

Indonesian doctoral students' negotiation of knowledge production in their doctoral research: A photovoice study

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Doctoral supervision has been deemed as a site of power, knowledge production, and an effort in career progression, mediated by doctoral students and their supervisors. Extensive studies have looked at these interactions from multiple angles. Although research into doctoral supervision has been extensively documented, there lies a paucity of studies exploring the voices of doctoral students with regard to knowledge production during doctoral supervision using photovoice artefacts. To fill this lacuna, the current photovoice study aims to inspect doctoral students' voices in perceiving the process of negotiating knowledge with their supervisors during their doctoral supervision. A total of five Indonesian international students enrolled in different universities in Australia, the United Kingdom, Brunei Darussalam, and Taiwan reflected on their experiences with doctoral supervision. The analysis of participants' photovoice revealed two main supervisory styles, namely co-constructed and superior or dominating, that determined the nature of negotiations of knowledge and showed whose legitimised voices were accommodated in doctoral supervision. Our findings suggest that socio-culturally constructed doctoral supervision and power relations need to be better addressed in the negotiations of knowledge production in doctoral supervision. These findings imply that doctoral education should seek a deep understanding of doctoral students' socio-cultural elements and enact this into doctoral program design.

Introduction

In the last decades, doctoral supervision has been acknowledged as an intricate journey of supervisors and doctoral students, which yields specific challenges in supervision processes. Supervision relationship along with supervisory style is one of the crucial challenges that contributes to the success of doctoral supervision. Research on doctoral supervision has focused the broad topic of supervision relationships upon supervisory styles which define supervisors' roles (e.g., Bartlett & Mercer, 2000; Benmore, 2016; Gurr, 2010; Halse & Bansel, 2012; Lee, 2008); varieties of purposes and pedagogy of supervision (e.g., Akerlind & McAlpine, 2015; Franke & Arvidsson, 2011; Friedrich-Nel & Kinnon, 2017; Grant & McKinley, 2011; Halse & Malfroy, 2010); and doctoral supervision capturing knowledge production (e.g., Malfroy & Yates, 2003).

The roles of supervisors in doctoral supervision can be viewed from an “apprenticeship paradigm” perspective (Halse & Bansel, 2012, p. 378), which regulates the positions of supervisors in managing the process of knowledge production. A continuum of supervisors’ intervention has been highlighted to portray how supervisors are supposed to position themselves within the structure of supervision relationship. Supervisors are advised to manage a tension or a balance to what extent they have to provide direction or intervention for facilitating doctoral students to gain autonomous learning, confidence and originality, so as to enable them to grow into independent scholars (Benmore, 2016; Gurr, 2010; Halse & Bansel, 2012; Lee, 2008). Research highlighting varieties of purposes and pedagogy by supervisors has revealed how supervisors manage the process of knowledge production. Investigation of a major purpose, enabling students to become innovative and independent researchers (Akerlind & McAlpine, 2015), sheds light on supervisors’ supervisory pedagogy. This major purpose is realised in the desired outcome of doctoral supervision, which is the kind of new knowledge that resides in the growth of a sense of academic achievement and identity, that fosters changes resulting from doctoral students’ contextualised research (Green & Lee, 1999; Malfroy & Yates, 2003).

To put the purpose and outcome of doctoral supervision into practice and as career progression, it was found that supervisors have upheld their critical role by opting for varied strategies in managing intellectual engagement in doctoral supervision. Such strategies include questioning and challenging students to construct their own ideas and stimulating them to figure out options (Akerlind & McAlpine, 2015), encouraging students to develop logic and construct arguments that are strongly supported by the literature (Friedrich-Nel & Kinnon, 2017); helping students to map their goals and plans to complete the milestones of their doctoral study (Friedrich-Nel & Kinnon, 2017; Grant & McKinley, 2011); engaging doctoral students in research practice-oriented supervision and research relation-oriented supervision (Franke & Arvidsson, 2011); and establishing a “learning alliance” of research and scholarship engagement by extending an enjoyable and rewarding yet critical discussion (Halse & Malfroy, 2010, p. 83).

Although the topic of intellectual engagement by supervisors in doctoral supervision has been explored extensively in the literature, little is known about the process of doctoral supervision in terms of negotiation of knowledge production by doctoral students, particularly in the context facing Indonesian doctoral students. This void resonated in Bastalich’s (2017) argument that the discussion about the essential role of supervisors does not take into account doctoral students’ perspectives. The present study looks at doctoral students’ perspectives of their doctoral supervision using photographs as living artefacts.

The research question addressed in the present study is as follows:

What is the extent of doctoral students’ negotiation of knowledge production with their supervisors during the doctoral supervision?

