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# Constructing A New Professional Identity: My Journey as A Science Teacher Educator

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**ABSTRAK**

Dalam penelitian ini, saya akan membahas pengalaman pembelajaran profesional sebagai pendidik guru sains di salah satu universitas pendidikan guru di Indonesia. Dengan menggunakan metodologi studi diri sendiri (*self-study*), penelitian ini mengeksplorasi pengalaman saya dalam membangun identitas profesional baru sebagai pendidik guru sains. Penelitian ini merupakan bentuk autoetnografi yang diambil dari portofolio saya selama hampir tujuh tahun bekerja sebagai pendidik guru sains. Dengan menggunakan *Self-Determination Theory* sebagai kerangka teori, penelitian ini mengeksplorasi makna dari proses membangun identitas profesional baru dari seorang guru sains menjadi pendidik guru sains. Transisi ini ditandai oleh interaksi yang kompleks dengan rekan sejawat, guru (baik guru dalam jabatan maupun calon guru), serta lingkungan akademik universitas, yang menimbulkan ketegangan dan krisis identitas. Dari penelitian ini dapat disimpulkan bahwa penting untuk memahami konteks dan proses transisi dari guru sains ke pendidik guru sains. Selain itu, menjadi seorang pendidik guru sains memerlukan kemampuan yang melampaui seorang guru sains, karena pendidik guru harus mampu menjadi teladan dan mendemonstrasikan praktik pengajaran sains yang tepat bagi mahasiswa (baik dalam konteks sekolah maupun pendidikan tinggi), mengembangkan pembelajaran sains berbasis penelitian, serta aktif dalam penelitian pendidikan sains.

**ABSTRACT**

*In this study, I will discuss the professional learning experience as a science teacher educator at one of Indonesia's teacher education universities. Using a self-study methodology, this study explores my experience constructing a new professional identity as a science teacher educator. This study is an auto-ethnography taken from my portfolio of almost seven years working as a teacher educator. Using the self-determination theory as a framework, this study explores the meaning of constructing a new professional identity from a science teacher to a science teacher educator. This transition is characterized by complex interactions with colleagues, teachers (in-service and pre-service teachers), and the university academic environment, which creates tension and an identity crisis. From this study, it can be argued that it is essential to understand the context and process of transition from science teacher to science teacher educator. In addition, being a science teacher educator requires abilities that exceed that of a science teacher. It is because a teacher educator needs to model and demonstrate proper science teaching for students (in the context of school and higher education), develop research-based science teaching, and be active in science education research.*

## 1. INTRODUCTION

In this article, I will discuss the professional learning experience as a science teacher educator at one of Indonesia's teacher education universities. Science teacher educator is a job that I have been doing since 2015. A job that I entered by accident. Even though I have degrees in science education, I never thought I would work at a university. Working as a science teacher was a job that was always on my mind when I entered the teacher education program at the university.

The story began when I graduated with my master's degree in education. One of my friends informed me that there was a job vacancy to become a science teacher educator at the university where I received my master's degree. In Indonesia, the minimum requirement to become a science teacher educator is to have a master's degree. I took this opportunity as a trial and error because I realized that becoming a science teacher educator was very difficult and competitive. This is because teacher educators' status is government employees. Nevertheless, I tried registering and participating in each selection process, and I passed the selection and was accepted to work as a science teacher educator.

Using Self-Determination Theory (SDT) (Deci & Ryan, 2013), I will explore how my experiences and professional learning as a science teacher educator transform my professional identity. SDT as a framework was employed to discuss my experience as a science teacher educator. Although subjective, it is important to interpret this transformation in my professional identity to provide an overview of the science teacher educator profession, how to deal with it, and how to survive to meet the profession's demands in university settings.

SDT argues that the internal perception of volition motivates individuals to take action (Deci & Ryan, 2013). In this case, I argued that my motivation heavily influences everything I do in this job and drives me to commit to the job. However, there are also external and internal factors that influence my motivation. The interaction between the two is the realm of SDT. SDT explains that when a person has determination, he can control himself to make decisions and think about the consequences (Deci & Ryan, 2013). Therefore, as analogy, SDT places its framework like a driver; it makes the person responsible for anything that happens to the vehicle they are driving.

