Do PhD supervisors play a role in bridging academic cultures?

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Introduction

There is a prevailing view that supervisors regard PhD supervision as a very rewarding experience – considered 'one of the most enjoyable aspects of many academics' work' (Winchester-Seeto et al., 2014, p. 610). Perhaps, the task offers an opportunity for co-embarking on an exciting academic journey with a student in pursuit of a shared interest, and also enables supervisors to play a vital role in inspiring students' intellectual growth and skill development. Given the strong commitment and great investment required and the complexity that underpins a successful PhD study (Bøgelund, 2015; Pyhältö et al., 2012), which might explain the reported high (approximately 30% to 50%) attrition rates in doctoral education (Church, 2009; Gardner, 2007; Virtanen, Taina & Pyhältö, 2017), each PhD students' completion is a cause for celebration.

The doctoral student population has become increasingly diverse in recent decades, with a large proportion of students for whom English is not a first language, whether from low-income countries through capacity building programmes, emerging economy countries through home scholarships, or self-funded students seeking Western education (e.g. AAU, 2015; Winchester-Seeto et al., 2014). Against this background, research into the cross-cultural component in PhD supervision has pointed to the benefits and extra challenges this may bring concerned parties (Elliot, Baumfield & Reid, 2016a; Robinson-Pant, 2009; Winchester-Seeto et al., 2014). With a number of research studies on doctoral experiences primarily focusing on students' perspectives, there have also been calls for more supervisors' perspectives (e.g. Bøgelund (2015). Although a larger group of people within and outwith academic settings conventionally form a 'constellation of individuals' from which these students can draw resources and support (Baker & Lattuca, 2010, p. 814), this paper mainly examines the intercultural exchanges between PhD supervisors and their students to understand better supervisors' role. This study was undertaken in a Danish context, arguably an extreme case based on Hofstede's cultural dimensions (Hofstede, 1984) and the strong influence of distinct Nordic/German '*didaktik*' educational traditions on the Danish approach to doctoral supervision (Hopmann, 2007). Within the *didaktik* tradition lies the concept of '*bildung*' that stresses the formation of students with an internalised resistance against summative assessment of performance. This means Danish assessment culture strives towards mastery goal orientation for the individual to develop and become a whole person (Midgley, Kaplan & Middleton, 2001), which is different to the curriculum-driven tradition practised elsewhere, e.g. Anglo-American educational systems (Dolin, 2016). This contributes to the argument that the differences in educational backgrounds between supervisors and PhD students in Denmark are even greater when compared with studies undertaken in Anglo-American contexts. Therefore, this phenomenological study is expected to elucidate more nuances of the complex ways culture could play out in the supervisory processes. The aim is to identify potential strategies that experienced and interculturally-proficient supervisors

apply to bridge academic cultures in the context of an extreme case and with respect to cross-cultural PhD supervision in general.

Cross-cultural facet of doctoral learning and supervision
It is a truism that a PhD education undertaken internationally offers an enriching and challenging experience for students emanating from their immersion in different academic and societal contexts. These experiences vary immensely and are regarded either as a distinct entity or overlapping entities within the formal or informal curricula, academic or non-academic practices, and direct or tacit activities (Xu & Grant, 2017), where each interaction offers learning potential (Elliot, Baumfield, Reid, & Makara, 2016). Likewise, supervisors' interactions with international students could bring challenges and may equally enhance their intercultural competences and serve as a resource for meaning enrichment (Akkerman et al., 2006).

Naturally, these potential tensions are not exclusive to the context of intercultural doctoral supervision, as friction has been reported with domestic students as well (McCormack, 2005) and their expectations of the PhD supervision process are not necessarily aligned with their supervisors'. Winchester-Seeto and her colleagues (2014) have offered a conceptualisation and framed these cross-cultural issues as 'intensifiers', i.e. issues that generally affect PhD students in any setting, but are more pronounced in a cross-cultural supervision relationship (p. 610). Each of these intensifiers implies adjustment and transition. Of all the 'intensifiers' identified in their Australian study namely 'language, cultural differences in dealing with hierarchy; separation from the familiar; separation from support; other cultural differences; stereotypes; time and what happens when [the student] returns home', the two concerns highlighted by many participants were 'language' and 'separation from the familiar' (Winchester-Seeto et al., 2014, p. 610). Lovitts (2005) asserts that the transition from Master's level to PhD level is already challenging but more so when students simultaneously make the shift into the unknown territory of a different academic and societal culture (Jin & Cortazzi, 2006). This can mean multiple and simultaneous transition and adjustment at various levels, e.g. PhD study, language use, academic culture, familiar grounds, etc.; this prompts students to adapt, negotiate and broaden their horizons to succeed, often in a setting that takes the privileged position of the Western model for granted (Kidman, Manathunga & Cornforth, 2017).