Theoretical underpinnings

In response to the research question, this study is anchored within an academic discourse socialisation lens which informs the enactment of doctoral supervision and knowledge negotiation. This section discusses academic discourse socialisation as a perspective in understanding doctoral supervision, knowledge production and higher education, and knowledge production in doctoral supervision.

Academic discourse socialisation and doctoral supervision

Academic discourse socialisation has been used as a theoretical framework for understanding academics' negotiations of identity, power, knowledge, and experiences between "Newcomers and "Oldtimers". Specifically, this idea is anchored to capture how those groups of individuals are socialised into knowledge construction and how they attain legitimacy and competency in the academic communities (Ochs & Schieffelin, 1984; Schieffelin & Ochs, 1986). In the context of doctoral supervision, academic discourse socialisation is useful in looking at how doctoral students and their supervisors negotiate knowledge production. Doctoral students are deemed as newcomers and supervisors are seen as the old-timers in the supervisory relationships. Such a relationship brings forward socialisation enacted by the former in order to attain a shared understanding with the latter. Therefore, our current study is suited to the academic discourse socialisation framework as it explores how knowledge is negotiated in doctoral supervision.

To date, a growing body of literature on academic discourse socialisation and doctoral education has been widely documented. Anderson (2021), for example, examined how PhD students socialised into written feedback with their supervisors. Employing a language socialisation perspective, the study revealed that feedback enhanced doctoral students' academic identities and widened their socialisation in the disciplinary communities. Spies et al (2021) explored socialisation of English as an additional language (EAL) doctoral students into scholarly writing. The study specifically focused on the impact of the writing feedback group on the participants' writing for publication skills. Findings suggested three salient themes: (a) the group serves as a social, collegial, and supportive space that shapes the doctoral students' writing skills for scholarly publication; (b) the ongoing participation helps improve the doctoral students' persistence in scholarly writing; and (c) the feedback is an appreciative notion in the scholarly writing process. Hadizadeh and Vefali's (2021) qualitative study explored oral academic discourse socialisation experiences of doctoral students at an English-medium tertiary institution in Northern Cyprus. Relying on data from an audio-recording of a graduate class oral academic discourse and interviews, the study uncovered that the participants negotiated knowledge, identity, and agency. The analysis also showcased that the participants' academic socialisation helped enhance their academic learning and competence.

Although much research on doctoral students' socialisation has been documented as part of knowledge negotiation and career progression, our current study differs from the previous research studies in two angles. First, this study employs academic discourse socialisation as a lens for understanding doctoral students' knowledge production. This

methodological tool examines the relationship of knowledge production between doctoral students as newcomers and supervisors as old-timers. Such a relationship may be affected by varied factors, socially and culturally. Second, the study utilises *Photovoice* as a method that showcases the doctoral students' lived experiences using photos as artifacts. While previous studies mostly employed a general qualitative research design, our study contributes to the development of photovoice as an emerging design in doctoral research.

Knowledge production and higher education

In the landscape of knowledge society, universities play a significant role as institutions that produce and transfer knowledge politically and economically. Universally, universities are considered the only specialised institutions that concentrate on their core business in knowledge production, reproduction, and dissemination (Cloete & Bunting, 2013). The seminal conception of knowledge production is rooted in the work of Michel Serres, a French post-structuralist philosopher, who has shaped academic knowledge formation and production (Morris, 2019). Drawing from the tradition of Western philosophy, Serres' notion of knowledge production is in resonance with educationists' scholarship in researching empirical studies and producing new empirical knowledge explored from their own studies to excel in their own respective fields (Morris, 2019; Pinar, 2011). This cycle is translated into "both the production (research) and the reproduction (transmission) of knowledge" (Peters, 1996, p. 96). Therefore, knowledge production and universities are universally indispensable to realising sustainable development for two reasons (Cloete & Bunting, 2013).

Firstly, a beneficial contribution of knowledge to sustainable development resides in the long-term knowledge generative capacity and career progression. Secondly, as the core business of universities is knowledge and career progression, they are still considered the best producers of self-renewing knowledge-producing capacity. The salient and tangible evidence of this matter is the never-ending production of research-based PhDs. As such, knowledge production is the gateway in which relations and connections meet; the venue where ideas and concepts intersect (Morris, 2019). The notion of knowledge production in our study is grounded on the concept of knowledge production in higher education as the cycle of the production and reproduction of new empirical knowledge, within which doctoral students' and supervisors' minds meet.

Channelling to the essential role of knowledge production, the role of universities is not only to create doctoral students as skilled acolytes, but also be responsible for shaping graduates who act as leaders, knowledge producers, and problem solvers (Harvey & Knight, 1996). To do so, universities should nurture the process of new knowledge production or reflexive action. It is, therefore, crucial for universities to exercise knowledge transformation by connecting problems to their ways to approach problems and doing continuous and dynamic knowledge explorations to respond to an unimaginable future (Waghid, 2002). As such, empowering those who are involved in knowledge development in universities is needed to develop students' and educators' powerful critical abilities, so that they become self-determined or rational and reflexive (Waghid, 2002).

