# Acknowledgements

# Abstract

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# Chapter One: Introduction

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# Chapter Two: Literature Review



## Introduction to Coursework

### Historical Evolution of Coursework

Around 50 years ago, Michael Bassey introduced formal assignments, also known as courseworks, to pedagogy after completing his teacher training programme. This programme used a combination of courseworks and examinations for assessments, and 98% of students were satisfied with this hybrid approach. Bassey also favoured courseworks after observing how they helped students to express themselves practically, taught them, tested their concepts, and how the longer timeframe contributed to lower stress levels and enhanced performance (Bassey, 1971). Bassey’s paper was published by the New Zealand University Students Association; however, the university did not apply the twofold division approach suggested in the paper until the late 1970s (Richardson, 2015).

In 1977, Derek Rowntree and Professor John Heywood narrated in their books an idea about a new approach for assessments, complementing Bassey’s research (Richardson, 2015). Rowntree’s primary intent was to introduce effective alternatives to unseen examinations that discover the student’s strengths, weaknesses, needs, and interests, as opposed to assessing the course content via examinations (Stanton, 1979). He questioned the purpose of unseen examinations and the need to understand students. In his book, he focused on describing how students are often boxed in and evaluated based on the accomplishment of a fixed outcome. Quoting a famous Roman saying, he explained that when two people perform a similar action, the outcome might be the same, but their experience, motivation, and intention will differ (Millman and Mitchell, 1980). Reflecting on his views, he introduced open-book examinations, where students can refer to their notes, and pre-released examinations, where the questions are released beforehand (Richardson, 2015). While Heywood discussed the issues in classical approaches to testing and grading students, especially focusing on essay examinations which were a common practice in England (Millman, 1978).

In 1996, the Assessment Strategies in Scottish Higher Education reported that the usage of courseworks across the UK started to spread. In 1985, courseworks contributed to 34% of the total marks. However, by 1994, courseworks accounted for 79% of the overall course weightage (Richardson, 2015). Moreover, many universities had begun to award degrees based on end-of-module courseworks instead of unseen examinations. Later in 2002, Bridges and his colleagues opposed the usage of courseworks along with examinations, claiming that the twofold division was unsatisfactory and oversimplified. They argued that having only two forms of assessment is restricting the student’s ability to demonstrate achievements and hence, heterogeneity in assessments should be introduced to the narrow classification system (Bridges et al., 2002; French, Dickerson and Mulder, 2023).

### Definition and Significance of Coursework in Education

According to Richardson (2015) and Peltier et al. (2021), courseworks, as opposed to examinations, are modes of assessments undertaken by students within a longer timeframe, either individually or collaboratively. These modes include, but are not limited to, assignments, dissertations, reports, software, course materials, seminars, and alternative class assessments. Courseworks boast time management and teamwork skills, fostering a sense of collective responsibility for the final result, whether positive or negative. Students learn to manage small projects to meet deadlines and interact with industry experts for fulfilling some courseworks (Ryazanova, Semak and Kazakova, 2021).

Since the introduction of courseworks in education, several researchers have conducted studies to compare the impact of courseworks on overall academic performance. In the 1950s, 39% of graduates in the UK were issued first-class degrees. This percentage increased to 49% in 1990 and rose further to 68% in 2013. Additionally, while the most common degree conferred upon graduates in 1979 was the lower second-class honour, by 1990, the most common degree earned by graduates had become the upper second-class honour (Richardson, 2015).

These statistics were substantiated by justifications indicating the transition from unseen examinations to courseworks. The majority of research studies stated that assessment methods outside of examinations, such as courseworks, case studies, seen examinations, and projects, led to higher marks attained by students across all fields when used alone or when blended with examinations. They further revealed that the number of courseworks in a course was directly proportional to the percentage achieved (Richardson, 2015; French, Dickerson and Mulder, 2023; Tuah and Naing, 2021). York et al. explained that students tend to outperform themselves in courseworks because they can collaboratively gather information over a longer period. In contrast, unseen examinations pressure them to cram information and rely on memory recall within a restricted time limit, which is unlikely to reflect professional practice. Undoubtedly, both examinations and courseworks promote different cognitive abilities (Yorke, Bridges and Woolf, 2000).