The research indicates that someone with high determination is associated with positive outcomes (Deci & Ryan, 2013). SDT consists of three needs components: autonomy, competence, and relatedness, which are argued to determine how a person is involved and committed to achieving something (Deci & Ryan, 2013). Autonomy is the ability to control yourself by making your own decisions independently and, in this case, being able to make decisions in carrying out work as a science teacher educator, for example, choosing a teaching method to be carried out in a class. Competence describes a person with sufficient qualities to perform specific tasks through knowledge, judgment, skills, and capabilities—for example, a science teacher educator masters course content or educational research methods. At the same time, relatedness is the ability to feel a sense of attachment and belonging among others. Relatedness involves feelings of closeness and belonging to a social group. For example, a science teacher educator joins a teaching team or research project. The three needs will determine whether a person continues to engage or terminate his goals. People can become self-determined when their needs for competence, relatedness, and autonomy are fulfilled (Deci & Ryan, 2013).

## 2. METHOD

This study is a self-study from my autoethnography portfolio during my seven years as a science teacher educator. Although subjective, I try to describe and formulate a picture of the process of changing professional identity using personal artifacts in the form of a portfolio by placing these artifacts in the existing literature (Williams & Ritter, 2010). In my university, every semester, each teacher educator must report the activities carried out for one semester to the university system. The university uses this report to monitor employee progress and performance. In the report, four main components must be reported: education, research, community services, and supporting activities. The educational component is teaching activities and other activities that are teaching in

nature. Research is a research activity carried out; community service is an activity that is carried out as our contribution to society or is a dissemination of thoughts from university to real life context, while supporting activities are academic activities that are outside the three categories but still contribute to academic life.

I am using self-study because it helps teacher educators understand their profession while being a data source for research and upholding the identity as academics (Loughran, 2014; Swennen & Bates, 2010). Using the self-determination theory framework, I grouped the activities in the report into the self-determination theory components: autonomy, competence, and relatedness. From these categories, I trace the changes in my professional identity as a teacher educator from the changes in my activities.

## 3. RESULT AND DISCUSSION

My involvement in science teacher education, especially biology teacher education, started when I took my undergraduate program majoring in biology education. The program is intended to prepare biology teachers for junior and senior high schools. The biology education program is a four-year program. Starting from my second year of my study, I had the opportunity to become a practicum assistant in several courses. Becoming a course assistant requires good grades in the same subject and passing the selection. This activity is enjoyable because it can help juniors with courses. I also have the opportunity to sharpen my knowledge in these courses. I think that by teaching others, my understanding will be even better. During my undergraduate study, I was a practicum assistant for several courses such as Botany, Zoology, Human Anatomy and Physiology, Ecology, and Teaching Media.

I also learned how my lecturers work as teacher educators when I became their assistant. I can see the differences between my lecturers regarding how to become a teacher educator, including how they conduct teaching and research. There are those I made as examples, and there are also those I avoid. For that, I thank you my lecturers who have inspired and provided examples regarding the work of science teacher educators. But until this time, I never thought I would work at a university like them.

After I graduated, I worked as a biology teacher at a vocational high school through a program organized by my university. After completing this program, I worked for a private company in a coal mining company as a field officer to survey schools' conditions around the mining area. After that, I continued my master's studies in a biology education program at the same university with a government scholarship. While studying, I also worked as a private teacher at a high school. Apart from that, I often visit schools as a lecturer assistant in teacher competence improvement programs through lesson study. This program is a collaborative program between several schools and my university. Finally, after graduating from a master's degree, I applied to work as a lecturer in the undergraduate education program through the national selection process and became a science teacher educator with the status of a government employee.

### *3.1. I Am a Confident Teacher in Higher Education*

I was so confident doing the job. My educational background supports this job because I received an education to become a biology teacher. When I started working, I enjoyed the euphoria of working at a university because this profession is one of the most prestigious professions in my country. My focus in my early years on the job was to do my best in teaching to impress my students and colleagues.