Urie Bronfenbrenner's (2005) comprehensive Bio-ecological Systems Theory of Human Development is regarded as pertinent to this discussion. Accordingly, the nested ecological system explicates the interlinked influences and opportunities for growth and development via the individual's (who is situated at the centre) interaction within the microsystem (family, school), mesosystem (linkage among the microsystem constituents), exosystem (community, parents' workplace) and macrosystem (culture, customs, traditions, norms and practices) – further connected through the chronosystem (life milestones). This theory elucidates how learning gradually developed via the person's unique and coalesced/fused interaction within each of the systems actively contributing to one's development and overall learning. An emphasis on the wider elements that affect one's learning is particularly crucial in the case of educational sojourners. As a case in

point, international PhD students' expectations are informed by their holistic understanding, which is based on the societal culture as well as pedagogy they previously experienced (and considered the norm) in their respective academic cultures, e.g. distinctive educational practices: forms of address, contact, textbooks, lectures, assessment and attendance (Carroll, 2015, pp. 25-26). Although 'forms of address', may sound simplistic, this practice carries with it powerful messages of moving away from a hierarchical relationship into one based on equity or partnership. Doing so can influence supervisors' expectations from students and vice versa, and mitigate situations where students await leading from supervisors while supervisors trust and expect students to take the initiative. Therefore, there is a convincing need for clarifying and aligning expectations. If left unaddressed, mismatched expectations can lead to challenges in the collaboration that may be difficult to overcome. Hence, attention to and a healthy understanding of academic acculturation and transition to a new culture is crucial, whether in academic or non-academic spheres, and in formal as well as informal experiential contexts (Elliot, Reid & Baumfield, 2016a).

Despite recent developments and moves towards 'mentoring' and 'socialising [doctoral students] into disciplinary communities and discourses' (Manathunga & Goozée, 2007, pp. 309-310), there remain traces of the previously dominant traditional master/apprentice model influencing the asymmetrical relationship between the PhD supervisor and the student (Kobayashi, 2014). These influences on the PhD supervision process are pertinent to this discussion since interactions with supervisors, in particular play a vital role in doctoral students' development as researchers. Similarities between supervision and the teaching-learning scenarios make it worth drawing upon issues from 'the international classroom' when examining cross-cultural related issues in the supervision process. According to Carroll (2015), areas where misunderstandings could occur include: a) relations between teachers and students; b) teaching methods; c) assessment; d) academic writing; and e) academic/critical reading (p. 32). Similarly, relationships, methods of learning and teaching, academic writing and critical reading, as well as language limitations, academic content and learning styles are equally deemed key facets in the PhD supervision process (Lee, Farruggia & Brown, 2013).

Critical and scientific thinking in doctoral education
Critical thinking, being at the core of PhD research education (Brodin, 2014; Davies & Barnett, 2015) prompts the questions: a) What role does it serve in understanding cross-cultural learning and supervision processes?; and b) What is the function of the culture one has been immersed in and/or by the pedagogical orientations received? In exploring critical thinking, there needs to be recognition of several rival strands associated with this concept: philosophical, educational and socially active perspectives (Davies & Barnett, 2015). While the philosophical perspective focuses on the clarity and rigour in one's thinking, the educational perspective concerns students' developing a critical attitude to benefit the wider society, and the socially active perspective refers to the transformation of critical attitudes among students. Davies and Barnett assert that these three perspectives are intertwined and 'are by no means entirely separable' (p. 6). They contend that with much scholarly effort regarding cultivation and disposition of critical thinking, the sociocultural dimension (explored in the last twenty years) mandates an equal level of esteem. With respect to the

doctoral discourse, the development of students' critical thinking and academic literacy skills, which has reasoning and argumentation at its heart is arguably more pertinent (e.g. Andrews, 2015; Diyanni, 2016; Kuhn, 2005). This also goes with making reasoned judgment when scrutinising a large amount of information available via media sources (Manalo et al., 2015).

Within the context of cross-cultural learning, there are arguments concerning how cultural practices are likely to lead to distinct conceptualisations of what is regarded as effective learning and specific learning strategies and even more importantly, how culture can inform learners' ways of thinking, which Li (2005) frames as 'mind-virtue' orientation. Whereas the mind orientation model stresses the key importance of thinking, where 'inquiry guides the learner to question the known and to explore and discover the new', mind orientation' preference is on moral and social perfection, 'mastery of the material' and societal contribution (p. 191). The main premise of the 'mind-virtue' orientation framework is that human learning is dependent upon how it is viewed and learning can be approached using different lenses and perspectives, as it is generally informed by cultural values and beliefs (Egege & Kutieleh, 2004; Li, 2005). Perhaps, this helps explain the assertion that 'pedagogy is not necessarily culturally neutral' (Manalo et al., 2015, p. 323). Beliefs and values can tacitly permeate and inform learners' appreciation of what learning constitutes, which then underpin motivation, pedagogy and sense of achievement (Moseley et al., 2005).

Li's 'mind-virtue' orientation conveys a powerful lesson, i.e. culture creates a conceptual map for learning. The contrast between mind and virtue orientation models does highlight its implications for understanding the tacit but powerful impact of learners' beliefs on learning; such beliefs subsequently manifest themselves in students' learning behaviour (e.g. reluctance to criticise or question authority). Taken together, with the parallel between supervision and teaching practices, understanding students' initial conceptualisation of learning approaches can be crucial for a greater appreciation of the cross-cultural facet of doctoral learning and supervision (Choy, Li and Singh, 2015). It can also be strongly argued that the PhD supervisors' role is fundamental, as they are often seen as doctoral students' first port of call. The quality of supervision is crucial specifically for doctoral students' well-being and in establishing a good working relationship in which aligned expectations are regarded as the most important factor (McCormack, 2005; Wisker, 2005).

