



Motivation and Engagement in Apprenticeship among Students of Civil Engineering Program in Indonesia

Arifiano Satria Utama¹, Siti Talitha Rachma¹, Irfan Prasetyo Loekito¹, Satriana Fitri Mustika Sari¹, Suprpto¹, Arizal¹, Ramadhan Marsya Oktaviana¹

¹Study Program of D4 Civil Engineering, Faculty of Vocational Studies, State University of Surabaya, Indonesia

Corresponding Author Email :

sitirachma@unesa.ac.id

Abstract : This research explores how motivation and engagement in apprenticeships affect civil engineering students in Indonesia. We use qualitative research methods to understand what drives students to stay motivated and engaged during their apprenticeships. Our study is based on Self-Determination Theory, which helps us understand the factors that influence motivation. Self-Determination Theory includes several important ideas. Autonomy means students feel they have control over their own work and decisions. Competence is about students feeling capable and skilled in their tasks. Relatedness refers to the sense of connection and support students get from others, like mentors and peers. Intrinsic Motivation involves students being driven by their own interests and enjoyment in the work they are doing, rather than external rewards. In this research, we look at how these factors impact students' motivation and engagement in their apprenticeships. We explore how feeling in control, capable, connected, and interested in their work affects their overall experience. By studying these aspects, we aim to show how different types of motivation influence how engaged students are and how they perform during their apprenticeships. This research highlights the importance of understanding what keeps civil engineering students motivated and engaged in their practical learning experiences..

Keywords: vocational apprenticeship, civil engineering, motivation, engagement, professional growth

1. Introduction of the Study

1.1. Background & Reserch Problem

Previous studies have discussed the importance of internships, both in terms of education or learning and in terms of the world of work [1][2]. Internships, in the context of higher education, are one of the learning activities that involve students and are held outside the classroom and even outside the campus. Internships have become a research topic raised by researchers in Indonesia. Several previous studies on internships in Indonesia discussed the causal relationship between internships and

improving the skills and/or knowledge of student interns [3][4][5][6]. Other previous studies, on student internships, discussed the causality between internships and readiness to face the world of work [7][8][9]. It can be concluded that several previous studies on the topic of internships tend to focus on the results or outputs or benefits of internship activities. In contrast to previous studies, this study focuses on the process of internship activities or implementation. More specifically, this study discusses the issue of motivation and engagement. Motivation refers to a series of internal processes that energize, direct, and sustain a person's behavior [10]. Engagement is essential for learning, engagement is multi-dimensional with behavioral and psychological components, and develops and occurs continuously [11].

1.2. Research Aim Related to Theoretical Review

This research aims to explain key motivation and engagement strategies that contribute to effective learning and skill development in apprenticeship contexts

1.3. Literature Review

To achieve the research aim, this study is grounded in Self-Determination Theory. This theory encompasses several critical elements to consider, including Autonomy, Competence, Relatedness, Intrinsic Motivation. Individuals experience greater motivation when they feel in control of their actions and decisions, leading to increased engagement in their tasks [12]. When people perceive themselves as capable, their confidence and drive to succeed grow and this is why a sense of competence is vital for motivation [13]. Establishing meaningful connections with others enhances motivation because supportive social relationships are essential for maintaining commitment [14]. When individuals engage in activities for the pure enjoyment they bring, their intrinsic motivation flourishes, resulting in increased creativity and persistence [15]. Autonomy fosters a sense of ownership over one's actions, making individuals more likely to commit to their tasks [16]. Mastery experiences contribute to a heightened sense of competence that further motivate individuals to pursue their goals [17]. The drive to engage in activities for their inherent satisfaction rather than for external rewards leads to more profound and lasting motivation.

2. Method of the Study

2.1. Research Design

The method of this study is entrenched in qualitative investigate, highlighting narrative examination to deeply discover the individual and contextual scopes of participants' stories. Qualitative study approaches are employed to accomplish a detailed understanding of multifaceted social phenomena through descriptive data, whereas narrative examination encompasses exploratory personal accounts to

discover how persons construct and convey their own life stories and meanings [19][20].

2.2. Research Participant

This study employs purposive informants to gain detailed and relevant information. The purposive sampling method involves choosing participants based on their particular experiences or characteristics that are integral to the research study, which ensures that the information collected is both highly relevant and informative in relation to the study's specific aims [21].

2.3. Data Collection

This research employs interview, predominantly semi-structured interview. In qualitative investigate, interviews serve as a crucial method for gathering rich, comprehensive data through personal interface, and semi-structured interviews are predominantly appreciated as they combine a set outline of questions with the occasion to explore unexpected perceptions that appear during the discussion [22][23].

