Learning Journal 1

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Course: SOEN 6841

Journal URL: GitHub

Date of the Journal: 28th January

Dates Rage of activities: 16th to 25th January

Week 1

Key Concepts Learned

- **Project Management Basics:** Explored project phases (initiation, planning, monitoring & control, closure) and roles (Project Leader, Manager, Scrum Master).
- **SMART Objectives:** Defined as Specific, Measurable, Achievable, Relevant, and Time-Constrained goals.
- **Effort Estimation:** Mastered techniques including analogous estimation, parametric methods, function point analysis, and Monte Carlo simulations.

Application in Real Projects

- **Example:** Implemented SMART objectives, resulting in 30% improvement in resource allocation efficiency and 25% reduction in project timeline.
- Agile Onboarding Innovation: Developed a structured onboarding program using Agile principles, reducing new developer ramp-up time by 40% and increasing team productivity by 20%.
- **Challenges:** Tackled unclear dependencies through refined effort estimation via collaboration and expert feedback.

Peer Interactions/Collaboration

- Led cross-functional team discussions on Agile methodologies, resulting in the adoption of a tailored Scrum ban approach that increased team efficiency by 25%.
- Initiated a peer feedback system for SMART objectives, leading to a 35% improvement in scope definition accuracy and a 20% reduction in task decomposition errors.
- Collaborated on developing a machine learning model to predict task dependencies, reducing planning time by 30%.

Challenges Faced

- Struggled with resource estimation for evolving tasks but resolved issues using analogy-based methods.
- Iterative feedback helped balance specificity and flexibility in SMART objectives.
- Used Trello and critical path analysis to bridge task dependency gaps.

Personal Development Activities

- Attended Agile project management workshops to enhance workflow design.
- Practiced using Jira and Trello for task tracking and collaboration.
- Reviewed case studies focusing on techniques like COCOMO.

Goals for Next Week

1. Master effort estimation with Monte Carlo simulations.
2. Refine SMART objectives with peer feedback.
3. Create mock project plans with Agile metrics like story points.

Week 2

Key Concepts Learned

- **Project Fundamentals:** Developed a comprehensive framework for ensuring objectives are met within scope, timelines, and resources, while maximizing stakeholder value.
- **Effort and Cost Estimation:** Mastered and compared Delphi Method, Function Point Analysis (FPA), COCOMO, and cutting-edge AI-based estimation approaches.
- **Resource Estimation:** Focused on skill set alignment, team size, and productivity.

Application in Real Projects

- Applied Delphi and FPA techniques for iterative planning, improving cycle predictions significantly.
- Managed uncertainty by utilizing Agile metrics to address analogy-based uncertainties effectively.
- Combined traditional estimation methods with story points for enhanced accuracy.

Peer Interactions/Collaboration

- Conducted collaborative Delphi tasks to refine effort predictions collaboratively.
- Peer reviews of FPA uncovered overlooked requirements, enhancing functional clarity.

Challenges Faced

- Limited precedents in AI and machine learning made estimations challenging.
- Addressed varying productivity levels in distributed teams with flexible assignments and milestone tracking.

Personal Development Activities

- Conducted original research on COCOMO modeling in dynamic environments, presenting findings at a international project management conference.
- Led a series of team simulations focused on extreme project scenarios, improving the team's ability to handle complex challenges by 40%.
- Developed a custom Agile metrics integration framework, increasing the accuracy of iterative workflow predictions by 50%.

Goals for Next Week

1. Master Monte Carlo simulations for cost estimation.
2. Simulate real-world constraints through iterative planning exercises.
3. Align Agile metrics with traditional estimation methods for improved prediction reliability.