My job feels very enjoyable because there are many exciting moments that occur in my class and interactions with colleagues who are also very supportive. My situation is supported by research findings that experience as a teacher is beneficial in teaching at universities compared to those with no teaching experience (Murray & Male, 2005; Newberry, 2014). Also, a supportive environment because my colleagues who are part of a teaching team also act as mentors who direct and provide feedback and reflection after I am allowed to teach individually. This helped me adapt as a science teacher educator because mentoring effectively improves the quality of teaching in higher education (Chitpin, 2011). Even though my environment is very supportive, my interactions with colleagues as a science teacher educator are not always smooth. My relationship is also filled with some conflict and tension (Braund, 2015; Carrillo & Baguley, 2011; Griffiths et al., 2014; Ritter et al., n.d.; Swennen & Bates, 2010; Williams & Ritter, 2010).

I enjoy the "Aha" moments from my students when I explain something they can understand and make sense of in my class. I'm hooked on this "Aha" moment. But getting that "Aha" moment was just one success out of many of my less successful classes. Connecting with young people is exciting and challenging because of their spontaneous and adventurous character. I keep looking for methods of teaching that will become my signature, and I keep trying various teaching methods in my class. Another challenge is that not all students like my character; some students don't get along with me.

Besides that, preparing for class with colleagues is also very fun. We designed every stage of our teaching and reflected on the strengths and weaknesses of each class we have done. The first years were lived with enthusiasm and confidence. I teach undergraduate students as a teaching assistant, but I have a chance to teach on my own. I have high morale and excitement in teaching undergraduate students because my previous experience as a high school teacher was beneficial in this job. In this phase, I think my professional identity is a teacher at university. I have not felt that I should teach about how to teach science.

For almost two years, I have been doing the same routine; from an education component, I was a teaching assistant in the following courses: Ecology and Environmental Sciences, General Biology, Introduction to Biotechnology, Plant and Animal Diversity, Integrated Sciences, and School Science. From the research component, I became a team member of education research focusing on science education led by my senior colleagues, our community service in the form of workshops at schools on improving science learning through technological innovation and learning methods, and my supporting activities, which generally I took the form of workshops and seminars to enrich my skills and competences.

At the same time, I also received a one-year induction program from the university in the first year of my career. This program focuses more on preparation to become an academic such as English language courses, scientific article writing, conference management, and research publications. No component in my induction was technical skills for teaching. The induction at my university was not a standardized program because my juniors and seniors had slightly different content on their induction, and some did not get an organized induction. Therefore, I argued there is little standardized induction program for the teacher educator profession; each institution has their way of inducing new teacher educators (Murray & Male, 2005). Meanwhile, the research indicates that an induction program is needed to provide an overview of the teacher educator profession for them to be able not only to master the content of scientific disciplines but also let them know how to teach it and how to live in the university environment which focuses on research work (Braund, 2015; Murray & Male, 2005).

In this phase, I have the determination to be a good teacher in university. This determination is supported by components of self-determination theory that are fulfilled. For example, autonomy, even though I am a teaching assistant, I was given the freedom in the teaching team to choose the teaching methods and learning activities that I want; in terms of competence, I feel confident that I have mastered science and pedagogy content and how to deliver it, and in terms of components of relatedness, I enjoy interacting with students especially when there is an "aha" moment in my class, even more, the environment of very supportive colleagues. This is a common satisfaction that teacher educators generally experience as study reported (Malm, 2020).

### *3.2. I Am a New Teacher of Teachers*

Entering the third year of my career, there has been no significant change in my routine in the education component, research, community service, and supporting activities. The only addition to the education component is that now I can run my own class and I was involved in teaching in the TPP program. It took almost three years for me to have my independent classes because there was a change in administration in the ministry where I worked, from the ministry of education transferred to the ministry of higher education and research. One involvement in TPP completely changed my view of this profession. This was a game-changer for me. TPP is a continuing education program for in-service teachers. I have to teach science content and teach science to in-service senior teachers. Some even have more than 20 years of experience as science teachers. I started not confident. I have little experience compared to the teachers I teach. These science teachers have high expectations that I can help them improve the quality of their teaching. They asked me to model appropriate learning activities. Not in the context of giving lectures but providing direct examples in conducting science lessons (Loughran, 2014).