Methodology

This Danish study employs a small-scale conventional interview study with international PhD students and experienced supervisors who are highly competent in intercultural communication. The Danish context arguably deviates from Anglo-American contexts and is deemed an extreme case. Consequently, this enables the research 'to obtain information on unusual cases, which can be especially problematic or especially good in a more closely defined sense' (Flyvbjerg, 2006, p. 230). In turn, this affords elucidating distinct issues or nuances not often observed elsewhere or perhaps, exist in less pronounced forms elsewhere. The transparency in using a case study approach, therefore, requires a meticulous description of the local context.

Denmark as an extreme case study

Notwithstanding some disputes about Hofstede's cultural dimensions since cultures within academia may vary from the corporate cultures that Hofstede's dimensions are derived from (Signorini, Wiesemes & Murphy, 2009), this theory offers some insight into Danish culture. Figure 1 indicates comparison of power distance, masculinity and uncertainty avoidance in selected countries, as defined below (see geert-hofstede.com/national-culture.html):

> Power Distance – 'the degree to which the less powerful members of a society accept and expect that power is distributed unequally'

> Masculinity – 'a preference in society for achievement, heroism, assertiveness and material rewards for success'; femininity – 'a preference for cooperation, modesty, caring for the weak and quality of life'

> Uncertainty Avoidance – 'the degree to which the members of a society feel uncomfortable with uncertainty and ambiguity'
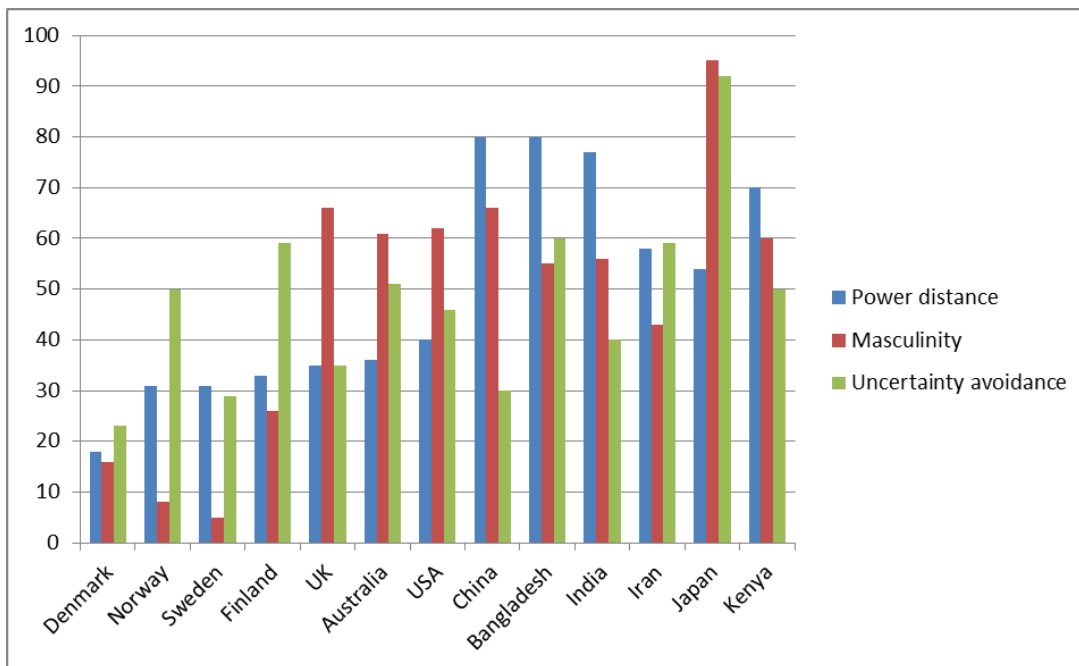

Figure 1. Denmark compared with Nordic countries (except Iceland), selected Anglo-American countries, and countries of PhD respondents in the study with regards to Hofstede's dimensions Power distance, Masculinity and Uncertainty avoidance. Values generated from https://geert-hofstede.com/countries.html.

Figure 1 explains the difficulty in decoding cultural expectations with respect to hierarchy and interaction norms in Denmark because of low power distance combined with low uncertainty avoidance. Rules are few while self-regulatory codes prevail, albeit often tacit and invisible. Disagreement is welcome, i.e. it is acceptable for subordinates to question or disagree with their

superiors as everyone is expected to have a voice and contribute to decisions. Leaders trust their teams and delegate responsibilities; they generally coach rather than lead. In turn, a high degree of autonomy is required of employees. Dr and Professor are not used when addressing people; respect has to be earned by proving one's expertise. The low score on the masculinity scale explains the culture of lengthy discussion until compromise or consensus is reached. The tolerance for ambiguity is also reflected in the loose structures and informal working environment in Danish universities. Lastly, significant importance is paid to sound work-life balance, another aspect of the feminine society (low masculine society) (Ekelund, 2010).

