

UNIVERSITY OF
WATERLOO



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PROJECT MANAGEMENT PLAN

Group 1: English Grade 1, Mathematics Grade 1

**Teachers Without Frontiers
Sourcing of Online Teaching Materials for Teachers in Pakistan**

**Course Instructor: Dr. Peter Carr
Date: 31st May 2021**

VERSION CONTROL

#Version	Revision Date	Prepared by	Approved by	Approval Date	Reason
1.0	31 st May, 2021	All Team Members			Initial Project Plan

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1. INTRODUCTION

Teachers without Frontiers (TWG) is an organization where teachers are trying to support students to minimize disruption in their education. The URL material to the resources are organized by year, subject, and topic and are matched with Pakistan's national curriculum, making it simple to discover the needed information each day. The Project Management Plan proposed by Team 1 in BE 605 Project Management grad course at the University of Waterloo is described in this document. The focus area will be on Grade 1 English and Mathematics courses.

Section 1 contains a brief introduction about the project plan giving a rough idea about its purpose. Section 2 comprises the project scope where the goals have been set to be achieved by the end of the project. Section 3 has project milestones and deliverables that will be accomplished to meet the deadlines. The Project Schedule and Management Plan is Section 4 comprises the schedule for each deliverable and the workflow pattern that will be followed within the team to execute each task. A Gantt chart is also provided with further details regarding the project schedule and timeline. Section 5, the Communication Management Plan, includes details about communication within the team and external stakeholders. It also incorporates the flow chart, which describes the communication flow that will be followed for information and message distribution. In section 6, the Change Management Plan will help the team consider the suggested changes and make good decisions on whether to incorporate them in the project plan. Appendix A and B includes a change management log and a change management form which must be followed if the project must be amended in any way.

Further, section 7 deals with the Quality Management plan, which ensures delivery of the project within the scheduled timelines by conducting regular scrutiny at various levels in the project using techniques like QC matrix (Appendix C), CTQ tree. Section 8 is a risk management plan which identifies the risks associated with the project and discusses strategies to handle them. A risk register or risk log is maintained to log the risks that arise during the project. The human resource management plan in section 9 provides the profiles of the project team members, describes the various roles and responsibilities that the team members will perform. Section 10 of the project plan, with Sponsor and Professor Acceptance, brings the project plan to an end. After reading the entire plan, the professor and client will formally endorse it, verifying that they agree with what is being done and contribute where appropriate.

2. PROJECT SCOPE

2.1. Scope Definition:

The scope of the project includes all that we will be achieving by the end of the project. It is also our reference point to consider what we will be doing in detail in our project. It ensures that suggested project adjustments, activities, and deliverables are in line with the project's key objectives.

2.2. In Scope:

1. Delivering the resource material only for grade 1 English and Mathematics, which will be URL's.
2. The resource material will be in multiple media forms like links, documents, videos, and games.
3. Uploading the content to the new resource library.
4. Providing resources from trusted sources that are free and meets the student learning outcomes (SLO's).
5. Referring to the new Pakistan national curriculum to update changes from the old library to the new library.

2.3. Out of Scope:

1. Providing learning resources that are irrelevant to grade 1 English and mathematics.
2. Creating new learning resources.
3. Developing the interface/website of the new resource library.
4. Modification of the curriculum.
5. Providing content in a language other than English.

2.4. Project Assumptions:

1. The latest Pakistani curriculum is provided.
2. Delivering the content specific to the units in English and mathematics of grade one
3. The stakeholders will guide for any further changes required after the project plan proposal.

2.5. Project Constraints:

1. Limited availability from group members due to the pandemic and variation in time zones.
2. The learning resources are available for free.
3. The project should be submitted by July 27th, 2021.

2.6. Objectives:

“Teachers without Frontiers” TWF project group 1 aims at providing support in the form of digital learning resources for grade 1 English and Mathematics to minimize the disruption in education due to the ongoing pandemic and other constraints. Our focus is to support children's education through e-learning by giving the teachers and parents access to quality educational resources. We believe that young minds are the building blocks of society, so education plays a significant role in sufficing it. This makes us excited to work on this project and is the driving force to make this a successful one. Thus, Considering the aim and goal of the TWF, we have come up with the following objectives:

1. Provide free online teaching materials according to the new curriculum provided by the National curriculum of Pakistan and update the contents of the new education resource library.
2. Ensure delivery of high-quality and reliable content that will empower teachers, parents, and students with up-to-date study material.
3. Provide URLs with a user-friendly interface that can be accessed on any online platform and mobile device.
4. Support critical thinking and social change in societies through modern teaching practices.
5. Additionally, supply creative and fun learning websites to teachers and parents to sharpen up the growing and curious mindset of grade 1 children by engaging them in the physical DIY activities listed on the sites.

3. PROJECT MILESTONES

On daily basis, the project plan is scheduled, defining all assigned activities, and will be delivered based on the roles and the responsibilities of our project's groupmates. We launched our project meetings with an initial discussion on May 21, 2021 and had set our milestones and plans centered on the outcome of that meeting. The milestones are as follows:

01

Submission of Project Plan

Key activities :

- Building a robust team to carry out each of the responsibilities
- Creating most interactive channels for communication
- Understanding the requirements
- Discussion of the activities and milestones to achieve
- Producing a Draft for the project plan

Duration: 7 days - Monday 31st May

02

Completion of Unit 1 English – Grade 1: Reading and Thinking Skills

Key activities :

- Comprehending the TWF Grade 1 curriculum
- Discovering links that match the requirements of the Curriculum
- Finding attention-seeking and interactive videos in accordance with the topics
- Quality assurance checking by the quality management team
- Risk assessing by the risk management team
- Submission of the weekly status report

Duration: 7 days - Monday 7th June

03

Completion of Unit 1 Mathematics – Grade 1: Whole Numbers

Key activities :

- Comprehending the TWF Grade 1 curriculum
- Discovering links that match the requirements of the Curriculum
- Finding attention-seeking and interactive videos in accordance with the topics
- Quality assurance checking by the quality management team
- Risk assessing by the risk management team
- Submission of the weekly status report

Duration: 7 days – Monday 14th June

04

Completion of Unit 2 English & Mathematics – Grade 1: Writing Skills and Number Operations

Key activities :

- Comprehending the TWF Grade 1 curriculum
- Discovering links that match the requirements of the Curriculum
- Finding attention-seeking and interactive videos in accordance with the topics
- Quality assurance checking by the quality management team
- Risk assessing by the risk management team
- Submission of the weekly status report

Duration: 7 days – Monday 21th June

05

Completion of Unit 3 English – Grade 1: Oral Communication Skills

Key activities :

- Comprehending the TWF Grade 1 curriculum
- Discovering links that match the requirements of the Curriculum
- Finding attention-seeking and interactive videos in accordance with the topics
- Quality assurance checking by the quality management team
- Risk assessing by the risk management team
- Submission of the weekly status report