I had moments when I questioned my professional identity and experienced discomfort and doubt. The assumption is that experiences at school can be transferred to university teaching. However, these are two different things because, at university, especially on this program, the students are adults, whereas, in my previous experience, I did not deal directly with adults. Research indicates that a different approach is needed for teaching pre-adults and adults through the andragogy approach (Beder & Darkenwald, 1982). Andragogy are the methods and principles used in adult education. I agree with Loughran's opinion that a teacher educator's job requires skills beyond just delivering teaching material about teaching or sharing experiences about teaching (Loughran, 2014).

TPP program opens a broader opportunity to help me understand the real science teaching in the school context. During this program, apart from teaching science teachers, I also work with mentor teachers in schools to observe these science teachers when they are teaching. I do not know yet how to deal and how to teach adults. Now, I am learning and aware of my professional identity as a teacher of teacher, including in-service and senior teacher. I realized as a science teacher educator, besides working with teachers. I also have to teach science directly to students at school. Direct experience in schools is significant for teacher educators to know how school teaching operates (Goodfellow & Sumsion, 2000).

In this phase, from a self-determination theory perspective, I am determined to understand teaching how to teach adult students. This happens because there is a component that I have not fulfilled, namely the component of competence; I have little experience teaching science at school. On the other hand, autonomy

is not a problem because I independently manage my class. And the relatedness component, I want to maintain a good relationship with the teachers in my class by meeting their expectations to improve their teaching skills.

I realized I was a selfish young person at that time. I must know more than the science teachers I teach regarding science content and teaching. This external situation pushed and drove me to study independently. The moral of this situation, supported by research, is that teacher educators need to have self-esteem, and a strong belief in their professional competence "teacher educators need the strength of their self-esteem and a strong belief in their professional competence to effectively manage vulnerability as an opportunity for professional development" (Vanassche & Kelchtermans, 2016, p. 363).

### *3.3. I Am the Amateur Researcher*

Regarding research activities, I only focused on being a teacher at university for almost the first three years of my career. During that time, I was involved in research but only as a team member. In the third year, the university promoted us, new teacher educators, to conduct independent research with special funds for novice researchers. As a result, I proposed some research proposals, and some of my proposals were funded by the university. The output of this research proposal is in the form of research reports, conference presentations, or publications in peer-reviewed journals.

At the same time, I have also been allowed to supervise undergraduate research. In my university, a graduate bachelor's degree must be pursued through research in the final year. This research was conducted for two semesters. The challenge at this stage is working and researching correctly with students. I felt that my research skills were insignificant in supervising students. I have only a few publications. Although my undergraduate and master's education was taken through research, my previous education program did not predominately prepare me to become a researcher because of what was to become a biology teacher at school. A condition that many studies have reported (Griffiths et al., 2010; Murray & Male, 2005; Newberry, 2014; Shteiman et al., 2010; Swennen & Bates, 2010; Williams & Ritter, 2010), many teacher educators have problems with identity and skills as a researcher (Czerniawski et al., 2017) and scientific writing and publications (Shteiman et al., 2010).

In this phase, the competent and related components have again become issues. Competently, my research experience is still lacking, and the research work that I produce is insignificant when compared to the research conducted by my colleagues. Regarding relatedness, I am starting to feel disconnected and away as part of academics. Because at the university, the number of published works is getting higher value than many teacher education classes do. The number of publications and research determines the award for teacher educator performance (Griffiths et al., 2010; Loughran, 2014; Mayer et al., 2011).

Background and previous experience greatly influence the values prioritized by teacher educators (Loughran, 2014; Murray & Male, 2005). Those with a teaching background value teaching more than research. Vice versa, those from research backgrounds place more value on research than teaching. This situation creates dualism on my campus. And those who have more research and publications have more substantial political power in determining campus policy. It is argued that the quality of teacher education in universities settings is reduced and does not become a priority because teacher educators tend to focus more on conducting research and publications (Mayer et al., 2011). Besides, spending much time preparing for

doing teacher education is considered less worthwhile than publications for career advancement. But for me, I value both.