General education

Danish educational systems has its roots in the German *didaktik* tradition of the Nordic and Central European countries (as opposed to the Anglo-American curriculum tradition) (Hopmann & Riquarts, 2000). *Didaktik* is regarded as a tradition of thinking about teaching and learning, where the concept of *Bildung* (formation) is central. A brief definition of *didaktik* and *bildung* does not exist, but Hopmann (2007) provides comprehensive descriptions. In the *didaktik* tradition, the ability to know or to do something is not the goal of teaching and learning; rather, knowledge and skills are considered transformative tools for unfolding the learner's unique self. *Bildung* cannot be captured by one English term, but encompasses notions including formation, education, experience and erudition. The *didaktik* tradition differentiates between the content and its educative meaning. For instance, when learning about the Great War, *didaktik* would ask 'What can we learn about mankind by understanding the Great War?' (Hopmann, 2007, p. 116). Another key aspect is teacher autonomy; teachers are given the professional competence to adjust the subject matter and the assessment in ways that support the pupils in constructing their own understanding. The state may issue directives concerning the subject matters to be taught, but teachers have the pedagogical freedom to translate this into classroom practice as explained in the *didaktik* triangle (see Figure 2).
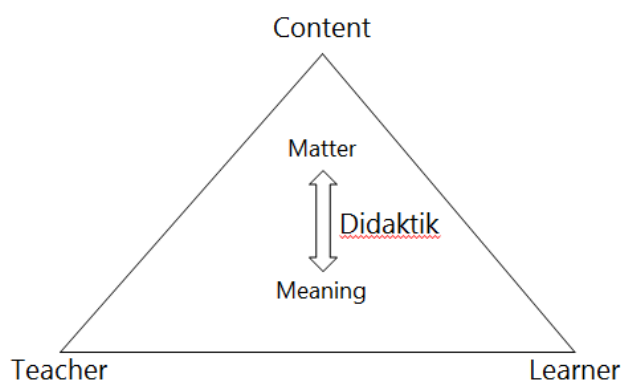

Figure 2. The Didaktik triangle (Hopmann, 2007).

Assessment is traditionally mainly informal and formative, although New Public Management (NPM) and PISA tests in recent years have challenged this tradition (Dolin, 2016; Forsberg, Hortlund & Malmberg, 2016). The Nordic discourse of leadership is evident in the strong resistance against New Public Management (NPM) in the Nordic countries, which is founded in the Nordic welfare state emphasising a strong state and strong local communities, rather than the stronger

beliefs in the free market that may prevail in the UK and US (Moos, 2013). When the performance culture and accountability measures of NPM are introduced in the Nordic countries, they are resisted and adapted to match Nordic values. This exemplifies that the values of Nordic leadership rest on a high level of trust, sharing and delegation, with room for professional autonomy and interpretation among teachers and supervisors (Forsberg et al., 2016; Moos, 2013).

Nordic education, from primary school onwards, rests on the belief that individuals can develop, and that society influences the development of the individual. This can perhaps be linked to the notion of mastery goal orientation (individuals aim to develop competences) rather than performance goal orientation (individuals aim to demonstrate good performance) (Midgley et al., 2001) as there seems to be a pedagogical connection with the wide, holistic and transformative educational growth and development under the *didaktik* and *bildung* tradition. Taken together, Danish PhD supervisors are then expected to have greater trust in doctoral students as self-regulated learners with a mastery goal orientation. As a result, supervisors have high expectations from doctoral students from the outset in terms of autonomy and equity while resisting judgement of student performance or the doctoral student as a person.

PhD studies in Denmark
PhD studies in Denmark require funding for research and living expenses for three years, usually through employment as a PhD student at the university, or increasingly via a scholarship from the PhD student's home country. As employees, PhD students formally report to the head of section or department; the principal supervisor holds formal power only as signatory of documents for approval by the graduate school. Yet, the supervisor is the one who recommends programme termination if the PhD student does not meet the expected requirements. As elsewhere, supervisors in the sciences co-author publications that are included in the doctoral theses. Supervisors, to an extent, depend on the doctoral research to meet their own publications targets and research outcomes.This mutual dependency adds to the complexity of power relations (Kobayashi, 2014).

Based on 2016 figures, there are around 1,160 PhD students in the faculty, comprising 46% female, 54% male; 45% Danes, 25% from other European countries, and 30% from outside Europe. Average age at enrolment is 28, and 85% commence PhD studies following a Master's qualification. The PhD programme is limited to three years of work and study, entailing six months of coursework, and up to six months of teaching duties. The average completion time is 3.3 years enjoying a completion rate around 88%. Most PhD programmes (e.g. 90% in 2016) are partly or fully funded by external bodies (PhD-School, 2016). Due to the external funding of PhD programmes, these positions are advertised internationally and the supervisor employs the most suitable student for the job/study. This is contrary to the convention that doctoral students select their supervisors (Ives & Rowley, 2005), except for international students who are in receipt of a scholarship from their home country and are not formally employed. Nevertheless, the general perception of PhD students as colleagues tends to prevail.

Participants

Interview participants were six international PhD students and six experienced supervisors from life sciences (e.g. veterinary public health, soil science, environmental science, natural resource governance, agricultural landscapes, and agricultural development). They were recruited through the second author's networks. Criteria for recruiting supervisors include: a) having supervised at least two international PhD students to successful completion; and b) international collaboration in their teaching and/or research. This is to ensure ample supervision experience and a good level of intercultural competence. PhD students were recruited using a snowballing process, starting with doctoral students who completed a course with the second author. No specific recruitment criteria except variation in students' country of origin were employed. It is worth noting that participating students are all university employees, which means that they applied and were selected by the supervisors as the most suitable candidates for the posts. Two students completed their MSc in Denmark; the rest embarked on their PhD after completing an MSc elsewhere. One was in a double PhD programme shared between two European universities. Students ranged between 6 months and almost three years into the programme at the time of interview.