Knowledge production in doctoral supervision

The discourse of knowledge production in doctoral supervision has been addressed by Bastalich (2017), highlighting key aspects of supervision influencing knowledge production in the traditional paradigm. There exists the role of distant masters with sole responsibility for quality outcomes and the highly influential psychological lens towards research education and innovation. This traditional perspective has led to the conception that “the production of new knowledge within the doctorate is seen to arise from an individual developmental capacity, best fostered within interpersonal relationships, among which supervision is primary” (Bastalich, 2017, p. 2). As a result, “doctoral research and scholarship are conceptualised in doing, being, becoming and relational terms; innovation seeming to arise from isolated individual minds”. However, Bastalich also argued that this alone is not enough. A forward striding towards employing sociological perspectives in a doctoral setting is worth noting. Knowledge production in terms of innovation and invention is context-driven and defined greatly through content learning, or something that is learned.

More specific facets shaping knowledge production are centred around the connection of supervisors, doctoral students, and knowledge (Lusted, 1986). Lusted further delineated that knowledge production is not only produced through research and scholarship but is also determined by the dynamic interaction between supervisors and students in doctoral supervision (Lusted, 1986). In conjunction with the aforementioned facets, Bastalich (2017) explored the key issues surrounding knowledge production in doctoral supervision such as supervisors' management and interpersonal styles, delicately balanced norms, and the centrality role of supervisors. The exploration concluded that the essential tenet within knowledge production in doctoral supervision lies in the management of supervision practices. Conflicts that occurred in the process of reproducing new knowledge in doctoral supervision should be managed to maintain independent self and thoughts.

In addition to the relationship dimension of knowledge production in doctoral supervision and career progression, the dimension of knowledge itself is documented (Bocchi & Cianci, 2012). Knowing what content is insufficient, alone, and therefore, knowing how (how and why a particular knowledge emerges) is also significant in knowledge production because knowing how becomes a reflection of the dynamics of knowledge construction. Bocchi and Cianci (2012) further highlighted that in the construction of new knowledge, the role of physical, and emotional components and multiple contexts such as cultural, ideological, geographical, and historical contexts from which knowledge emerges, are very significant. Hence, inter-subjectivity of knowledge construction is human context-bound. The relationships and the strong interdependence between knowledge and contexts provide a better understanding of the uniqueness of the emergence process of new forms of knowledge. Such new forms of knowledge are transcended into what is so-called a sense of achievement and a new academic identity that drives knowledge in action (Malfroy & Yates, 2003).

Knowledge production entails power, and career progression, and is highly political (Morris, 2019). A crucial aspect of determining whose voices are worth following in

doctoral supervision relates to the mastering language used as a medium of learning instruction that will give access to scientific knowledge construction and, in turn, it could significantly contribute to the research development (Pinto & Araújo e Sá, 2020). The status of English as the legitimised language to access scientific knowledge and to disseminate knowledge production (Pinto & Araújo e Sá, 2020) corroborates the epistemological hegemony of the educational institutions in which English is used as the medium of instruction and communication, and from which knowledge elites are considered as the only legitimate producers of knowledge. Such hegemony leads to the practice of epistemic violence (Kidman et al., 2017), which will undoubtedly be bolstering inequalities in the construction and legitimisation of academic knowledge (Canagarajah 2002).

Another crucial aspect that potentially influences the cycle of producing and reproducing new empirical knowledge in doctoral supervision is an asymmetrical power relationship, including the hegemonic of supervisor's voice (see Wisker, 2012). As Löfström and Pyhältö (2014; 2015) found out in their study, such an asymmetrical power relationship can be evident in the misuse of power or an unequal power distribution, such as supervisors make use of their position to intrude their views in the research results or article texts. This can happen because, at one point, supervisors may feel that not only do they have a strong position, but also contribute significantly to their doctoral students' research. Therefore, by positioning their seniority in the field, supervisors could justify ownership or authorship. At another point, in many cases, doctoral students may have insufficient power to complain or object to such a circumstance.

Besides knowledge production that emerged in doctoral students' supervision processes, knowledge dissemination enacted by doctoral students should also have a place. Disseminating knowledge from doctoral studies can be enacted through a variety of academic programs such as conference participation (Haus, 2021), regular research discussions (Webber et al., 2022), and publishing activities (Horta & Li, 2023). Knowledge production and knowledge dissemination should become inseparable in doctoral supervision processes and doctoral students need to envision such notions to enable them to grow professionally as emerging scholars.

