approach.

3. Research Methodology

Based upon Saunders et al [2] research 'onion' the following approach will be taken:

- Mix of Phenomenology and Positivism Philosophy
- Inductive Research Approach.
- Action and Survey based Research
- Focus Groups
- Questionnaires

4. Proposed Framework Features

- PHP
- Model View Controller Pattern
- Front Controller Pattern
- Application Controller Pattern
- Strategy Pattern
- Object Relational Mapping
- PHP Data Objects (PDO)

References:

- [1] "PHP Frameworks - Konsultan IT Surabaya - Dutacipta Konsultama." [Online]. Available: <http://dckconsulting.com/news-detail.php?id=13>.
- [2] M. Saunders, P. Lewis, and A. Thornhill, *Research Methods for Business Students*, Fifth. Harlow: Pearson Education Limited, 2008.