



Transform Students' Learning Motivation from Extrinsic to Intrinsic Motivation through Cogenerative Dialogues



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INTRODUCTION

- This study introduces cogenerative dialogues as a pedagogical tool to enhance the communications between students and engineers in a university internship environment.
- In this study, high school student interns worked with engineers for 7 months and were invited to conduct cogenerative dialogues with engineers regularly and discuss any issues, concerns, positives happened in the internship in order to improve their learning experience.

PROBLEMS & STUDY PURPOSE

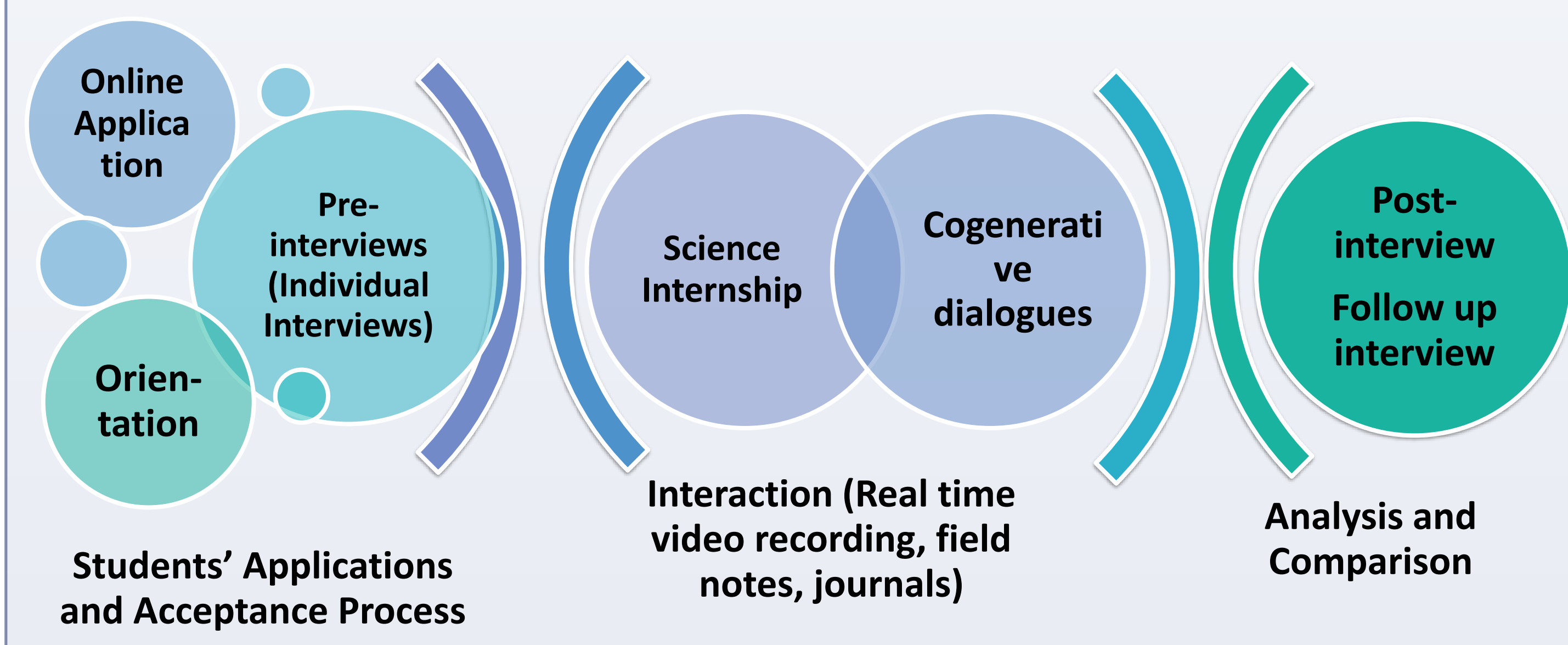
- Only 70% of all students in public high schools graduate, and only 32% of all students leave high school qualified to attend four-year colleges. (Greene & Forster, 2015)
- Only 51% of all black students and 52% of all Hispanic students graduate, and only 20% of all black students and 16% of all Hispanic students leave high school college-ready (Greene & Forster, 2015).
- College programs that focus on establishing positive personal and social connections, acceptance, belonging, fit, encouragement, and comfort will facilitate student satisfaction and reenrollment (Nora, 2004).

RESEARCH OBJECTIVE

- Understand how cogenerative dialogues may help high school students to actively engage in open inquiry projects with their mentors.