Table 1: Participants' profile

International PhD students			Supervisors of international PhD students		
Pseudonym	*Gender*	*Country of origin*	*Pseudonym*	*Gender*	*Country of origin*
Zuki	Female	Japan	Asger	Male	Denmark
Susheila	Female	Bangladesh	Henning	Male	Denmark
Devy	Female	India	Janne	Female	Denmark
Wang	Male	China	Jeppe	Male	Denmark
Reza	Male	Iran	Viola	Female	Denmark
John	Male	Kenya	Anton	Male	Denmark

Procedures

With the research's phenomenological focus, the interviews followed an interview guide in a semi-structured format, which allowed exploration of themes that are meaningful to the respondents (Smith & Osborne, 2008). Table 1 presents some demographic information about the two groups of participants. Data were collected in spring 2013, with the help of the research assistant who holds an MA in international negotiations and is proficient in intercultural communication. The interviews were audio-recorded and transcribed verbatim. Interview analysis conformed to the rigorous steps of the Interpretative Phenomenological Analysis (IPA) developed by Smith and Osborne (2008). The IPA approach enabled us to get close to the participants' own world and experience with a view to learning from them. This inductive approach generated a number of preliminary themes from the first transcript, which were applied in theme generation for the rest of the transcripts. The same procedure was applied in both supervisor and PhD student interviews, albeit independently. Themes were then compared and revised in an iterative process. Since the interviews with supervisors were conducted in Danish, preliminary analysis was undertaken by the second author who is proficient in

both Danish and English. Excerpts were translated into English from which the first author analysed the selected data to apply albeit limited, double rating of analysis, followed by ongoing discussion with the first author to check agreement with the emergent themes.

Results

With its focus on seeking the perspectives of international PhD students and supervisors concerning cross-cultural supervision in the Danish context, this paper reports the four important facets that point to challenges and opportunities inherent in intercultural exchanges, as well as strategies for bridging academic culture differences.

Differing modes of learning
It has been observed that in cross-cultural supervision, students' and supervisors' practices could be associated with one of two learning dichotomies, one that is geared towards self-regulated learning or the other that is heavily directive by nature. Such differing practices could potentially lead to tensions as exemplified in the two students' and the supervisor's remarks. Wang expressed unfamiliarity, lack of understanding and even annoyance concerning the 'interactive' discussion that conventionally characterises the Danish educational setting. His remarks on discussions being 'a waste of time' conveys the 'foreignness' of the idea behind interactive classroom learning.

> …it's more interactive between the students and the teachers [here]. … Sometimes I get a little bit annoyed [when] one student just keeps asking questions….. And mostly, the teacher will not stop it. … You can easily find it in the references, or you can just think about it ... [it's] a waste of time (Wang, PhD student).

Additionally, the passages below demonstrate a contrast of learning expectations; whereas Reza expected 'to learn' from and through the supervisor, the supervisor raised the importance of students realising that their research project is their responsibility, and that entails confidently taking ownership of it.

> [Being independent] was very difficult for me in the beginning… what if I'm making a mistake, what if [my supervisor] says: what did you do? … he is actually open-minded … and he's… not interfering with my decisions. But sometimes I need to have a discussion … a proper lab meeting. I [may] have the most stupid questions but I'm not a professor, I'm not God … I'm here to learn (Reza, PhD student).

> [I] throw a lot of ideas … then they have to … decide which they want to follow … one of the big challenges is to make them take responsibility … that it is their project, and [not] just do as I say. … the problem arises when they are afraid of taking decisions by themselves, and they feel a need to get all decisions validated to the smallest detail (Janne, supervisor).

Such divergence of the modes of learning may cause various pressures, e.g. indifference to a 'foreign' mode of learning as well as contrasting expectations between students and supervisors. A combination of 'very rigid hierarchies' characterising supervision structures back home and students' openness to the generous academic freedom in the Danish context could be a daunting experience, as Reza found. While appreciating the Danish academic tradition on autonomy and equity, students recognise that this also entails 'more self-discipline' (Zuki, PhD student). It is important to note, however, that the orientation for self-regulated learning is not solely linked to the *didaktic* tradition. Zuki explains that the level of independence expected from students is partially strengthened by the 'half-way employee' nature of the Danish PhD.

Mismatched expectations on feedback-giving

Since cross-cultural supervision is a natural meeting of cultural practices, they also contribute to oddness, puzzlement, even mismatched expectations between international students and supervisors, e.g. in assessing students' performance.

> …I don't understand if they are happy with me, or angry. Because they never show that... you can't see something on his face... everyone is always very helpful and laughing all the time... so I don't understand. It's a challenge (Susheila, PhD student).

International PhD students' accounts hint at a craving for judgement or assessment of their performance that they do not get from Danish supervisors. Although supervisors are regarded as 'so nice' who 'never say you are bad' (Wang, PhD student), such a perception could also build 'some [invisible] walls'; at times, this leaves students wondering 'what supervisors are actually thinking and how they evaluate' students' performance (Zuki, PhD student).

In comparison, Anton (supervisor) acknowledged the need to recognise complexity when assessing students due to their different backgrounds. He dismissed the idea of judging students using norm-based assessment. Instead, he asserted that good feedback-giving must focus on the task and learners' mastery.