Duration: 7 days – Monday 28th June

06

Completion of Unit 3 Mathematics – Grade 1: Measurement of Length and Mass

Key activities :

- Comprehending the TWF Grade 1 curriculum
- Discovering links that match the requirements of the Curriculum
- Finding attention-seeking and interactive videos in accordance with the topics
- Quality assurance checking by the quality management team
- Risk assessing by the risk management team
- Submission of the weekly status report

Duration: 7 days – Monday 5th July

07

Completion of Unit 4 English and Mathematics – Grade 1: Formal and Lexical Aspects of Language & Money

Key activities :

- Comprehending the TWF Grade 1 curriculum
- Discovering links that match the requirements of the Curriculum
- Finding attention-seeking and interactive videos in accordance with the topics
- Quality assurance checking by the quality management team
- Risk assessing by the risk management team
- Submission of the weekly status report

Duration: 7 days – Monday 12th July

08

Completion of Unit 5 English and Mathematics – Grade 1: Appropriate Ethical and Social Development & Time and Date

Key activities :

- Comprehending the TWF Grade 1 curriculum
- Discovering links that match the requirements of the Curriculum
- Finding attention-seeking and interactive videos in accordance with the topics
- Quality assurance checking by the quality management team
- Risk assessing by the risk management team
- Submission of the weekly status report

Duration: 7 days – Monday 19th July

09

Completion of Unit 6 Mathematics – Grade 1: Geometry

Key activities :

- Comprehending the TWF Grade 1 curriculum
- Discovering links that match the requirements of the Curriculum
- Finding attention-seeking and interactive videos in accordance with the topics
- Quality assurance checking by the quality management team
- Risk assessing by the risk management team
- Submission of the weekly status report
- Review and submission of the final report

Duration: 7 days – Monday 26th July

10

Celebration

Duration: 1 day – Wednesday 28th July

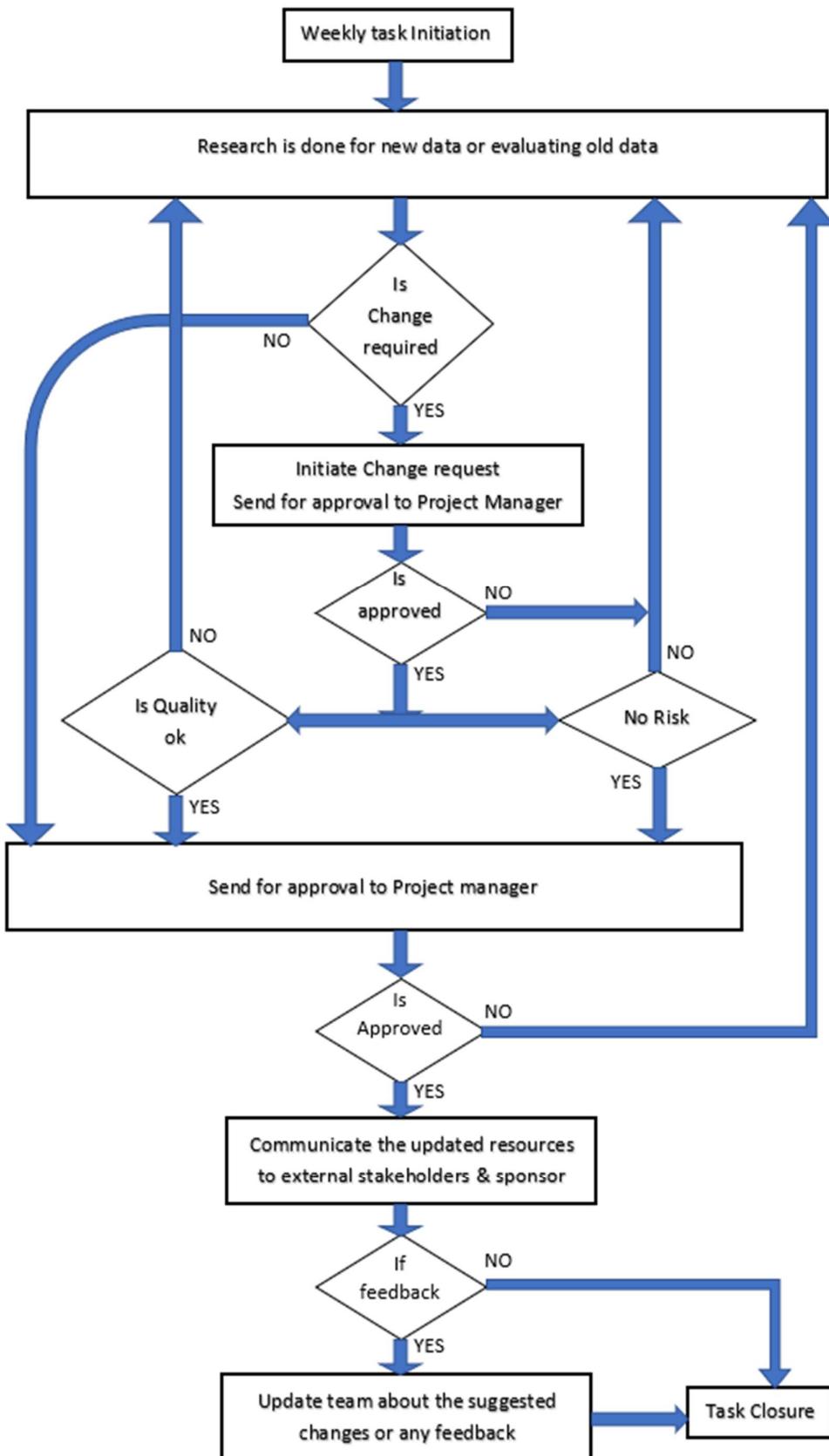


4. SCHEDULE AND MANAGEMENT PLAN

4.1. Management Plan Workflow:

This is the Project Management plan, a formal, approved document that defines how the project will be executed, monitored, and controlled by the group. This document describes the project group's approach to delivering the intended scope and fulfilling the project's objectives.

1. New task initiation.
2. Research is done for new resources as per the topics described in the task.
3. After finding the available resources and comparing them with the old data, a new change request is created if the data is new or else change request is not initiated.
4. If no change request is generated, then the old data is sent for approval to the "Project Manager" and further communicated to the external stakeholders and sponsors by "Communication managers".
5. If a change request is initiated after the Research phase, a CR is generated by the "Change Manager" and sent for approval to the "Project Manager".
6. If approved, its quality and risk are evaluated by the "Quality Manager" and "Risk Manager" respectively.
7. If data is found unfit or not up to the mark after the quality check or found unreliable and prone to risks after risk assessment, the data will be discarded, and a new research phase request will be initiated.
8. If research data is found 'OK' after quality and risk assessment, it is further sent for approval to the "Project Manager".
9. "Project Manager" refers to the feedback from each assessment and decides to approve it.
10. If not approved, again, the research phase is initiated for new data accumulation.
11. If approved, data is further communicated by "Communication Managers" to the external stakeholders and sponsors.
12. Any feedback or suggestion are noted by the "Communication Manager" and further communicated within the group immediately after the meeting with stakeholders and is discussed in detail in an upcoming group meeting.
13. Task closure.