The study

Photovoice

This present study employed photovoice as documentary photography (Sutton-Brown, 2014; Wang & Burris, 1997) to capture and document the individuals' lives of the recruited participants, namely Indonesian international doctoral students and their negotiations of knowledge production during their doctoral supervision. Globally, much literature has used both photovoice and photo-elicitation interchangeably as qualitative methods for understanding research participants' narratives from photography perspectives (Shaw, 2021). However, for the sake of consistency in the present study, we used photovoice as an embedded research design to describe the participants' knowledge negotiations in their doctoral supervision. This aligns with what is central to photovoice as

a research methodology that it critically advocates participants to document and interpret their lived experiences as captured in their photographs (Wang et al., 2004), and to participate in negotiating certain issues through their photographs (Fitzgibbon & Stengel, 2018). The version of photovoice as documentary photography has been much utilised to explore various university students' experiences and reflections ranging from undergraduate to graduate students (e.g., Lorusso et al., 2020; Minthorn & Marsh, 2016; Wells & Hunt, 2021). However, photovoice studies probing doctoral students' experiences in negotiations of knowledge production during supervision sessions have been limited. With this in mind, our study explores an under-researched area of photovoice as documentary photography focusing on international doctoral students and their negotiations of knowledge production during supervision.

Researchers-as-participants

Employing an analogous orientation that participants are as important as researchers in photovoice research (Wells & Hunt, 2021) and that students can be both researchers and participants (Wass et al., 2020), of the five authors, two adopted the roles of researchers as (doctoral) students and participants in this study. This orientation of researchers-participants allows the researchers-participants to be meaningfully involved (Wass et al., 2020). At the time of this study, two authors were completing their dissertations and had the firsthand experience of going through a laborious journey of negotiating their knowledge production.

Participant recruitment

In addition to the two researchers-as-participants, other doctoral student-participants were recruited by sending online invitations to the researchers' professional and social networks. Three other students who were completing their dissertations agreed to participate in the study. The negotiation process resumed as the prospective participants were briefed about the study.

Table 1: Participants' demographic data (N=5)

Participant	Age	Gender	Major	Country of doctoral studies
IIS1	44	M	Applied linguistics	United Kingdom
IIS2	39	F	English literature	Brunei Darussalam
IIS3	43	F	Applied linguistics	Australia
IIS4	38	F	Applied linguistics	Australia
IIS5	33	F	Computer science/ Intelligent systems	Taiwan

All of the participants were Indonesians working as lecturers in several different Indonesian higher education institutions and enrolled as international students in different universities in Australia, the United Kingdom, Brunei Darussalam, and Taiwan. The participants' pseudonyms and details are given in Table 1.

Data collection

Following the objective of the study, i.e. to capture the process of negotiations of knowledge production under international doctoral students' supervision, the recruited participants were asked to provide original photos and their captions with their own devices or to compile their collection of photographs that they took during their doctoral study. Relevant photos were captured under the themes of negotiations of knowledge production that best reflected their experiences of doctoral supervisions. When making captions, the participants were guided by the concept of SHOWeD (What do you **See** here? What is really **H**appening? How does this relate to **O**ur lives? **W**hy does this situation exist? What can we **D**o about it?) developed by Wang and Burris (1997) that helped them to explore and narrate the experiences of negotiations of knowledge that they had during their doctoral supervisions. At this phase, both photos and captions were taken into account as pivotal data. During the briefing, the participants and researcher-participants were expected to engage in a three-part reflection process: selecting photographs, contextualising the photos, and codifying the photos individually as required in a photovoice study (Wang & Burris, 1997; Wells & Hunt, 2021). Consequently, the photovoice data collection became the platform of "contextualising", i.e. telling stories about what the photographs mean, and "codifying", i.e. identifying those issues, themes, or theories that emerged from the images (Wang & Burris, 1997, p. 380; Wells & Hunt, 2021).

Data analysis

The collected data, in the forms of photographs and captions, were contextualised, codified, and subjected to thematic analysis to reflect the participants' negotiations of knowledge production. The fundamental thematic analysis that is originally "a method for identifying, analysing, and reporting patterns (theme) within data" was employed to analyse the data (Braun & Clarke, 2006, p. 79). Further, the themes resulting from the analysis were derived from "patterns of shared meaning underpinned or united by a core concept", not merely from "the domain summary themes" that could be obviously seen from the data (Braun & Clarke, 2019, p. 593). To achieve the legitimate shared-meaning themes, as suggested by Braun and Clarke (2019), the themes emerged from our sensitivity and interpretations towards the participants' shared experiences from the photos and their captions. The themes followed the participants' narration prior to and whilst in doctoral supervision. The themes were then classified and further discussed under the discourse of the negotiations of knowledge production. Overall, the photographs and captions were selected, codified and contextualised within the picture-takers' interpretations as represented in the participants' captions (Enright & O'Sullivan, 2012; Lorusso et al., 2020).