Furthermore, the benefits achieved from coursework are long-lived as student engagement is maintained for an extended period. The constant feedback received throughout the coursework encourages student engagement and opens scope for improvement, unlike end-of-module examinations (Thomlinson, Challis and Robinson, 2010; French, Dickerson and Mulder, 2023). The transfer of knowledge from coursework to work life is greater compared to examinations. Additionally, university students who self-finance their studies are often unwilling to pay tuition fees when the academic work does not align with professional life (Gibbs and Lucas, 1997). Through courseworks, students can demonstrate their abilities on a broader scale and develop more skills during the coursework. In a Norwegian study, it was reported that 70% of the students applied their coursework knowledge in their professional lives after graduating (Sin, Soares and Tavares, 2021). Searching and selecting information from a variety of sources and applying them to solve courseworks enhances strategic thinking and problem-solving skills. Moreover, courseworks are suitable for students returning to education after years of working in industries, away from traditional examinations (Richardson, 2015).

However, since courseworks are not invigilated, this opens up doors to collusion and plagiarism. Anti-plagiarism systems can scan courseworks to detect plagiarism but are unable to catch contract cheating where material is purchased from expert academic writers (Tuah and Naing, 2021). Additionally, many examinations that are held online also become a target of such malpractices (Richardson, 2015; Tuah and Naing, 2021).

## Integration of Technology with Pedagogy

### Exploring Industrial Revolutions across the Ages

As mentioned by Richardson, academic bodies had started to shift to online examinations for essay-type questions, backed with uncountable favour from older students (Richardson, 2015). The usage of technology for undertaking exams was not a surprise as many researchers have been predicting the permanent effect of technology on education since 1966. In fact, in 1980, Seymour Papert stated that computers will be an integral part of every child’s life in the future. His claims were supported and echoed by multiple other researchers who put forward the assumption that computers will be the core of the educational process over the next few decades (Selwyn, 2020).

### The Immergence of Education 4.0

### Advantages of Digital Learning Environments

### Challenges and Considerations of Digital Learning Environments

## Challenges of Meeting Coursework Deadlines

### Analysis of Coursework Submission Patterns (Late, on-time and early submissions)

### Psychological Insights into Meeting Deadlines

#### Understanding Procrastination (overconfidence)

#### Additional Factors Affecting Deadline Adherence (time and task management)

### Strategies for Effective Deadline Management

## Digital Solutions for Coursework Management

### Overview of Existing Coursework Management Systems

### Features of Coursework Management Systems

## Coursework Deadline Visualization and Management

### Importance of Visualizing Deadlines for Students

### Strategies for Tracking Progress and Submission

#### Methods (and Tools) for Tracking Coursework Submissions

<https://www.ijiet.org/vol12/1770-E2007.pdf> -> journals

#### Role of Notification Systems for Deadline Management

## Motivating Students Through Gamification

### What is Gamification?

### Advantages of Using Gamification to Motivate Students

### Implementing Gamification in Coursework Management

### Examples of Gamified Systems for Coursework Management

## Usability in Educational Technology

### Importance of Usability

### Enhancing User Experience for Educators and Students

## Summary and Critical Analysis

* Bassey identified the satisfaction and benefits of courseworks during the teacher programme. He published a paper which as supported by other researcher in the 1970s. The usage of courseworks increased and showed a positive impact on academic performance. Courseworks were defined by experts as other forms of examinations that allow the demonstration of a variety of skills, unlike unseen examinations where students are captivated inside a box. However, plagiarism is an issue

## Recommendations

# Chapter Three: Requirements Analysis



## System Specifications

### MoSCoW

### Functional Requirements

### Non-Functional Requirements

## Evaluation



# Chapter Four: Methodology

## Software Development Methodology

## Selection of Methodology and Reasoning

What is Lean Development?

What is Solo Scrumban?

Personal software process: https://en.m.wikipedia.org/wiki/Personal\_software\_process

https://core.ac.uk/download/pdf/51292464.pdf

https://publications.lib.chalmers.se/records/fulltext/147143.pdf

https://assets.researchsquare.com/files/rs-1985368/v1/c6d6bc3a-ce93-4f0d-b912-acf4d66c212a.pdf?c=1677700774

https://www.softed.com/news/scrum-solo-considered-harmful/

<https://dania.hashnode.dev/how-to-use-agile-method-for-solo-projects>

https://samples.jbpub.com/9780763785345/85345\_ch04\_tsui.pdf

## Project Phase Details

### Phase 1

### Phase 2

### Phase 3

### Phase 4

### Phase 5

## Development Tools

Node.js, js, react, sql (mongodb if I get time to learn)

# Chapter Five: Professional, Legal, Ethical and Social Issues



## Professional Issues

## Legal Issues

## Ethical Issues

## Social Issues

# Chapter Six: Project Plan



## Gantt Chart

## Risk Management

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