4.2. Gantt Chart:

The detailed illustration of the Gantt Chart is also displayed below:

Project Name	Department	Project Duration in days	Project Start Date	Project Finish Date
Group – 1 Mathematics and English for Grade 1	Project Manager Communication Management Change Management Quality Management Risk Management Human Resource Management	67	Friday, May 21, 2021	Tuesday, July 27, 2021

Task ID	Activity	Responsible for the activity	Duration	Start Date	Finish Date
1	Introduction meeting to build the group	Collaboration of the group	1	Friday, May 21, 2021	Saturday, May 22, 2021
2	Assigning roles and responsibilities for the group members to prepare the project management plan	Project manager, along with the collaboration of the group	5	Wednesday, May 26, 2021	Monday, May 31, 2021
3	Submission of the Project Management Plan	Communication group along with Project Manager	1	Monday, May 31, 2021	Tuesday, June 1, 2021
4	Analyzing the feedback of the Professor and constructing a list of changes to be made.	Examination by the Change Management	1	Tuesday, June 1, 2021	Wednesday, June 2, 2021
5	Unit 1: Locating resources for English. Weekly meeting 1A: Updating the group regarding completion status.	Collaboration of the group	2	Wednesday, June 2, 2021	Friday, June 4, 2021
6	Unit 1: English Quality Assurance Check	Inspection by the Quality Management	1	Friday, June 4, 2021	Saturday, June 5, 2021
7	Unit 1: English Risk Assessment Weekly meeting 1B: Updating the group regarding completion status.	Evaluation by the Risk Management	1	Saturday, June 5, 2021	Sunday, June 6, 2021
8	Unit 1: Updating the approved English links to the library	Approval of Project manager along with the collaboration of the group	1	Sunday, June 6, 2021	Monday, June 7, 2021

9	Preparation of the weekly status report and submission to the professor	Communication group along with Project Manager	1	Monday, June 7, 2021	Tuesday, June 8, 2021
10	Analyzing the feedback of the Professor and constructing a list of changes to be made.	Examination by the Change Management	1	Tuesday, June 8, 2021	Wednesday, June 9, 2021
11	Unit 1: Locating resources for Mathematics Weekly meeting 2A: Updating the group regarding completion status.	Collaboration of the group	2	Wednesday, June 9, 2021	Friday, June 11, 2021
12	Unit 1: Mathematics Quality Assurance Check.	Inspection by the Quality Management	1	Friday, June 11, 2021	Saturday, June 12, 2021
13	Unit 1: Mathematics Risk Assessment Weekly meeting 2B: Updating the group regarding completion status.	Evaluation by the Risk Management	1	Saturday, June 12, 2021	Sunday, June 13, 2021
14	Unit 1: Updating the approved Mathematics links to the library	Approval of Project manager along with the collaboration of the group	1	Sunday, June 13, 2021	Monday, June 14, 2021
15	Preparation of the weekly status report and submission to the professor	Communication group along with Project Manager	1	Monday, June 14, 2021	Tuesday, June 15, 2021
16	Analyzing the feedback of the Professor and constructing a list of changes to be made.	Examination by the Change Management	1	Tuesday, June 15, 2021	Wednesday, June 16, 2021
17	Unit 2: Locating resources for English and Mathematics Weekly meeting 3A: Updating the group regarding completion status.	Collaboration of the group	2	Wednesday, June 16, 2021	Friday, June 18, 2021
18	Unit 2: Mathematics and English Quality Assurance Check	Inspection by the Quality Management	1	Friday, June 18, 2021	Saturday, June 19, 2021
19	Unit 2: Mathematics and English Risk Assessment Weekly meeting 3B: Updating the group regarding completion status.	Evaluation by the Risk Management	1	Saturday, June 19, 2021	Sunday, June 20, 2021

20	Unit 2: Updating the approved English and Mathematics links to the library	Approval of Project manager along with the collaboration of the group	1	Sunday, June 20, 2021	Monday, June 21, 2021
21	Preparation of the weekly status report and submission to the professor	Communication group along with Project Manager	1	Monday, June 21, 2021	Tuesday, June 22, 2021
22	Analyzing the feedback of the Professor and constructing a list of changes to be made.	Examination by the Change Management	1	Tuesday, June 22, 2021	Wednesday, June 23, 2021
23	Unit 3: Locating resources for English. Weekly meeting 4A: Updating the group regarding completion status.	Collaboration of the group	2	Wednesday, June 23, 2021	Friday, June 25, 2021
24	Unit 3: English Quality Assurance Check	Inspection by the Quality Management	1	Friday, June 25, 2021	Saturday, June 26, 2021
25	Unit 3: English Risk Assessment Weekly meeting 4B: Updating the group regarding completion status.	Evaluation by the Risk Management	1	Saturday, June 26, 2021	Sunday, June 27, 2021
26	Unit 3: Updating the approved English links to the library	Approval of Project manager along with the collaboration of the group	1	Sunday, June 27, 2021	Monday, June 28, 2021
27	Preparation of the weekly status report and submission to the professor	Communication group along with Project Manager	1	Monday, June 28, 2021	Tuesday, June 29, 2021
28	Analyzing the feedback of the Professor and constructing a list of changes to be made.	Examination by the Change Management	1	Tuesday, June 29, 2021	Wednesday, June 30, 2021
29	Unit 3: Locating resources for Mathematics. Weekly meeting 5A: Updating the group regarding completion status.	Collaboration of the group	2	Wednesday, June 30, 2021	Friday, July 2, 2021
30	Unit 3: Mathematics Quality Assurance Check	Inspection by the Quality Management	1	Friday, July 2, 2021	Saturday, July 3, 2021
31	Unit 3: Mathematics Risk Assessment Weekly meeting 5B: Updation to the group's status of completion.	Evaluation by the Risk Management	1	Saturday, July 3, 2021	Sunday, July 4, 2021

