Collective Efficacy within SCRUM Teams

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Abstract

The objective of this study is to characterize and understand collective efficacy of Scrum teams set-up within a department. Two different Scrum teams were observed over the course of several months to gather qualitative data on characterizations of collective efficacy. It was found that evolutions in the groups understanding of the Scrum process guided changes in the defined collective efficacy elements.
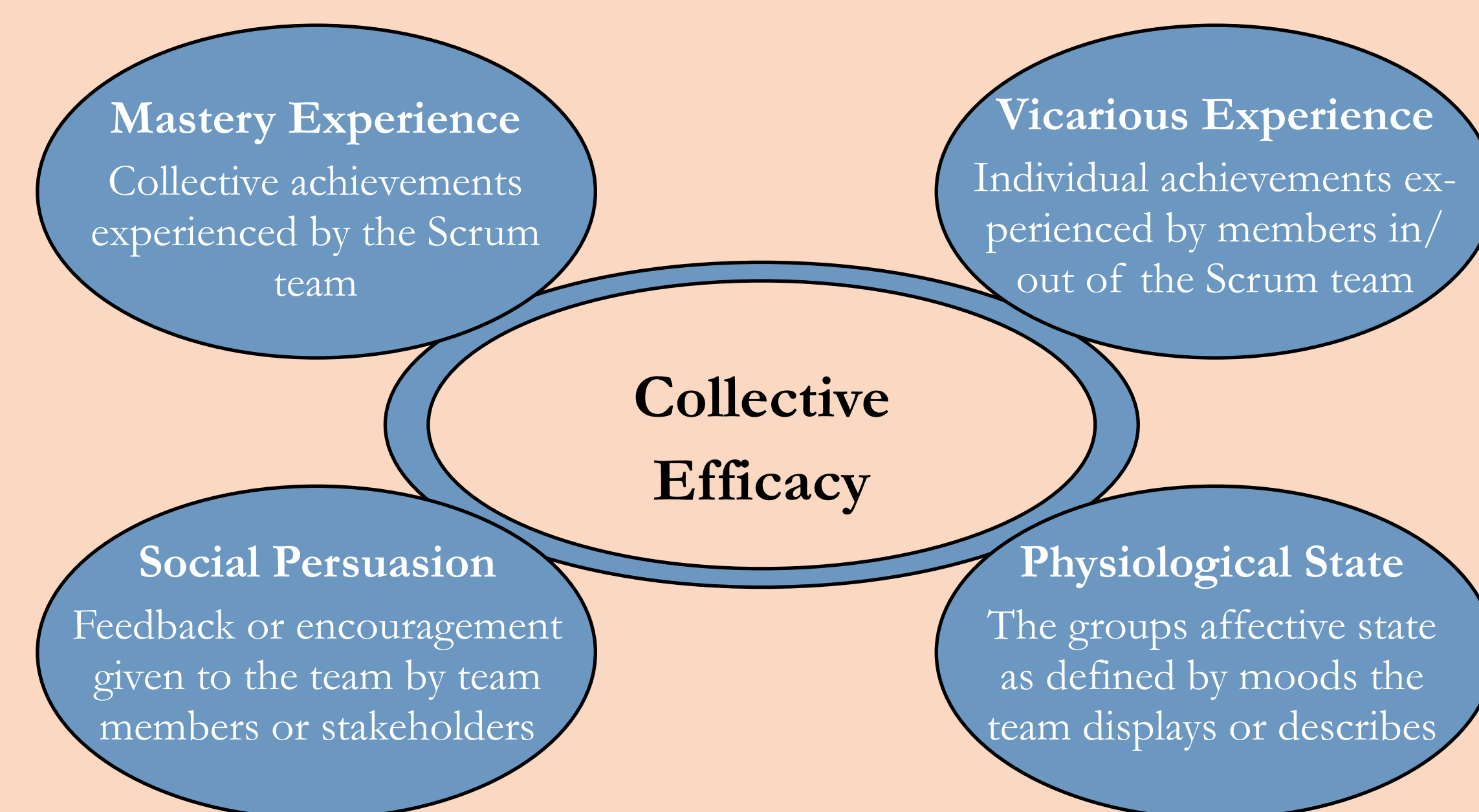
Introduction

Scrum is an agile methodology that encourages transparency, inspection, and adaptation in the development of a product during a short timeline called a Sprint [1]. A Sprint is a devoted window of time in which smaller tasks with the highest value are completed to develop the Product.

A Scrum team is a group of 5 to 9 people that are given the authority to prioritize the tasks and do what is best for the development of the product. The teams are characterized by being self-organizing, communicate regularly, and having the expertise to complete the product [1].

This work examines collective efficacy of Scrum teams to understand: *How does collective efficacy develop for a newly formed Scrum team?*

Collective Efficacy

Collective efficacy is a group's shared belief in its conjoint capabilities to organize and execute the courses of action required to produce given levels of attainments [2].

Mastery Experience — Collective achievements experienced by the Scrum team

Vicarious Experience — Individual achievements experienced by members in/out of the Scrum team

Collective Efficacy

Social Persuasion — Feedback or encouragement given to the team by team members or stakeholders

Physiological State — The groups affective state as defined by moods the team displays or describes

Methods

Scrum teams were recorded during their Sprint Review, Retrospective, and Planning meeting that occur at the end of a Sprint. The videos were analyzed by two researchers in search of several identifying elements to characterize collective efficacy and it's change overtime.

IV. Results

As the team gained familiarity with Scrum, more tasks were completed, and organization progressed, it was overserved that overall collective efficacy increase.

First Retrospective	Element	After Four Retrospectives
Team had no experiences worth noting to date since this represented the first Scrum retrospective as a team.	**Mastery Experience**	The team noted significant progress in success with different methods of Scrum. They were pleased "that everything went really well this time around".
The team focused on what other organizations have done and referenced those approaches to the development of the product.	**Vicarious Experience**	As the team gained knowledge about specified topics the necessity to obtain outside information lessened leading to a decrease in the reference to vicarious experiences.
The team was experiences a lack of motivation for the process and was received pressure from the product owner about timeliness and quantity of tasks completed.	**Social Persuasion**	As the team showed ability to complete tasks the product owner transitioned from direct feedback to more motivational feedback allowing the team to decide next steps.
[Not Observed]	**Physiological State**	[Not Observed]

V. Discussion

This sense of collective efficacy could be significantly hindered by a lack of progress inside the team, especially when hindered by dependencies from outside the team. Several downfalls to Scrum team success include overall workload, past negative change experience, and overall understanding of the Scrum process. Role definition was also critical. When roles were not properly defined, confusion arose onto who has final say for task completion. Additionally, when the members cannot solely focused on Scrum tasks there is a disconnect between overall end goal and individual task completion during a sprint cycle.

References

[1] Schwaber, K., & Sutherland, J. (2011). The scrum guide. Scrum

[2] Bandura, A. (1986). *Social foundations of thought and action: A social cognitive theory*. Englewood Cliffs, NJ: Prentice Hall