> [As for] rating [international students] … you are comparing apples and pears, you cannot compare all PhD students – they come from different backgrounds … I have a rather direct [way of telling] people in a relaxed manner: 'These are some really stupid mistakes you've made, you didn't think it over properly….' … some people think that I am very direct and no-nonsense … I do it … not from above, but [to show equal level of relationship] (Anton, supervisor)

Like Anton, all other supervisors in the study descended from the Danish tradition, which greatly impresses the idea of trust in individual student's ability to develop based on giving task-orientated feedback, alluding to a mastery goal orientation. The sense of insecurity from the voice of international students might arise from the learning traditions from their country of origin, possibly

with greater emphasis given to performance goals rather than the mastery goals firmly embedded in the Danish 'didaktik' educational system.

Development of critical thinking

As this study is in the context of life sciences, the notion of critical thinking therefore broadly encompasses scientific ways of thinking. While discussions are centred on the cultural influences on learning, they also powerfully illuminate the levels of influences on the development of students' critical literacy. Starting with the pedagogical orientation previously received, this affects students' conceptualisation of 'learning':

> … they gave me a book, 200 pages, and I asked, 'Professor, do you want me to memorise 200 pages?' and he looked me and said, 'Are you crazy, [nobody is asking you to memorise 200 pages]? You just use it to develop this project.' … That's exactly the difference, and … that is critical. [We] international students … just stack everything inside [ourselves] (Reza, PhD student).

The effects of learning orientation tend to be strongly embedded in students' psyche and can be observed in the way that international students approach academic reading for example, which greatly contrasts with how Danish supervisors read academic papers.

> … it's two sides of the same coin. When I read a paper … I read with the assumption that it's a lie … I am looking for weaknesses in their methods and so forth. So, even my very best [South East Asian] student, he reads a paper and then he says: 'They found this and that.' and then I say: 'No, they didn't, they found something that indicates it, but they didn't actually find it' (Asger, supervisor).

One explanation for this is that the educational system these students were exposed to was geared towards knowledge reproduction where learners are encouraged to 'learn by heart' as opposed to learning and producing knowledge through discussion, which also includes developing skills to think critically (Henning, supervisor). This manifests itself in the reported contrasting approach to reading a paper where a clear distinction was made between a questioning and an accepting attitude. Arguably, apart from these pedagogical variations, various influences at the societal and personal levels are proportionately influential and can reinforce or weaken one's ability to think critically. These are exemplified in supervisors' observations:

> … some of that independent thinking actually might be present, but it's weakened because they believe in authorities … [it is] one thing … to think independently, but it's something else to voice it (Janne, supervisor).

> … it's very seldom that the international, or at least the Asian students, they will never [contradict authorities], they can have strong opinions but they will align. And some will be extremely humble (Henning, supervisor).

[As for] the African universities where I have seen how it's going … that is definitely not encouraging critical thinking [but] the PhD students I have met, from Kenya and Tanzania … I feel that at a personal level, they were critical thinkers (Jeppe, supervisor).

Hofstede's (1984) notion of power distance, which tends to affect greatly some societies more than others, could possibly explain students' hesitancy to 'voice' an alternative view (see Figure 1). As per Henning and Janne's observation, either the societal culture does not openly encourage it, possibly due to hierarchical-related respect towards people of authority, or that critical views of a contentious nature (political, royal) tend to be stifled. By contrast, Jeppe asserted that expression of critical thinking can also be observed at 'a personal level'. Despite not being supported by the educational system, students can equally have the propensity to develop critical thinking, subsequently becoming part of their personal disposition.

Bridging cultures

Supervisors are arguably key players in facilitating students' enculturation into the academic discipline – an important first step enabling them to meet the requisite standards and achieve a PhD. In this section, we will report instances of how Danish supervisors act as mediators of the new academic culture for these students. Supervisors articulated the need for students to become self-regulated learners by taking 'responsibility for their project' from the beginning (Janne, Anton and Asger). Supervisors' responses indicate that they initially take into account their knowledge of students' enculturation, e.g. not being comfortable with flexible learning pedagogies.

… it is important to have … procedures because they are more used to formal ways … they are used to 'Now, we do this from A to B.' and if it is … too loose in the beginning, they are not comfortable with that… it is better that they take the decision, but at other times, it is okay to say: 'You know, now you will do like this.' (Anton, supervisor).

Gradually supervisors introduce the value of PhD students taking ownership and establishing a more symmetrical relationship. Janne expressed this as: 'My ideal is the culture without leadership, where we are all equal … and that should be the tone we use in communication … the tone … I increasingly build with foreign PhD students'. In conveying the importance of equity, supervisors also linked it to forging a healthy relationship with them. As PhD students' first port of call, it can be expected that supervisors' remit also constitutes helping make students' 'feel safe' and that they are 'being [part of] a family', or in general terms, providing 'pastoral care' (Wang and John, PhD students; Viola and Henning, supervisors).

… it requires more time, it's not enough with a meeting every four weeks. It's the daily contact, which is important, then you get close. They are used to contact, and then they open up (Henning, supervisor).

If you, from the start, have this directness and informality and invite them home for dinner, which I often do, and 'Let's go to the park and grill and walk about with the bare-footed professor.' … everyone likes that … that also means [breaking the] barrier…. (Anton, supervisor).

Additionally, 'humour' is another personal strategy to convey honesty and a 'friend-like' attitude (Asger, supervisor) but not friendship prompted by concerns that it might damage the professional working relationship between them. Notably, supervisors' actions are gestures of goodwill prompted by a yearning to assist students' academic progress. They acknowledge that a PhD is not only an academic endeavour, after all. It entails 'undergo[ing] a personal transformation process' (Asger, supervisor). Unsurprisingly, PhD students are surprised and delighted.