32	Unit 3: Updating the approved Mathematics links to the library	Approval of Project manager along with the collaboration of the group	1	Sunday, July 4, 2021	Monday, July 5, 2021	
33	Preparation of the weekly status report and submission to the professor	Communication group along with Project Manager	1	Monday, July 5, 2021	Tuesday, July 6, 2021	
34	Analyzing the feedback of the Professor and constructing a list of changes to be made.	Examination by the Change Management	1	Tuesday, July 6, 2021	Wednesday, July 7, 2021	
35	Unit 4: Locating resources for English and Mathematics Weekly meeting 6A: Updating the group regarding completion status.	Collaboration of the group	2	Wednesday, July 7, 2021	Friday, July 9, 2021	
36	Unit 4: Mathematics and English Quality Assurance Check	Inspection by the Quality Management	1	Friday, July 9, 2021	Saturday, July 10, 2021	
37	Unit 4: Mathematics and English Risk Assessment Weekly meeting 6B: Updating the group regarding completion status.	Evaluation by the Risk Management	1	Saturday, July 10, 2021	Sunday, July 11, 2021	
38	Unit 4: Updating the approved English and Mathematics links to the library	Approval of Project manager along with the collaboration of the group	1	Sunday, July 11, 2021	Monday, July 12, 2021	
39	Preparation of the weekly status report and submission to the professor	Communication group along with Project Manager	1	Monday, July 12, 2021	Tuesday, July 13, 2021	
40	Analyzing the feedback of the Professor and constructing a list of changes to be made.	Examination by the Change Management	1	Tuesday, July 13, 2021	Wednesday, July 14, 2021	
41	Unit 5: Locating resources for English and Mathematics Weekly meeting 7A: Updating the group regarding completion status.	Collaboration of the group	2	Wednesday, July 14, 2021	Friday, July 16, 2021	
42	Unit 5: Mathematics and English Quality Assurance Check	Inspection by the Quality Management	1	Friday, July 16, 2021	Saturday, July 17, 2021	

43	Unit 5: Mathematics and English Risk Assessment Weekly meeting 7B: Updating the group regarding completion status.	Evaluation by the Risk Management	1	Saturday, July 17, 2021	Sunday, July 18, 2021	
44	Unit 5: Updating the approved English and Mathematics links to the library	Approval of Project manager along with the collaboration of the group	1	Sunday, July 18, 2021	Monday, July 19, 2021	
45	Preparation of the weekly status report and submission to the professor	Communication group along with Project Manager	1	Monday, July 19, 2021	Tuesday, July 20, 2021	
46	Analyzing the feedback of the Professor and constructing a list of changes to be made.	Examination by the Change Management	1	Tuesday, July 20, 2021	Wednesday, July 21, 2021	
47	Unit 6: Locating resources for Mathematics Weekly meeting 8A: Updating the group regarding completion status.	Collaboration of the group	2	Wednesday, July 21, 2021	Friday, July 23, 2021	
48	Unit 6: Mathematics Quality Assurance Check	Inspection by the Quality Management	1	Friday, July 23, 2021	Saturday, July 24, 2021	
49	Unit 6: Mathematics Risk Assessment Weekly meeting 8B: Updation to the group's status of completion.	Evaluation by the Risk Management	1	Saturday, July 24, 2021	Sunday, July 25, 2021	
50	Unit 6: Updating the approved English and Mathematics links to the library	Approval of Project manager along with the collaboration of the group	1	Sunday, July 25, 2021	Monday, July 26, 2021	
51	Preparation of the weekly status report and submission to the professor. Preparation of final report. Review and submission of the final report	Communication group along with Project Manager	1	Monday, July 26, 2021	Tuesday, July 27, 2021	
52	Time for Celebration	Whole group		Wednesday, 28 July 2021	Wednesday, 28 July 2021	

5. COMMUNICATIONS MANAGEMENT PLAN

5.1. Introduction:

A communication plan defines how information and updates are shared within our group. The plan identifies three fundamental questions with whom, when, and how the communication will happen within the group and outside stakeholders. This Communication Management Plan will provide a framework to ensure that the project deliverables and all the personnel in charge are aware of their tasks. It also clearly identifies group members' responsibilities, escalation matrix for internal communication flow, channels, or communication tools used for effective communication, sets out how often stakeholders and the project group would communicate with each other to resolve issues or get status updates.

5.2. Objectives Of Our Communication Plan:

1. To facilitate resources and point out appropriate pathways of communication among the group members whenever a need arises.
2. To ensure project scope is accomplished with proper information sharing within the group. Thus, ensuring effective project coordination.
3. To provide effective communication without delay or barrier within and outside the project group, stakeholders, and professor.
4. To define and utilize up-to-date communication tools for effective and engaging meetings, which will lead to the project's success.

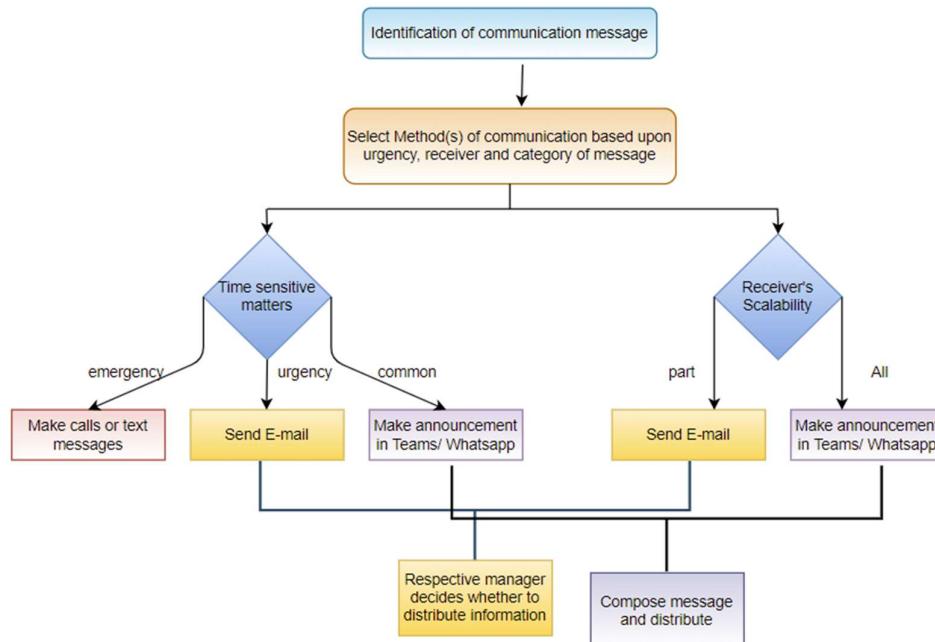
5.3. Communication Channel:

Sl. No	Name	Role	Email Id
1.	Aayushi Beniwal	Project Manager	abeniwal@uwaterloo.ca
2.	Neha Pranadika Bommana	Human Resource Manager	npbommana@uwaterloo.ca
3.	Swapnil Rana	Communication Manager	sprana@uwaterloo.ca
4.	Yash Tiwari	Communication Lead	Y2tiwari@uwaterloo.ca
5.	Uttej Reddy Pakanati	Change Manager	urpakana@uwaterloo.ca
6.	Jaya Sriram Ganeshna	Change Lead	jsganesh@uwaterloo.ca
7.	Krishna Kanth Mutta	Quality Manager	kkmpn@uwaterloo.ca
8.	Potamsetti Venkata Bhagyasree	Quality Lead	vbpotams@uwaterloo.ca
9.	Sai Anurag Neelisetty	Risk Assessment Manager	saneelisetty@uwaterloo.ca
10.	Saad Ali Usmani	Risk Assessment Lead	sausmani@uwaterloo.ca
11.	Prof. Peter Carr	Project Sponsor	pdcarr@uwaterloo.ca