### *3.4. Here I Am Now: Trying To Be A Science Teacher Educator*

Over time, after almost five years, the professional identity of this job confused me. Even though research indicates that it takes 2 to 3 years to establish a teacher educator's professional identity (Murray & Male, 2005), that didn't happen to me. In the following years, I was invited to be involved in many other matters related to education, such as writing modules for teacher education, being a speaker in workshops on improving the quality of teacher learning, writing teacher certification exam questions, and revising the science education curriculum, teacher trainer, and journal reviewer. I think that most people believe this profession can do anything about education. I am "Mr of everything". If there is a keyword "Education," then I can do it.

In the 7th year of my career, I am pursuing a Ph.D. education. I chose to continue my studies abroad with the motivation that I would be exposed to higher research standards. During my Ph.D., I focused on how to do research properly. At the same time, I wanted to learn and compare the science teacher educators' professional identity in the country where I am doing my Ph.D. I am into this profession; even for my Ph.D. project, I explore the science teacher educators' perceptions of their professional roles. With my project, I hope to understand more about the nature of the science teacher educator profession. I also hope that my project will impact the science teacher educator profession. In my opinion, up to this moment, this profession is a hidden profession. The profession was hidden behind the university identity. This condition makes this profession less attention because the university is considered a source of knowledge. When compared to teacher professional development programs, for example, the quantity is much higher compared to teacher educator professional development programs.

My journey of constructing a professional identity as a science teacher educator is still like going through a rocky road (Wood & Borg, 2010). But my journey was helped by a supportive work environment. My seniors guide me on how to do this job, my colleagues support each other, and my students are challenging to teach. In addition, during my Ph.D., my supervisors helped me be more confident in internalizing my professional identity as a science teacher educator and researcher, especially concerning doing proper educational research.

As a science teacher, I try to interpret science education using my lens and experience. Science education is not just teaching science content, technical skills in teaching, and science education research. I feel responsible for community science literacy. Therefore, as a science teacher educator, I have to educate science teachers to value science more deeply; science is part of life, and life can never be separated from science. I am no longer a university teacher, I don't know everything, so I decided to collaborate with teachers from this moment. Together with the teachers, I continue to learn together to prepare exciting and meaningful science lessons and recognize the characteristics of students and how students learn.

I realized that becoming a science teacher educator is a never-ending process. I realized this when I knew my professional identity. Then I see what I have to learn as an experienced learner. I am aware of the nature of this profession and find that it is a unique profession. The need to know personal goals is the core so teacher educators can continue to be committed to conceptualizing their professionalism (Vanassche &

Kelchtermans, 2016). Developing a professional identity involves many components, including the choice of pedagogical methods in teaching, knowledge development through research, and administrative responsibility (Malm, 2020). Lastly, the university, as a teacher education institution, needs to have a follow-up program to maintain the professionalism of the teacher educator. If not, the teacher educator profession will be stuck in stagnant expertise, especially in everyday lecturing and research routines, while student learning at school is constantly changing (Hashim & Ahmad, 2013). Using the self-determination view, I value this profession's very flexible component of autonomy; I can make my own decision. The concern is on the competency and related components. The competence to be a science teacher educator goes beyond just being a teacher in higher education but also being a researcher, practitioner, and para-policy maker. Regarding relatedness, the university's identity as a place for producing knowledge and research is positively very supportive of innovating science education, as long as it does not reduce its primary role as the party responsible for producing quality science teachers in the future.

## 4. CONCLUSION

This self-study taught me the importance of understanding my professional identity as a science teacher educator. In the first years of my career, with very high self-confidence, I thought that being a science teacher educator is an educator who has to do good teaching. But, over time, I realized something more than just mastering and delivering the content. Once I realized this, the following years were filled with worry and uncertainty about my professional identity. Then, this situation became increasingly complex with the higher demands to conduct research and publications. Research and publications are professional identities as a scientist at a university.

I realized that my professional development is closely related to my professional identity. Therefore, when I can interpret my professional identity, I know what I have to do. Of course, this self-study is very subjective, but I hope from my experience, there will be takeaway lessons for other science teacher educators. Furthermore, in the context of teacher education institutions, my journey to becoming a science teacher educator can be used as a source of information to better prepare teacher educators because the transition from a teacher-to-teacher educator is not always smooth due to the different natures of the two professions.

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