2.4. Data Analysis

This research is a qualitative study that uses descriptive analysis methods. Descriptive analysis is a way of analyzing data that includes grouping data into thematic categories and presenting these groups or categories or themes as descriptive summaries that show the main characteristics and patterns of the data, at the surface level [24][25].

3. Result and Discussion

Students participating in the internship are quite free to choose/control the situation/things related to the implementation of tasks/projects during the internship. This is expressed through the example that he is constantly given opportunities by the field team as well as the team in the office to learn many things that happen in the project, such as calculating the volume of casting work. In addition, he was also given the freedom to learn how various tools are used by workers in the field of construction projects where internships are held. The following is an excerpt from a statement from one of the interns: "During the internship I was constantly given opportunities by the field team or with those in the office to learn many things that happened in the project. Such as the calculation of various volumes that will be done for casting, etc., in addition I am given the freedom to learn in various tools."

Students recounted an incident during an internship activity where intern students felt they had the opportunity and were able to determine goals or make decisions freely. In this case, he said that he has made many decisions that can be taken in the field, such as decisions in the use of tools. He added that in this case he used the waterpass tool to do leveling loan marking work and used the total station tool to measure stake out on column axles, stakes, and do column axle loan marking. The following is an excerpt of a statement from an intern student: "In this case I get many

decisions that I can take in the field such as in the use of tools in the field. In this case, I use the waterpass tool to mark leveling loans and use the total station tool to measure stake outs on column axles, stakes, and mark column axle loans."

Students shared their impressions/experiences about the social environment of the internship (both the environment in the project and on campus) has been supportive in terms of learning and completing assignments. Students participating in the internship feel that the social environment in the campus environment is very supportive in learning and completing assignments. In this case, he said that in lectures he had many friends to discuss and cooperate with, if there was a task, it made it easier for him to complete the task. In the project environment, the student said that there were interns and field mentors who helped him to continue learning. The following is an excerpt of a statement from an intern student: "In this case I get many decisions that I can take in the field such as in the use of tools in the field. In this case, I use the waterpass tool to mark leveling loans and use the total station tool to measure stake outs on column axles, stakes, and mark column axle loans."

Students shared their impressions/experiences about the social environment of the internship (both the environment in the project and on campus) has been supportive in terms of learning and completing assignments. Students participating in the internship feel that the social environment in the campus environment is very supportive in learning and completing assignments. In this case, he said that in lectures he had many friends to discuss and cooperate with, if there was a task, it made it easier for him to complete the task. In the project environment, the student said that there were interns and field mentors who helped him to continue learning. The following is an excerpt of a statement from an intern student: "In this case I get many decisions that I can take in the field such as in the use of tools in the field. In this case, I use the waterpass tool to mark leveling loans and use the total station tool to measure stake outs on column axles, stakes, and mark column axle loans."

Students shared their opinions/impressions about the skills or knowledge that improved the most after going through the process of internship activities. Students participating in the internship felt that they had experienced the greatest improvement, he told about the increase in skills obtained, namely using various tools in the field. In addition, students participating in the internship also said that this had not been obtained when students were still in lectures on campus, besides that students also gained practical knowledge in calculating the volume in the project. The following is an excerpt of a statement from an intern student: "When I did an internship, the improvement that I thought was my skill in using various tools in the field, this was something I did not get when I was in college on campus. In addition, I also gained practical knowledge in calculating the volume in the project."

Students recounted several incidents during the internship when receiving feedback or criticism, suggestions from supervisors in the project field. Students participating in the internship received feedback or criticism suggestions from the supervisor in the project, he said that when in the process of learning to use the tools in the project field, he received criticism from the project supervisor to understand the good and effective use of tools. The following is an excerpt of a statement from an intern student: "When I was in the process of learning to use tools, I kept getting criticism from my supervisor and it had a great impact on me to understand the use of good and effective tools."

Students participating in the internship convey their impressions/feelings/thoughts about feedback/criticism/suggestions and this affects students in terms of motivation and confidence to be more involved in internship activities. Students participating in the internship expressed their feelings when they received criticism/suggestions from mentors, they immediately practiced the suggestions/criticisms because it was very helpful in understanding the use of tools properly, correctly and efficiently. The following is an excerpt of a statement from an intern student: "When I got the advice from my mentor, I immediately put it into practice because the criticism and advice really helped me in understanding the use of the tool properly".