Findings

Themed findings of this study are detailed below into four discussions: process of knowledge negotiation; supervisory style; doctoral students' expectations; and doctoral students' attitudes and reflections, illustrated by ten photos and captions.

Process of knowledge negotiation: “ ... we have totally different perceptions/understandings about research.” vs “I see these opportunities as his countless support for me to expand my knowledge, my horizon.”

The negotiations of knowledge were often times uneasy and burdening, yet meaningful for the participants that they were unable to express them straightforwardly. The process of negotiations of knowledge ranges from the absence of negotiations, resulting from different understandings, to sharp and directive supervisions, and constructive and co-constructed negotiations.



Figure 1: Trees and branches - tangled and jumbled negotiations of knowledge (IIS2)



Figure 2: A sharp knife - sharp, directive, and one-sided knowledge transfer (IIS 1)

The sharp, directive, and one-sided process of negotiations of knowledge production was illustrated by IIS 1 as a spoon-feeding supervision rather than as an engaging discussion in which the student's and his supervisor's minds meet, as IIS 1 stated in his caption below.

... she always expressed her mind both directly and sharply. Although, it heard inconvenience, she kept doing it that way. For example, she would directly say which appropriate ideas and scholars I must have followed and which one must not. It was unlikely that the negotiation was happening and I admitted that it would be rather a spoon-feeding than a discussion (IIS 1).

IIS 1 visualised this kind of process into a sharp knife that represented his supervisor's straightforward and undebatable ideas, as shown in Figure 2.

Participants IIS 3 and IIS 4 shared photos to voice that the negotiations of knowledge could occur fruitfully and provided them with balanced spaces to discuss and exchange knowledge between them and their supervisors. The negotiations of knowledge built up

are constructive and fully co-constructed by both the participants and their supervisors. As shown in Figure 3, IIS 3 depicted her process of negotiations of knowledge production with her supervisor as a wide range of opportunities as symbolised by the various plants in the photo.



Figure 3: Various plants – opportunities in negotiations of knowledge (IIS 3)

IIS 3 viewed her intellectual engagement with her supervisor as opportunities to expand her knowledge and to co-construct knowledge, as she expressed below.

I see these opportunities as his countless support for me to expand my knowledge, my horizon. These opportunities mean knowledge can be (or even better) co-constructed together (IIS 3).

Similarly, as shown in Figure 4, IIS 4 confirmed that her successful presentation session of confirmation of candidature symbolised the fruitful and effective negotiations of knowledge between IIS 4 and her supervisors. IIS 4 added that the confirmation of candidature was meaningful as it was the moment of being acknowledged as a researcher in Indonesia's research standard where IIS 4 believed that her research was recognised for its urgency and potential contributions to the wider academic world.



Figure 4: Confirmation of candidature – result of fruitful and effective negotiations of knowledge (IIS 4)

As IIS 4 shared Figure 4, she confessed that “the knowledge was co-constructed, as without the guidance of my supervisors I would not be able to produce the piece of work that set the direction of my PhD journey”. IIS 4 seemed to extend a notion of reminder and awareness that such meaningful milestone cannot be achieved alone, without negotiations of knowledge co-constructed with her supervisors.

Supervisory style: “ ... my supervisor always gives me enough space to say anything” vs “ ... knowledge transfer was under my supervisor’s control.”

Co-constructed, partly constructed and superior supervisory styles emerged from the process of negotiations of knowledge production experienced by the students. As revealed by IIS 3 and IIS 4, their supervisors had been taking a balanced role. Not only did the supervisors provide intervention during supervision, they also encouraged the students to nurture their independence and critical thinking.

More specifically IIS 3, as visualised by Figure 5, expressed as follows.

Every time we have discussion in supervision meetings, my supervisor always gives me enough space to say anything about any ideas for my draft, as well as of other professional activities. I always hope that he can comment on my draft actually, but he usually opts to let me go on. He was only commenting when he thought it was necessary (IIS 3).



Figure 5: Sky for a bird - space for ideas exploration (IIS 3)

In line with IIS 3, IIS 4 expressed a similar voice as illustrated by Figure 6.

I remember them always questioning why I did what I did. When suggesting new perspectives, they would share their experiences as a researcher and a writer. They would suggest articles or books to read, not only theirs but also others. Then they would ask me in return what I think about it. Never once did they just tell me what I wanted to know. They would rather let me find references to self-help me understand or see the different theories or perspectives (IIS 4).