5.4. Project Communication Flow:

Communications Plan		Methodology / Purpose / Channel
Internal Communication	Daily follow-up using WhatsApp group, emails, and telephonic conversations.	
	Bi-weekly meetings on wed 10AM E.S.T and Sat 10 A.M E.S.T on Teams	
	Microsoft Teams will be used for file sharing	
External (With stakeholders)	Weekly meetings with Professor Peter Carr every Tuesday at 7:00 PM E.S.T	
	Meeting with the sponsors in course online classroom on the scheduled dates.	
	Final project report and video presentation will be submitted to Professor Peter Carr by July 27 th	
Escalation Procedure	In case of any concern related to the project, team members will discuss the concern with the project manager who will discuss and escalate (when necessary) with the concerned stake holders	

Communication Flow



6. CHANGE MANAGEMENT PLAN

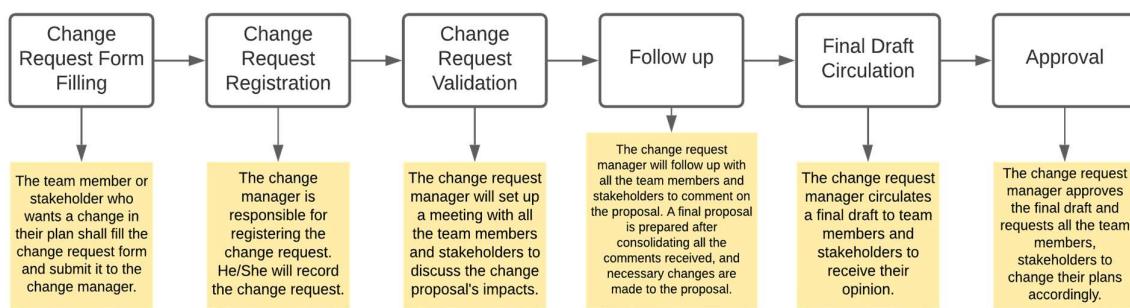
6.1. Aim:

The main aim of the change management plan is to incorporate the changes in the project without trading off the quality, scope, objectives, and timelines of the project. We plan to include a change management plan to successfully implement our Teachers Without Frontiers Group-1 English and Mathematics Grade-1 project.

6.2. Scope:

Any project during the project cycle may have to see changes regularly. The pressure to incorporate changes in the plan can be either from the project group or project stakeholders. Some of the suggested changes will be reasonable to include in the project, and some changes could leave the project severely off track. A change management plan defines roles and tasks to control and administer change in the project's execution of control phases. It allows us to consider suggested changes and make sound judgments on whether to incorporate them in your project plan or not. Change Management Plan will play a vital role in successfully implementing our Teachers Without Frontiers Group-1 English and Mathematics Grade-1 project. The project's primary audience would cover the project group, manager, sponsor, and stakeholders.

6.3. Change Management Process:



6.4. Types Of Changes:

We can call the variation from the actual plan, such as adding or deleting, or modifying content as change. It helps to assess the effect of the change in our project. The following are the possible areas where changes might take place during our project schedule.

Type	Description
Communication	Change in communication plan of the team.
Deliverables	Changes in project deliverables.
Process	Changes affecting the process.
Quality	Change affecting quality, requirements, control, and assurance.
Requirement	Changes affecting requirements.
Resources	Change in team members & human resources.
Risk	Change in risk evaluation of the project.
Schedule	Change in the schedule of the project.
Scope	Change in scope of the project.

6.5. Change Management Form and Log:

The change request form and the change management log are used for the Change Management Control Process. Appendix A depicts the Change Request Log, and Appendix B represents the Change Management Form.

The below table shows the various status report levels of a change request.

Status	Description
Open	The change request form has been opened/submitted.
In-Progress	The change request is still a work in progress.
In Review	The change request is in a final review.
Testing	The change request work has been reviewed and is being tested.
Closed	The change request is complete, has passed all tests, and updates have been released.

The below table shows the various priority levels of a change request.

Category	Description
Low	This change has the lowest effect on the project.
Medium	This change has the significant effect on the project.
High	This change is mandatory to achieve project needs.
Critical	The change is urgently needed for the project to meet its objectives

6.6. Change Management Roles and Responsibilities:

Below are the Change Management Roles and Responsibilities of the project group and stakeholders.

Role	Name	Contact details	Responsibility
Client	Muhammad Fida Hussain Fida	fida@itacec.org	His/her opinion plays a crucial role in approving critical change requests.
Professor	Prof. Peter Carr	pdcarr@uwaterloo.ca	Communicates the proposal change with the sponsor.
Project Manager	Aayushi Beniwal	abeniwal@uwaterloo.ca	She submits the change requests, and their opinion plays a vital role in accepting necessary and desired change requests.

7. QUALITY MANAGEMENT PLAN

7.1. Quality Management:

The chief objective of the Quality Management Plan is to ensure that the project output is of utmost quality and fits the intended purpose. Quality must always be thought of and planned well in advance to prevent redundant work and avoid loss of time and resources. Quality should also be considered from both the result and process perspective. This plan illustrates the proposal of Group-1(English and Mathematics for Grade-1) in handling the quality from project kick-off to completion. It ensures that the links provided on the website (<https://twf.cel.uwaterloo.ca/>) are authentic, easy to access – on various devices; specifically, mobile phones meet the teachers' needs in delivering tech-based learning. This group uses the following procedures – Quality Planning, Quality Control, Quality Assurance, and Continuous Quality Improvement to meet the quality standards. This plan also provides clear definitions of the Principles of Quality Management and QM Group Responsibilities.

7.2. Principles Of Quality Management:

Quality Management principles are a set of rules and standard norms that are to be implemented and utilized during the project's quality management phase. For improving the quality of the project, the following seven principles would be useful –

1. Customer focus

The foremost important principle would be to meet and strive to exceed customer requirements. Our current project focuses on meeting the client's requirements by providing user-friendly URLs for students, teachers, and parents.

2. Leadership

Leaders would establish the purpose of the project, provide directions, and enable the workforce to engage in reaching the quality standards. To ensure quality in our project, the Project manager sets weekly goals to be achieved, to maintain the harmony and quality of the project.

3. Engagement of people

Involvement of the project workforce at all levels would allow the group together to enhance its capability to create and deliver value to the project. The decisions in our project will recognize and involve every group member's aspect to enhance the project's quality.

4. Process approach

All the tasks and the characteristics, defined initially for the project, should be handled as processes that could lead to more efficient deliverables. The resources and the links accumulated in our project will undergo rigorous screening to ensure high performance and effectiveness are attained in the specified time frame.

5. Improvement

Continuous improvement of the project's overall performance should be the focus to accomplish the project successfully. All the data accumulated would be reassessed and changes will be incorporated to maintain the project quality standards.