… when I came to Denmark, I used to call my professors and everybody by 'Doctor'… 'Dr Professor' and then, I realised that this is not acceptable in this country (Reza, PhD student).

The effort to pursue equity in the relationship is aligned with the Danish notion of 'autoritetstro', translated as 'respect for authorities' – what supervisors strive to overcome. Asger (supervisor) was 'very aware' of this academic (and societal difference), and therefore, of the necessity 'to break that respect for authority'. This then leads supervisors to encourage international PhD students to agree as well as contradict and oppose their supervisors, as a crucial part of intellectual growth. Janne (supervisor) explained that students' reluctance to 'contradict' becomes even more evident when compared to Danes who have no reservations in saying 'I don't get that.' if they find themselves in similar circumstances.

Sometimes, I said: 'Something needed to be changed.' and the student answers 'Yes', but she doesn't change it. Then, I followed up and asked her why … there is actually a reason why, but this is not voiced beforehand. Sometimes it's because she did not understand, and that's a different matter (Janne, supervisor).

They will not directly contradict me, but they will also not change their manuscript, and then it starts circulating between us endlessly…. (Henning, supervisor).

Traces of hierarchical influence back home typically lead to students avoiding direct confrontation with the supervisor, yet disregarding the advice received. Viola (supervisor) notes that it sometimes 'takes a long time to find out' that students were actually in disagreement. She also started employing strategies to urge students to voice their views by saying: 'I can see that you are sceptical', which proved to be effective, rather than 'I can see that you disagree, shall we discuss this?'. Taking the students' perspective is viewed to be more emphatetic, especially since for students' not wanting to lose face for not being able to understand.

If I don't understand, I shouldn't say 'Yes' … But I have tended to … say 'Yes' or smile [even when I] really don't [understand and] (laughing) things are not really [clear].

In the end, they can see … that my face is totally confused. Then he [repeats]: 'Do you really understand or ...?' and then I say 'No'. (Zuki, PhD student)

All these exemplify how supervisors also serve to bridge understanding of societal non-verbal gestures and codes, which could potentially be a hindrance to international students' ability to 'read' others due to their general lack of societal familiarity combined with language challenges, which then affect students' confidence to operate in a new environment (Viola, supervisor).

Discussion

In this section, we highlight supervisors' crucial role in helping international PhD students to navigate in their new academic contexts, understand the requisite standards and facilitate students' meeting these standards subsequently leading to a doctoral qualification. The four themes that this study identified seem to revolve around what (Xu & Grant, 2017) regard as 'the enrooted voice of respectful dependence and the alien [voice] of critical thinking' (p. 5) characterising many in the international PhD cohort – possibly as a combination of previous pedagogical traditions, cultural norms mixed with personal attributes. Contrasting pedagogical orientations that inform students' learning preferences, notion of self-regulated learning, learning expectations and feedback as well as critical thinking are arguably key academic areas that necessitate bridging. Notably, experienced and interculturally competent supervisors acknowledged the intertwined nature of bridging academic and societal cultures.

Our research highlights that the value attributed to critical thinking, the strength or deficiency of it, and/or the process of development of critical thinking seem to serve as an ideal starting point or a lens in appreciating further what underpins differing modes of learning practice and mismatched expectations, for which bridging academic cultures becomes imperative. This is diagrammatically represented in Figure 3.

Academic adaptations
and understanding
- academic culture

**Personal
disposition**
- analytical mind

**Pedagogic/
learning mode**
'learning by heart'
vs self-regulated
learning

CT/ST

**Supervisors
as bridge**
- feedback
- *'bildung'*

**Intercultural
exchanges**
- within academia
- *outwith academia*

**Cultural
influences**
- societal hierarchies
- political system

Psychosocial adaptations
- symmetrical relations
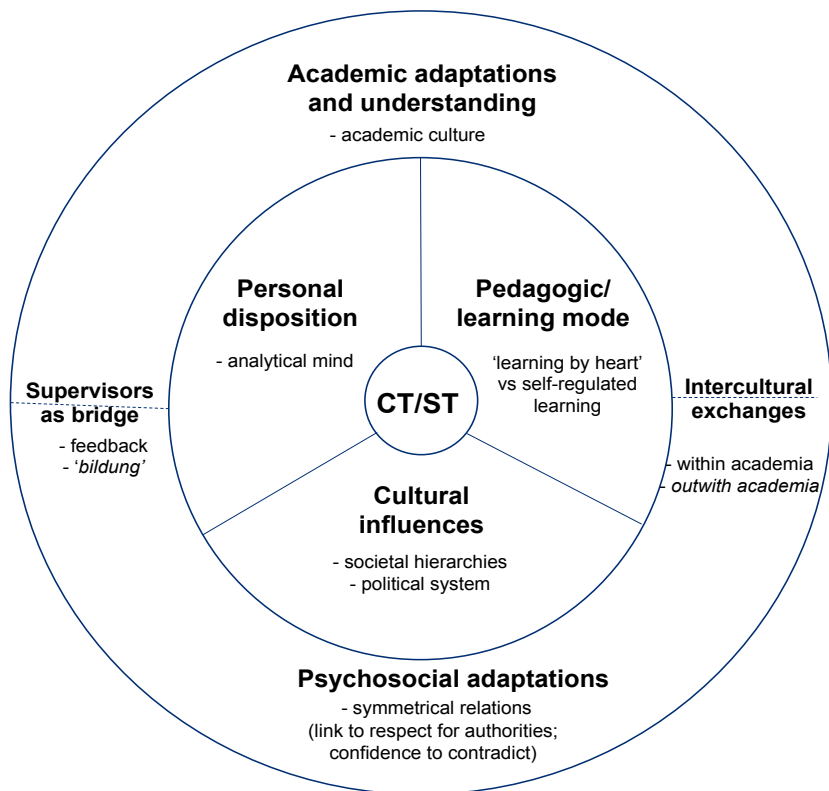(link to respect for authorities;
confidence to contradict)