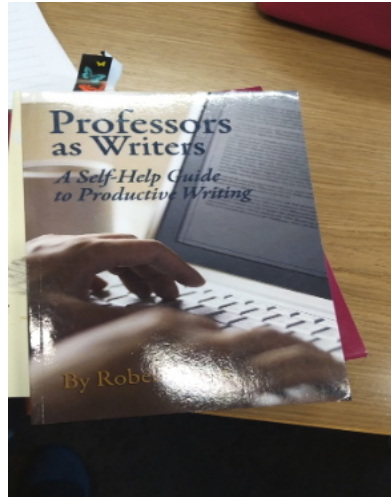


Figure 6: A self-help guide - self-exploration (IIS 4)

However, as experienced by IIS 2, there was a shift in supervisory style from an un-accommodating supervisor to a more accommodating one. IIS 2 reflected:

With my former supervisor, I mostly debated and asked more questions as I failed to understand what my former supervisor really meant. Unclear and limited knowledge given by my former supervisor hindered the smooth running of the knowledge transfer. Meanwhile, my current supervisor with better and clearer directions and explanations gradually guides me until I could finally submit my final thesis last year (IIS 2).

Different from the previous participants, IIS 1 mentioned that his supervisor demonstrated a superior supervisory style, as reflected in the following voice.

This white paint illustrated another fact of negotiating of knowledge transfer between my supervisor and me, that knowledge transfer was under my supervisor's control (IIS1).



Figure 7: Roundabout – supervisor's control (IIS 1)

Indeed, his supervisor gave him opportunities to express his own ideas. However, the reaction from his supervisor did not approve when his ideas did not satisfy her.

Likewise, IIS 5 revealed that all her three supervisors were very supportive and clear in giving assignments to her since the beginning of her PhD journey. IIS 5 chose a picture of three towers (Figure 8) to showcase her three supervisors' roles in supporting her.



Figure 8: Three towers – three supervisors (IIS 5)

She expressed her supervisors' support as follows.

Even though my professors did not share the same specialty, they all found a way to support me without any unnecessary complications. One professor was responsible for providing a project from the company along with the research goal and the funding, one professor was responsible for scheduling and paper writing, and one was responsible for technical support during the research. These specific assignments not only made everything clear since the beginning of the research but also enabled us to work with the best skill sets that we needed (IIS 5).

However, one fixed guideline from her three supervisors did not provide her with the opportunity to develop their research project as reflected in her comments below:

This way, they won't waste their time performing an experiment that goes nowhere (IIS 5).

Doctoral students' expectations: " ... I also wish my supervisor would be 'repotting' my work and adding some necessary fertilisers so that it can grow accordingly."

When commencing the PhD program, the participants had anticipated certain expectations that were similarly voiced through their photos. They expected to have clear direction and guidance from their supervisors. They also wished their supervisors to be accommodating and nurturing. Such expectations are dominantly enunciated due to the participants' bigger hopes that their negotiations of knowledge would proceed smoothly. The photo in Figure 9 was selected to represent the most frequently occurring expectation from the participants.



Figure 9: A plant - the needs of treatments (IIS 3)

Figure 9, captured by IIS 3, represents the following voice:

I want to talk about my work that I think needs my supervisor's touch to optimise the results. My work is symbolised by the plant which is heavily rooted. Just like what is portrayed in the picture, in which a plant needs some treatments, such as repotting, to optimise its growth, I also wish my supervisor would be 'repotting' my work and adding some necessary fertilisers so that it can grow accordingly (IIS 3).

Using a metaphorical comparison of the plant and the work in research for the doctoral program, IIS 3 emphasised the importance of "touch" and "fertilisers" from her supervisor to "optimise its growth" of the research to eventually achieve the success of her doctoral program. The expectation of having the supervisor's "touch" and "fertilisers" was clarified further as IIS 3 admitted the need to have "constructive comments" from her supervisor. Both the photo and its description soundly voice the need for clear direction and guidance in the form of constructive feedback and suggestions. The same voice was also delivered by IIS 4. She stated that she was expected to be told, to be given information which she could follow up. In resonance with this voice, IIS 2 said "I needed directions for my further research, yet my supervisor rarely gave me such directions or even clear answers" The need for receiving straightforward direction was also expressed by IIS 5. She, however, realised that this would not develop her strong mentality required to survive in her doctoral study.

Hence, from the voices of the students, the notion of being nurtured is clearly showcased. Feedback, suggestions and guidelines are the tangible instances of being nurtured and accommodated, that the participants request from their supervisors. Hoping to be given clear direction and guidance from the supervisors, most participants think that it is due to

their supervisors' expertise and knowledge in the field that they demand to benefit from their doctoral supervision.

Doctoral students' attitudes and reflections: From “ ... my supervisor was very controlling in transferring knowledge” to “ ... this journey will serve as my research apprenticeship.”