6. Evidence-based decision making

Effective results would be based on the evaluation and the analysis of the data and information available. The decisions that will be captured during our project will be based on the facts, evidence, and validations of the URLs to ensure the correctness of the data.

7. Relationship management

To create value out of the project, the project group will need to manage its relationship with all the involved parties to enhance the performance. In our project, all the communication between the client, project group, and the project owner is considered to ensure that the client's expectations are accomplished.

7.3. Quality Planning:

Quality planning directs the extent of what is to be validated, which metrics will determine whether the project is efficient enough to aid teachers in imparting tech-based learning, innovate critical thinking in students and how these aspects will be fulfilled, from project initiation to project closure. It defines an orderly set of actions that specify how to function in a project to establish the outcomes in order to meet the customer requirements.

7.4. Quality Control:

Quality Control includes the standards and regulations a quality group must follow to achieve fruitful results. Various steps involved in examining the performance, such as making notes of the results during and at the end of all the processes, making sure that the results at each stage are valid, are defined under QC. This generally gives us the measure of any defects within the project.

The following table shows the Quality Control standards, responsible group member(s), and how regularly these quality checks are carried out.

Project Milestone	Performance standards	Quality Control Evaluator	Assessment Periodicity/Frequency
Project Management plan	Shows the synopsis of actual work	Team	Monthly
		Quality Lead	Weekly
		Quality Manager	Weekly
		Project Manager	Twice a month
		Project Sponsor	Twice (V.1 and Last version)
Weekly Project status report	Achieve targets and align with project schedule with intended quality	Team	Weekly (Saturdays)
		Quality Lead	Weekly (Saturdays)
		Quality Manager	Weekly (Saturdays)
		Project Manager	Weekly (Saturdays)
Final Project Report and Presentation	Perfectly align with project management plan and defined deliverables	Team	Twice (July 22,24) *
		Quality Lead	Thrice (July 25,26,27) *
		Quality Manager	Thrice (July 25,26,27) *
		Project Manager	Twice (July 26,27) *
		Project Sponsor	Once (July 29) *
Quality Control matrix	Ensuring all outcomes pass the quality check as per Appendix-C	Team	Weekly (To be filled out by all team members)
		Quality Lead	After a units work completion
		Quality Manager	After a units work completion
		Project Manager	After a units work completion
		Project Sponsor	Once (upon final project delivery)

(*Tentative)

7.5. Quality Assurance:

Quality Assurance considers the quality specifications and conclusions drawn from quality control assessments. It assures that the required level of quality is met. In short, it is a step-by-step measure of the output to ensure that the final product meets the project specifications. The following table shows the Quality Assurance standards, responsible group member(s), and how regularly these assessments are carried out.

Project Milestone	Performance Standards	Quality Control Evaluator	Assessment Periodicity/Frequency
Organize Project Management Plan	Ensure it complies to PMBOK 6 th Edition	Team	Monthly
		Quality Lead	Twice a month
		Quality Manager	Twice a month
		Project Manager	Twice a month
		Project Sponsor	Twice (First and last version)
Execute Project according to Project Management Plan	Ensure it complies to PMBOK 6 th Edition	Team	Weekly (Saturdays)
		Quality Lead	Weekly (Saturdays)
		Quality Manager	Weekly (Saturdays)
		Project Manager	Weekly (Saturdays)
Approve each Project Stage	Ensure it complies to PMBOK 6 th Edition	Team	Weekly (Saturdays)
		Quality Lead	Once (Upon completion of project stage)
		Quality Manager	Once (Upon completion of project stage)
		Project Manager	Twice (Before Submission)
Final Project Review	Ensure it complies to PMBOK 6 th Edition	Team	Once (Before Submission)
		Quality Lead	Two times (upon completion before submission)
		Quality Manager	Two times (upon completion before submission)
		Project Manager	Two times (upon completion before submission)
		Project Sponsor	Once (upon completion)

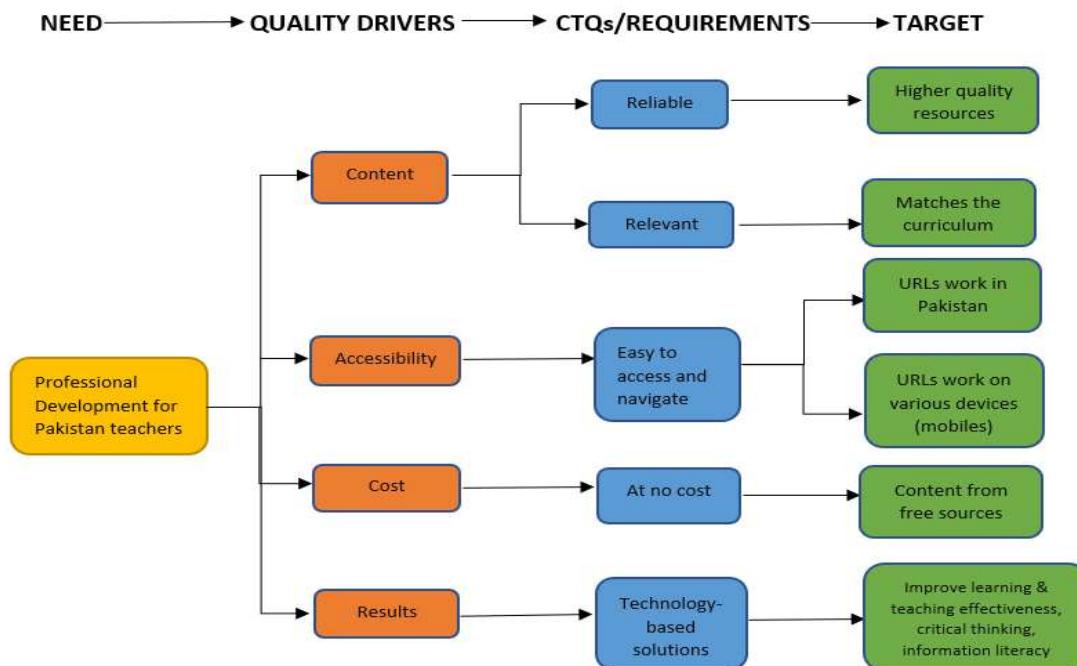
7.6. CTQ Tree:

In our project, we are also utilizing the concept of a CTQ Tree, which stands for Critical-To Quality Tree. The characteristics of the product that are critical to quality as judged by customers are known as CTQ. A CTQ tree is a Six Sigma tool that identifies the need(s) of the customer and evaluates the features of the product that the customer values the most. It helps in determining the quality drivers, the requirements and helps in finding ways to reach the target.