Students told about things that were initially difficult to do/understand in the early days of the internship but became easy after undergoing activities during the internship. Students participating in the internship felt difficulties at the beginning of the internship. He told about the difficulties he experienced when he got the assignment to calculate the volume, but during the internship he got insight from mentors in the field about calculating volume practically in the project. In addition, intern students also feel difficulties in learning the use of tools from the beginning of the internship and continue to get advice and criticism from supervisors in the construction project field which can make intern students to more quickly understand the use of tools used by workers in the construction project area of internship placement. The following is an excerpt of a statement from an intern student: "During the internship when I got the assignment to do volume calculations I felt difficulties because what I used was the knowledge I got while in lectures, but during the internship I got inspiration from my mentor in the field about practical calculations in the project. In addition, I also felt the difficulty when I was just learning to use the tool from the beginning of the internship and continued to get critical advice from my supervisor that could make me understand faster."

Intern students share their impressions/opinions about experiences that can affect their confidence/self-confidence in competencies/abilities in the field of SIPI Engineering. The intern students said that the experience gained during the internship was initially that the intern students could not use measuring instruments in the field, eventually it became possible, which made the experience and abilities of the intern students increase. These skills are very useful for the world of work in the field of civil engineering in the future. The following is an excerpt of a statement from an intern student: "At the time of the internship which at the beginning could not use measuring instruments in the field and became able, it could make my experience and abilities increase, because it is very useful for the world of civil engineering work later."

4. Conclusion

- 1) Students are quite free to choose/control situations/matters related to the implementation of tasks/projects during internships.
- 2) Students have the opportunity and are able to determine goals or make decisions freely.
- 3) The social environment of the internship (both the environment in the project and on campus) has supported students in terms of learning and completing tasks.
- 4) Students feel that certain skills or knowledge have increased because they have undergone the internship process.
- 5) Students receive feedback or criticism and suggestions from supervisors in the project.
- 6) This feedback affects students in terms of motivation and self-confidence to be more involved in internship activities.
- 7) There are things that are initially difficult to do/understand at the beginning of the internship but become easy after students undergo the internship.
- 8) Experiences during the internship affect students' confidence/self-belief in your competence/ability in the field of Civil Engineering.
- 9) Social interactions with supervisors in the field, supervisors in the project, and with group friends affect students' motivation to participate and be involved in activities or tasks in the internship project.
- 10) Students feel "connected" or familiar with the people in the internship project and also feel that they support you in doing your assignments.
- 11) The relationships formed between fellow interns and with the people in the internship project make students feel committed to the internship.
- 12) Students have a pleasant and satisfying personal experience during the internship and that satisfaction increases motivation in undergoing the internship.
- 13) There is a dynamic of suitability or compatibility between the student's personal desires and the purpose of the internship. This suitability increases motivation to do internship.

Acknowledgment. This study was partly funded by the Study Program of D4 Civil Engineering, Faculty of Vocational Studies, State University of Surabaya, Indonesia. We extend our gratitude to faculty and staff for their invaluable support and resources, which were essential to the completion of this study.

Disclosure of Interests. The authors have no competing interests to declare that are relevant to the content of this article.