This theme is flooded by mixed feelings as shown in the doctoral students' attitudes toward their supervision and all the challenges and hardships encountered in their process of negotiations of knowledge production. Despite such mixed feelings, all the students surprisingly shared similar patterns of moving from feeling uneasy, gloomy, and tense to showcasing acceptance and positivity as the doctoral supervisions advance to the next levels. IIS 1 exposed his feelings about the process of knowledge transfer which was mostly painful and unhappy during his doctoral supervision. Voicing that “my supervisor was very controlling in transferring knowledge, especially knowledge related to the field”, IIS 1 described his mixed feelings of unease, stress, and discouraging experiences. However, eventually he developed acceptance and positivity about his experience of knowledge transfer with his supervisor. Having co-constructed negotiations of knowledge production, IIS 3 and IIS 5 realised that their supervisors aimed to build their own capacities and to find their own identities and ways to prepare themselves as emerging researchers. Similarly, IIS 4 felt grateful for her experiences in her doctoral supervision. She visualised her feeling in Figure 10, depicting her experiences of diving into the sea and getting swept away to the shore during her PhD supervisions.



Figure 10: A morning view at a beach – a feeling of gratefulness for doctoral supervision experiences (IIS 4)

Through all the doctoral supervisions that participants had experienced, they came to a point to reflect on. They needed to set up common ground with their supervisors. They realised that building a good relationship with their supervisors is one of the key factors for the success of their PhD journey. Having regular meetings and discussions would surely build up a good communication between supervisors and supervisees. For example, despite the controlling style of his supervisor, IIS 1 realised that “a good relationship with supervisor was one of factors contributing for my success in pursuing PhD degree”. He added that he needed to make adjustment toward this style in order to avoid disputes that

might hinder his success in pursuing a PhD with his supervisor as he believed in his life “there was one condition that we needed to go one-step backward to jump for several steps forward in the future.” Given the different supervisory styles they experienced, all the participating doctoral students realised that they had to be able to construct their own perspectives and knowledge, as expressed by IIS 3:

I just need to look back at the goals of doing this PhD, one of which is that this journey will serve as my research apprenticeship. As an emerging researcher, I will have to be working more independently. And I've been actually thinking that this is probably something that my supervisor wants to teach me, that knowledge is not always or most of the time drawing on supervisor's perspectives (IIS 3).

They also admitted that being doctoral students should have enabled them to develop a strong mentality to work independently in the process of negotiations of knowledge production, as represented by IIS 5:

Nevertheless, instead of trying to fight the system, we need to find an understanding why things need to be done in a certain way, which might be both uncomfortable and strengthen us at the same time (IIS 5).

Discussion

Our study captures the process of negotiations of knowledge production as perceived by five Indonesian international doctoral students in their doctoral supervisions. Such a process depicts how intellectual engagement between the students and their supervisors has finally led to the interaction of legitimised voices in producing knowledge. The key findings of this study have revealed the particular nature of legitimised voices in the negotiations of knowledge production as resulted from the supervisory style and relationship. Co-constructed and partly co-constructed negotiations of knowledge tend to arise from supervisory practices which maintain shared engagement, roles, and responsibilities by the doctoral students and the supervisors. Being engaged in such supervisory practices, the doctoral students in this present study were given sufficient space to pursue the truth of their knowledge construction and production while being supported by their supervisors' balanced intervention.

As voiced by IIS 2, IIS 3, and IIS 4 in this study, despite their initial wish to be told and fed what to do by their supervisors, they finally realised that the supervisory style managed by their supervisors is to nurture their independence in producing original research. The sufficient space to negotiate their voices in their doctoral supervision, balanced by the supervisors' provision of appropriate feedback, paves the way for the students' trust, confidence, and a feeling of assurance towards the direction of their knowledge production. These findings are in resonance with the positive discourse of supervisory activities by doctoral students (e.g., Halbert, 2015; Halse & Malfroy, 2010). These studies confirm that the act of respecting and valuing doctoral students' ideas grows from good supervisors who exercise learning alliance, provide a balance of academic and emotional support, and extend caring communication.

The co-constructed negotiation of knowledge, in which the process of knowledge production negotiations reflects mutual commitment and collective endeavour by the doctoral students and their supervisors in this study, also displays the supervisory style in responding to the students' expectations in receiving clear direction of their research project in the initial stage of their study. The supervisory practices, as experienced by IIS 2, IIS 3 and IIS 4 in this study, indicate the supervisors' decision to provide intervention after requiring the students to delve deeper into the ocean, sky or hilly path of knowledge construction. Although such a decision is understood as supervisors' effort to nurture what Bastalich (2017) terms as "the process of doing, being, becoming, and relational terms" in doctoral scholarship, it is intriguing to argue that supervisors should position their complex and dynamic supervisory role within doctoral students' range of understanding of the negotiation process of knowledge production. As admitted by these three doctoral students, it was not easy for them to eventually come to the stage where they finally realised that the supervisory practices, they experienced aimed to nurture their independence, creativity and originality in constructing and producing knowledge. Such an emotional process of knowledge production, as represented by doctoral students' supervisory experiences, has also been confirmed in several studies (e.g., Caffarella & Barnett, 2000; Pinto, 2021; Wang & Li, 2011; Young, 2000).