A CTQ tree can have 3-5 components based on the customer requirement. Here we are breaking down the need into four component areas:

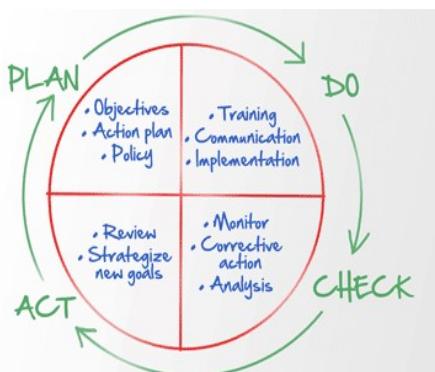
- *Need* – What customer requirements are you fulfilling with your product?
- *Drivers* – Which elements are considered by the customers when judging the quality of the product?
- *Requirements* – What product requirements are needed to make those drivers meet customer standards?
- *Target* – What individual target (part of the need) is achieved with each requirement fulfillment?

Below is the CTQ Tree that enables TWF Group-1 English and Mathematics for Grade-1 to define customer needs in a lucid way.



7.7. Continuous Improvement in Quality:

This includes tools that can be used to improve processes and actions during and at the end of the project to produce a result of greater quality. In our project, we are opting for the “*Plan-Do-Check-Act*” cycle, which aids in continuous quality improvement. The structure and methodology of this continuous improvement system keep us on track in maintaining focus on project objectives.



- **P** — Plan — Plan the improvement we want to make based on observation or an outcome.
- **D** — Do — Do the actions, make the changes, make the modifications and update the procedure.
- **C** — Check — Check the results and implications of the improvement.
- **A** — Act — Act on observations and make any modifications or further improvements if necessary.

Source: Google images

7.8. Quality Management Group Responsibilities:

The most efficient way of assigning and documenting the responsibilities is using the Responsibility Assignment Matrix (RACI Matrix). Using RACI, responsibilities can be categorized as who is Responsible (R), is Accountable (A), must be Consulted with (C), and shall stay Informed (I).

Task / Responsibilities	Project Customer (Muhammad Fida Hussain Fida)	Project Manager (Aayushi Beniwal)	Quality Manager (Krishna Kanth Mutta)	Quality Lead (Venkata Bhagyasree)	Team (Group I)
QA	C, R	R	A	A	R
QC	C, R	R	A	A	R

8. RISK MANAGEMENT PLAN

Risks are sometimes called complications that occur in a project. These complications could cause a project to fail. Risks sometimes can cause a change in the whole plan that the group has been following. Different types of risks can occur in a project, such as a cost, performance, schedule, communication, strategy. These uncertainties might or might not occur but to have a risk management plan before starting a project is advisable. Also, this plan must be revisited during the project to make sure the project is on track without deviations.

The group has understood different types of risks associated with a project, identified the potential risks, and has developed solutions/strategies to handle them.

- 1) The group can take a longer time than expected to reach milestones or deliveries. Reasons could be workload, group members taking off in between as the group members are graduate students and will have other course deadlines. This is a schedule risk that can affect the timelines proposed and can be avoided or handled by
 - Having weekly meetings, discussing the progress of the tasks assigned, and ensuring there are no bottlenecks.
 - Each member must plan their work properly and the project manager must be aware of the workload.
- 2) Content that is gathered online can sometimes have copyright issues. This is a serious risk that can have an impact on the project group as well as on the client. This must be handled in the following way.
 - Group members must double-check if there are any copyright issues while they are collecting the resources.
 - The quality management group will be responsible for avoiding these types of risks.
- 3) There can be changes from the client or the professor. This can lead to a change in the ongoing work plan. This can be handled by
 - The change management group will take care of such risks and will make sure these are not affecting the work plan that is being followed. Proper procedure has been considered for any such changes that might occur.

- 4) A link to the website that was working initially might not work at the time of delivery. This could occur and must be handled.
- The quality management group will check the resources collected before delivering the project to the client to ensure the delivered resources are of good quality and are working.
- 5) There can be a difference in opinion between the group members regarding the resources collected or meeting timings, affecting the group spirit and eventually deliverables.
- The project manager or HR will deal with such issues and make sure there are no conflicts between group members.
- 6) The work that is being done might not be as expected by the client. This is a performance risk that must be handled.
- Project scope and objectives are clearly defined in the project plan, and these must be visited regularly.
 - Weekly meetings within the group and discussing the progress with the professor helps to avoid such risks.
- 7) Operational risks can occur in terms of issues in the process being followed, or the implemented plan does not solve the raised problem. The project manager handles such issues.

Below is a sample of a risk register or a risk log. This will be used to track risks that are identified during the project. The risk register contains a risk ID to make the tracking easy, the date, description, severity, owner who is responsible for solving the risk, action to be taken, and the status, if it is closed or opened.

Risk ID	Date raised	Risk description	Severity	Owner	Action	Status
R_01	D/M/Y	Define the risk	[High/Medium/Low]	Person responsible for the ticket	Action to be taken	Open / Closed

9. HUMAN RESOURCE MANAGEMENT PLAN

The success of the project depends on how project managers plan and manage their staff. The human resource management plan provides profiles of the project group members, describes the various roles and responsibilities that the group members will perform, and sets out the guidelines by which the group will operate.

9.1. Roles and Responsibilities:

1. Project Manager

- a. Focus on the overall activities of the project.
- b. Keep the communication with sponsors and the project group members to supervise the progress of the project.
- c. Ensures satisfaction within the group and the sponsors.
- d. Resolve any issues within the group and manage the risks with the sponsors.

2. Communication Manager & Lead

- a. Coordinate amongst group members to facilitate regular group meetings.
- b. Respond to communication issues swiftly.
- c. Prepare detailed status report.
- d. Responsible for following up on decided actions.

3. Quality Manager & Lead

- a. Understand the sponsor's requirements and develop an effective quality control process.
- b. Ensure quality standards are set for information to be accurate and reliable.
- c. Examine the quality of each resource and the final compiled work.
- d. Assure the quality of the work by making required changes wherever the quality is not up to the mark.

4. Change Manager & Lead

- a. Responsible for incorporating the changes suggested by the group members or the sponsors.
- b. Complete change management assessments, change impact assessments.
- c. Define and measure success metrics and monitor change progress.
- d. Proactively identify and implement improvements to the change management strategy & methodology.

5. Risk Assessment Manager & Lead

- a. Create a risk management plan by identifying potential risks and seek suitable solutions.
- b. Register and track the necessary information required to manage the project changes from initiation to delivery effectively.
- c. Set up an organized and effective procedure for tracking the submission, coordination, review, evaluation, categorization, and approval to release all changes to the project's standards.
- d. Support project manager and group members with tools and means to identify, assess, control, and respond to risks and issues of the project.

6. Human Resource Manager

- a. Determine appropriate resources required for the project.
- b. Make sure all roles and responsibilities are clearly assigned on the project.
- c. Organize and manage the group effectively.
- d. Conduct group performance review, recognize and reward the group members.