RESEARCH CONTEXT



METHOD & DATA SOURCES

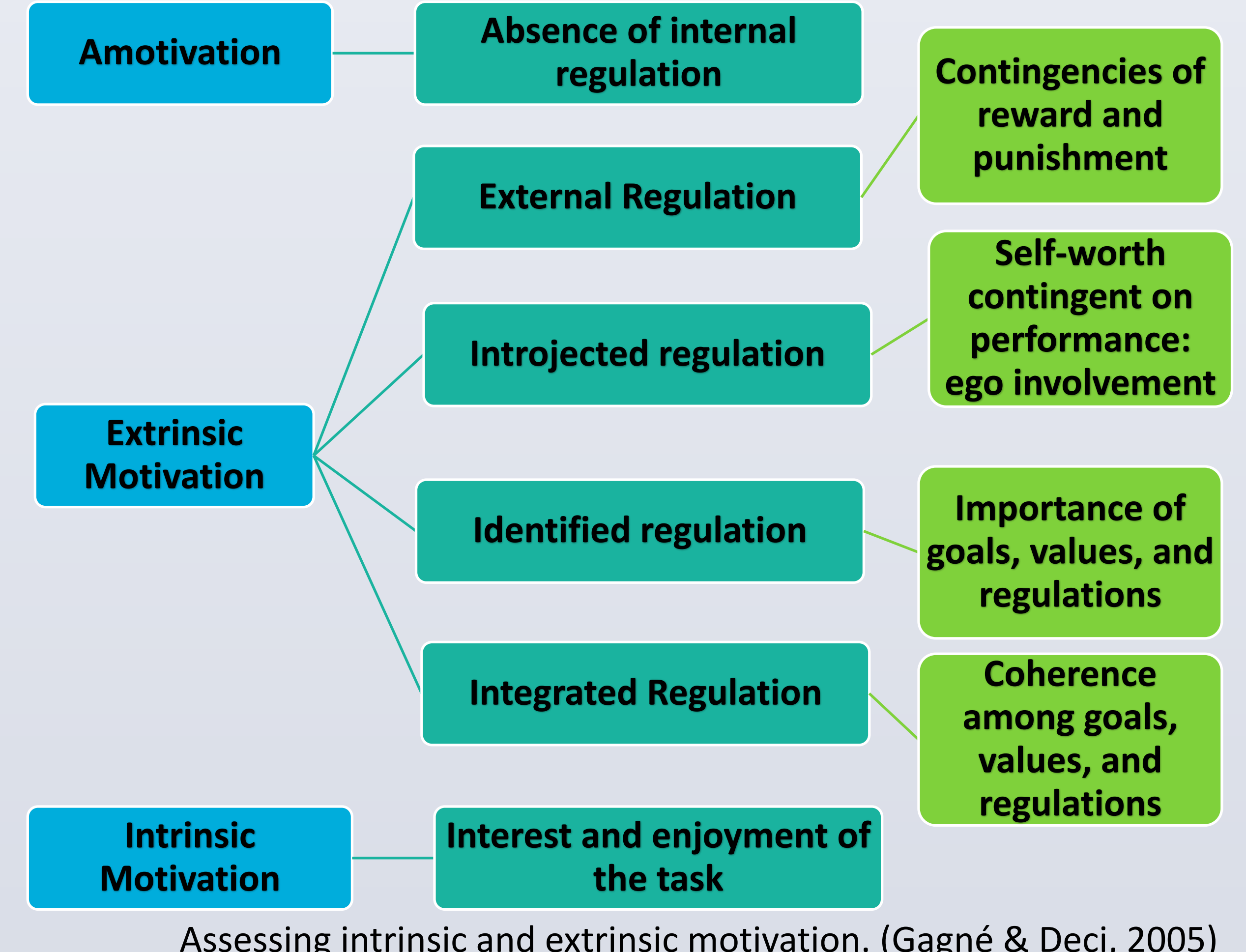
- Method: Ethnography was used to capture what happened in the internship through participant observation and face-to-face interviewing.
- Data Sources:
 Face-to-face interview
 Students' journals
 Real time video recording
 Field notes

STUDENTS' COMMENTS

- "The impact that this internship had on you is a fact that now you have an interest in science, and now that may be something you wanna pursue"
- "We expressed ourselves in Cogen freely without, I guess, being judged".
- "You gotta let people know what's bothering, if there's something bothering you, instead of just holding it in just let it out. And cogen is like the time to do that."
- "[Cogen] It helped all of us understand who we were as individuals and who we were as a team. And it carried-- it carried us forward into making sure that we were able to overcome anything through both good and the bad."
- "[Cogen] Has helped me be a better person and has helped me pushed myself to be better in my talent and creativity"
- "We learned by having fun, and then we were still serious... that's, I think, when we were the most productive... when we were working and having fun, those were kind of really productive times"

THEORETIC FRAMEWORK SELF-DETERMINATION THEORY

Self-Determination Theory postulates that autonomous and controlled motivations differ in terms of both their underlying regulatory processes and their accompanying experiences, and it further suggests that behaviors can be characterized in terms of the degree to which they are autonomous versus controlled. Autonomous motivation and controlled motivation are both intentional, and together they stand in contrast to amotivation, which involves a lack of intention and motivation. (Gagné & Deci, 2005)



Assessing intrinsic and extrinsic motivation. (Gagné & Deci, 2005)

RESULTS

No	Motivation	Evidence
1	Extrinsic motivation - External regulation	Exercise punishment system: Students agree to develop a punishment system whenever they did not follow instructions or completed goals. Break time: Students had 10 minutes break as a reward after working during 50 minutes on their projects
2	Extrinsic motivation-Introjected regulation	Head scientist included students in planning and brainstorming processes prior establishing project's objective
3	Extrinsic motivation-Identified regulation	Calendar handout is distributed to the students. Calendar contained goals, deadlines and presentation dates. Students were informed about the importance of each one of them and were responsible and committed to accomplish them.
4	Intrinsic motivation	Student decided to keep investigating on topics previously learned at the internship and apply them to daily life.

- Cogenerative dialogues can help students to:
 - Reflect on their learning process
 - Freely exchange their ideas with their peers and mentors
 - Develop a sense of autonomy and responsibility

CONCLUSIONS

Cogenerative dialogues help students to understand the importance of work ethics, teamwork, communications, and time management in order to achieve a successful collaboration and transform their learning motivation from extrinsic to intrinsic.



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