It has been highlighted that different cultural backgrounds of international doctoral students possibly affect their reactions towards critical feedback and their expectations of their doctoral supervision (Wang & Li, 2011). Therefore, it is important to offer a socio-culturally constructed (Hawkins & Mok, 2015) negotiation of knowledge production which measures a continuum of supervisors' intervention, based on doctoral students' preparedness to embrace doctoral scholarship, enabling them to gradually move forward to independent knowledge construction.

Supervisors may not assume that doctoral students are already informed of academic culture in doctoral scholarship. As Bastalich (2017) and Gopaul (2011) highlighted, a lack of academic socialisation contributes to problems in doctoral study. This relates to the idea that students having no information about required expectations, experience and knowledge of academic culture are incapable of obtaining benefits for doctoral success.

The other findings (IIS 1, IIS 5) suggested that the supervisors' voices were dominant due to status as prominent figures and main leaders of the doctoral projects. These conditions corroborate Bastalich's (2017) argument that knowledge production should be context-driven. In our study, both supervisors positioned themselves in the context of authority holder, a prominent figure and a project leader. These positions allowed both of them to dominate the voice in the negotiations of knowledge production. Therefore, the relationship between the doctoral students and the supervisors seemed to be distant. Lusted (1986) has pointed out that knowledge production is also determined by the process of interactions between supervisors and students in supervision practices. When the relationship is distant, the negotiation could be formal and the communication is likely more a command than a discussion. In other words, the roles of supervisors are very central in doctoral supervision (Bastalich, 2017). Because of these roles, the conflicting problems could address the notion of maintaining self and thought independence.

Doctoral students are feasibly given a wide space or freedom to obtain knowledge from many sources but in terms of independence of thoughts, it may be difficult to realise.

Other aspects that Bastalich (2017) highlighted as key issues related to doctoral supervision perspectives in the negotiations of knowledge production are supervisors' management and interpersonal styles. Findings from our study revealed that supervisors who dominated the voice in doctoral supervision are identified as direction providers. Bocchi and Cianci (2012) also highlighted that in the construction of new knowledge, the role of ideological aspects is very significant. Through this ideology, supervisors could allow or reject a piece of knowledge to be discussed or written. Another critical aspect, that potentially influences the negotiations of knowledge production so that supervisors' voices are hegemonic, is an asymmetrical power relationship, or what is called "breaches of justice" (Kitchener, 1985). Löfström and Pyhältö (2014, 2015) reported the misuse of power or an unequal power distribution during doctoral supervision. Likewise, the findings of this study suggest that the position of the project leader could give the supervisors a big authority to determine the direction of the research. In such a circumstance, the doctoral students in this present study have no equal power to express their ideas or thoughts. Therefore, positioning and power relation significantly influence the negotiation process of knowledge production in doctoral supervision.

Conclusion and implications

This study contributes to the current discussion concerning doctoral supervision discourse by providing evidence of doctoral students' and supervisors' process of negotiations of knowledge production. Our findings suggest patterns of supervisory styles that determine whose voices are legitimised during the negotiations of knowledge production in doctoral supervision. The first finding showed that the supervisors offered space to the doctoral students to express their knowledge and insights so that a co-construction of knowledge merited an appreciation. The second finding revealed that the supervisors were considered to have superior and legitimised voices due to their position or status as prominent scholars or a person in charge of a project. Our study also highlighted the doctoral students' positive attitudes toward and reflections on their PhD journey as a transformation towards becoming independent scholars in the future. Given doctoral students' acceptance of and positive attitudes toward the process of negotiations of knowledge production, supervisors need to be aware of students' feelings and anticipate their preparedness in the doctoral program. Eliciting doctoral students' expectations and matching theirs to supervisors is essential for grounding a positive supervisory relationship.

Channelling to the main findings of this study, although doctoral students are required to be autonomous and knowledgeable in their field, clear guidance and direction from supervisors are worth receiving. Therefore, balanced power relations and socio-culturally constructed doctoral supervision are worth implementing to bridge the roles of both doctoral students and supervisors in the negotiations of knowledge production during doctoral supervision. As such, culturally sensitive doctoral supervision enables supervisors

to sensitise doctoral students' cultural backgrounds and an entry-level of their knowledge and research experience, so that supervisors may be able to adjust their supervisory style and ensure better balanced negotiations of knowledge production.

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