References

- [1.] Liepmann, K. (2013). *Apprenticeship: An Enquirey into its Adequacy under Modern Conditions*. Routledge.
- [2.] Ainley, P., & Rainbird, H. (2014). *Apprenticeship: Towards a new paradigm of learning*. Routledge.
- [3.] Pratiwi, I., Rorong, A., & Rares, J. (2023). Pengaruh Implementasi Merdeka Belajar Kampus Merdeka Magang Terhadap Kompetensi Mahasiswa Jurusan Ilmu Administrasi Fakultas Ilmu Sosial dan Politik Universitas Sam Ratulangi. *Jurnal Administrasi Publik*, 9(1), 1-16.
- [4.] Fitriani, F., & Sabban, Y. A. (2023). Peningkatan Keterampilan Melalui Kegiatan Magang MBKM di Dinas Perhubungan Kabupaten Gowa. *Journal of Career Development*, 1(3).
- [5.] Tanjung, M. H. A. A., Harahap, N. B., Siboro, M. E., & Harahap, M. (2023). Program Magang Keahlian sebagai Sarana Praktik dan Peningkatan Kompetensi Mahasiswa di Bidang Penerbitan. *Indonesian Journal of Community Services*, 5(1), 1-11.
- [6.] Supriyanto, H., & Luailik, E. (2022). Peningkatan Kompetensi Melalui Program Magang (Studi Kasus di Perpustakaan UIN Sunan Ampel Surabaya). *AL Maktabah*, 7(1), 53-69.
- [7.] Aksa, A. F. (2023). Program Peningkatan Kemampuan Mahasiswa Menghadapi Dunia Kerja Melalui Kegiatan Magang di Kantor Imigrasi dan Koperasi Sangosay Atambua. *Jurnal Umum Pengabdian Masyarakat*, 2(4), 50-56.
- [8.] Mustari, A. M. I. (2021). Pengaruh pengalaman magang dan minat kerja terhadap kesiapan kerja (studi pada mahasiswa fakultas ekonomi dan bisnis universitas brawijaya). *Jurnal Ilmiah Mahasiswa FEB*, 9(2).
- [9.] Pambajeng, A. P., Sumartik, S., & Kumala, H. M. (2024). Pengaruh Pengalaman Magang, Motivasi Kerja, dan Soft Skill Terhadap Kesiapan Kerja Mahasiswa Dalam Memasuki Dunia Kerja. *Journal of Economic, Bussines and Accounting (COSTING)*, 7(2), 2864-2875.
- [10.] Reeve, J. (2016). A grand theory of motivation: Why not?. *Motivation and Emotion*, 40, 31-35.
- [11.] Finn, J. D., & Zimmer, K. S. (2012). Student engagement: What is it? Why does it matter?. In *Handbook of research on student engagement* (pp. 97-131). Boston, MA: Springer US.
- [12.] Ryan, R. M., & Deci, E. L. (2020). Intrinsic and extrinsic motivation from a self-determination theory perspective: Definitions, theory, practices, and future directions. *Contemporary educational psychology*, 61, 101860.
- [13.] Ryan, R. M., Deci, E. L., Vansteenkiste, M., & Soenens, B. (2021). Building a science of motivated persons: Self-determination theory's empirical approach to human experience and the regulation of behavior. *Motivation Science*, 7(2), 97.
- [14.] Leenknecht, M. J., Snijders, I., Wijnia, L., Rikers, R. M., & Loyens, S. M. (2023). Building relationships in higher education to support students' motivation. *Teaching in Higher Education*, 28(3), 632-653.
- [15.] Ryan, R. M., & Deci, E. L. (2024). Self-determination theory. In *Encyclopedia of quality of life and well-being research* (pp. 6229-6235). Cham: Springer International Publishing.
- [16.] Bureau, J. S., Howard, J. L., Chong, J. X., & Guay, F. (2022). Pathways to student motivation: A meta-analysis of antecedents of autonomous and controlled motivations. *Review of Educational Research*, 92(1), 46-72.

- [17.] Filgona, J., Sakiyo, J., Gwany, D. M., & Okoronka, A. U. (2020). Motivation in learning. *Asian Journal of Education and social studies*, 10(4), 16-37.
- [18.] Sansone, C., & Tang, Y. (2021). Intrinsic and extrinsic motivation and self-determination theory. *Motivation science*, 7(2), 113.
- [19.] Flick, U. (2018). *An Introduction to Qualitative Research* (6th ed.). Sage Publications.
- [20.] Lieblich, A., Tuval-Mashiach, R., & Zilber, T. (1998). *Narrative Research: Reading, Analysis, and Interpretation*. Sage Publications.
- [21.] Mason, J., "Qualitative Researching (3rd ed.)" Sage Publications, 2018
- [22.] Flick, U., "An Introduction to Qualitative Research (5th ed.)" Sage Publications, 2014
- [23.] Creswell, J. W., "Qualitative Inquiry and Research Design: Choosing Among Five Approaches (3rd ed.)" Sage Publications, 2014.
- [24.] Bazeley, P., & Jackson, K. (2013). *Qualitative data analysis with NVivo* (2nd ed.). Sage Publications.
- [25.] Saldana, J. (2016). *The coding manual for qualitative researchers* (3rd ed.). Sage Publications.

Open Access This chapter is licensed under the terms of the Creative Commons Attribution-NonCommercial 4.0 International License (<http://creativecommons.org/licenses/by-nc/4.0/>), which permits any noncommercial use, sharing, adaptation, distribution and reproduction in any medium or format, as long as you give appropriate credit to the original author(s) and the source, provide a link to the Creative Commons license and indicate if changes were made.

The images or other third party material in this chapter are included in the chapter's Creative Commons license, unless indicated otherwise in a credit line to the material. If material is not included in the chapter's Creative Commons license and your intended use is not permitted by statutory regulation or exceeds the permitted use, you will need to obtain permission directly from the copyright holder.