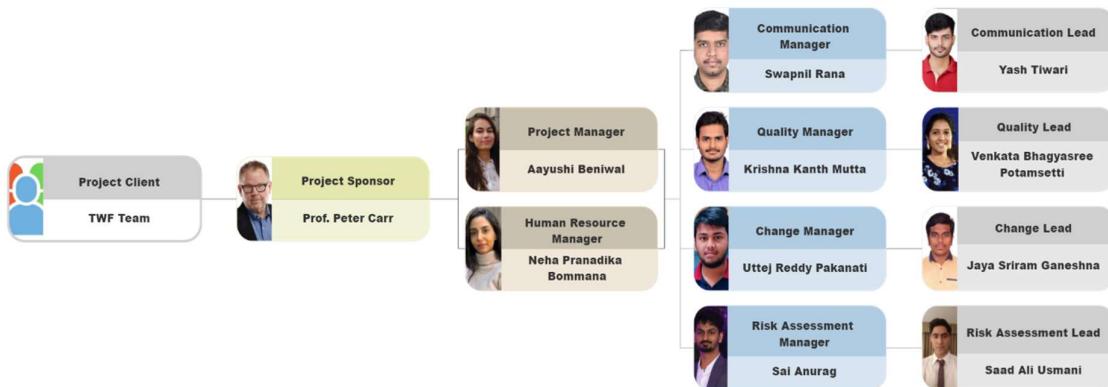
9.2. Mapping Roles to Group Members:

The roles are assigned to the individuals based on a survey that we conducted. This survey collected the data on group members' competencies, knowledge, and expertise. The roles were clearly discussed and agreed upon by all the group members during the TWG Group-1 English and Mathematics for Grade-1 initial group meeting.

Name	Role	Previous Experience
Aayushi Beniwal	Project Manager	Senior Systems Engineer in Infosys with 2.8 years of tech experience. Social service practitioner in NGO for spreading awareness.
Neha Pranadika Bommana	Human Resource Manager	Computer Science Engineer and Team Leader at a Non-Profit Organisation in India for 3 years
Swapnil Rana	Communication Manager	Electronics Design and Development Engineer at Godrej Interio for 2 years with prior experience in IoT and maintenance for 3 years
Yash Tiwari	Communication Lead	Senior System Engineer at Infosys Limited with 2.5 years of work experience
Krishna Kanth Mutta	Quality Manager	Technology Consultant at Deloitte Consulting with 4.5 years of experience
Venkata Bhagyasree Potamsetti	Quality Lead	Test Automation Engineer at Optum Global Solutions with 3.4 years of experience
Uttej Reddy Pakanati	Change Manager	Data Analytics Specialist at Deloitte with 3.5 years of experience.
Jaya Sriram Ganeshna	Change Lead	IT Consultant at Vassu Tech with 1.5 years of experience.
Sai Anurag	Risk Assessment Manager	Software Engineer at RNTBCI with 3.5 years of experience.
Saad Ali Usmani	Risk Assessment Lead	Assistant Mechanical Engineer at Samiah international Pvt.Ltd., India for 1.5yrs and 1 year experience as Research assistant.

9.3. Project Organizational Structure:

The below chart shows the hierarchical classification of the group to ensure efficiency in task allocation and increase the project's performance.



9.4. Core Values:

To assure results of greater quality, TWG Group-1 English, Mathematics Grade-1 has adapted *Douglas McGregor's* list of the unique characteristics of an effective group:

- *Understanding, mutual agreement, and identification with respect to the primary task*
When actions are decided upon, clear assignments are made and accepted by the members.
- *Open communications*
All the group members should be able to express their ideas without any inhibitions.
There is a lot of task-relevant discussions in which most members participate.
- *Mutual trust*
The members listen well to each other, build ideas trusting the capability of other group members.
- *Mutual support*
Be committed to the assigned tasks and support each other to deliver outcomes in a timely manner.
- *Management of human differences leading to group synergy.*
Conflicts and disagreements are present but are centered around ideas and methods, not around personalities and people.

- *Selective use of the group & appropriate member skills*

The potential and experience of every individual are considered, and suitable work is assigned.

- *Leadership*

Directing the group and integrating the above characteristics.

With all these values in place, TWG Group-1 English and Mathematics Grade-1 group believes in successfully accomplishing its mission. In addition to a greater level of productivity, the personal and interpersonal needs of the members are also simultaneously satisfied.

9.5. Performance Evaluation and Appraisal:

Checks on performance at regular intervals are essential for the smooth delivery of the project. Communication plays a key role here. The Project Manager assigns the tasks (after discussions within the group) and gives clear directions on what is expected from everyone. The outcome should be relevant, efficient, accurate, reliable, and delivered within the defined timelines. These factors are taken into consideration, and the performance of the group is evaluated. Below recognitions are virtually awarded to the group members based on their working potential.

- *STAR* – For the members who exceed the expectations.
- *BRAVO* – For the members who offer help and support to other group members.
- *DIAMOND* – For the members who solve any internal issues quickly (that might arise).

More activities -

- Virtual game nights are planned monthly to enable group engagement and improve group spirit.
- The project sponsor will acknowledge the input of the group members towards the completion of the project and vice-versa.
- On successful project completion and delivery, a virtual party will be held with all group members.

10. SPONSOR AND PROFESSOR ACCEPTANCE

The Client and Professor should sign regarding their formal acceptance of the project plan.

Name	Position	Signature	Date
TWF Group	Client		
Prof. Peter Carr	Professor		

APPENDIX

Appendix-A: Change Management Log:

S. No	Requestor	Requested	Date of Change Request	Current Type	Priority Status	Impact Summary	Date Work Begins	Estimated Completion Date	Escalation Required	Date Completed	Comments
	Name	Change Request	Type	Status							
		Description					Begins	Date			

Appendix-B: Change Management Form:

CHANGE MANAGEMENT FORM					
Project Name:					
Department:					
Change Request No.:					
Change Requester Details					
Requester Name:					
Change Request Date:					
Requester Email:					
Requester Phone No.:					
Change Request Basic Details					
Description of Request:					
Type of Change:					
Change Request Priority		Low	Medium	High	Critical
Resources Required:					
Area of Impact		Impact Description			
Change Request Approval					
Reviewer Name:					
Change Review Status		Accept		Reject	
Reviewer Signature:					
Additional Comments					

Appendix-C: Quality Control Matrix:

(To be filled in by all the team members)

Name: _____

Date: _____

Specifics to be reviewed	Yes	No
URL is authentic		
URL is working		
URL navigates to relevant content		
Content on the URL has material on the defined curriculum		
Content of the URL is from legally free resources		
Content shows up as expected (on mobile phone)		
Content can be easily navigated to (on mobile phones)		
Content of the URL is continually relevant and aligns with course curriculum		
Content on the URL is free from mistakes		
Content of the URL is in the approved language (English)		
Content of the URL is appropriate and does not discriminate against or is offensive toward culture, religion, gender, and lifestyle		
Content of the URL is neutral and takes no political sides		
Content of the URL does not contain any hate speech		