Figure 3. Critical thinking - the crux of academic and psychosocial adaptations

The themes generated by this study could help explain the process underpinning international PhD students' academic adaptations and understanding, with specific reference to the development of critical thinking (and scientific thinking) at its core (see Figure 3). This model suggests the triarchic ways in which capacity for critical thinking is conventionally acquired, i.e. via: a) one's personal disposition; b) pedagogical orientation received; and c) societal structure and/or political systems that are tacitly embedded in the prevailing culture of the student's original ecological system. There is literature to support various contributing factors to the development of critical thinking (e.g. Andrews, 2015; Choi, Li & Singh, 2015; Egege and Kutieleh, 2004; Kuhn, 2005; van Egmond et al, 2013). Our study not only strongly supports this proposition but argues for their strong interconnectedness. As we explained elsewhere, the educational sojourn is a distinct occasion that paves the way for the co-existence of two ecological systems, i.e. the ecological system, which was 'the norm' prior to the sojourn and the new ecological system that the international students become exposed to as they become immersed in both academic and societal cultures of the host country (Elliot, Baumfield & Reid, 2016a; Elliot, Baumfield, Reid, & Makara, 2016; Elliot, Reid, & Baumfield, 2016b). Depending upon the extent of these differences, the educational sojourn tends to reinforce any similarities and differences that manifest themselves through differing mode of learning practices and mismatched expectations. This then leads to the inherent need to bridge academic (as well as psychosocial) culture – arguably a significant component in cross-cultural

doctoral learning and supervision. It is worth noting that in these cross-cultural interactions, supervisors also viewed this experience as contributory factors to their personal and professional growth, e.g. raised awareness on 'how others read you' as well as personal enrichment of cultural knowledge and understanding via exposure to other cultural perspectives, and rationale for different ideas, intentions and behaviours. As supervisors in this study demonstrated, their recognition of the differences and sensitivity to both pedagogic and socio-cultural struggles, e.g. ensuring that students are not losing face in the process, are crucial and potentially impact on the quality of the relationship and supervision itself. It was evident from this research that these personal qualities of supervisors, e.g. empathy and concern (Xu & Grant, 2017) make a genuine and qualitative difference to cross-cultural supervision.

Taken together, what can be learned from this research on the cross-cultural facets of doctoral learning and supervision? While some challenges arise from and via the numerous interactions between PhD students and supervisors, there are valuable lessons to be learned particularly from our interculturally competent Danish supervisors, where the notion of '*bildung*' is strongly embedded and manifests itself in their '*didaktik*' educational tradition. First, as far as supervisors are concerned, there is a conscious attempt to pursue equity or symmetrical relationship, which Dysthe (2002, p. 519) refers to as 'the partnership model'. Their strategic actions are underpinned by the flat organisational structure that they tend to strive towards; supervisors see pursuit of a symmetrical relationship as a critical first step towards fostering independent thinking and self-regulated learning. Another approach for pursuing this equity is through reducing students' perceptions of barriers arising from 'power distance'-related expectations, which tend to be more prevalent among students from very hierarchical societies. In Denmark, this is referred to as 'autoritetstro' or 'respect for authorities', which mirrors the 'power distance' element in Hofstede's cultural dimensions (Hofstede, 1984) subsequently becoming a barrier that supervisors endeavour to overcome. This leads to the third strategy, which is to address students' difficulty with disagreeing with their supervisors by impressing on them the idea that doing so is not the opposite of pursuing 'harmony' – something possibly strongly influenced by the home culture (e.g. collectivist principles). Pursuit of harmony may sound very positive but as the findings indicate, hesitancy to contradict supervisors openly, for example, can ironically bring forth the opposite result. The actions demonstrated by these interculturally competent Danish supervisors are genuine exemplars of effectively bridging academic as well as psychosocial cultures that can strongly contribute to international PhD students' overall coping and successful adaptation to the Danish doctoral supervision context. Likewise, we strongly argue that not only do PhD supervisors have a crucial role to play in bridging academic cultures, their intercultural exchanges with international students on academic and non-academic matters are contributory factors towards supervisors' thinking development as well as broadening of perspectives (see Tran, Green, & Nguyen, 2017) – perhaps, a focus for a future study.

Finally, it is widely acknowledged that international education is a transformative experience. This study advocates that such transformation goes beyond the PhD study itself, however, challenging it is on its own. Continuous intercultural exchanges within and outwith academia as part of the

sojourn arguably leads to students' broadening their perspectives on academic-related as well as psychosocial-related matters. There is very little doubt that this makes international PhD education a highly challenging endeavour. Nevertheless, there is a strong argument that the greater the challenge is, the greater the potential for transformative learning awaits international PhD learners (and supervisors). It is also very encouraging to note that students and supervisors are in agreement that a combination of motivation, proactivity, curiosity and self-drive can far outweigh these challenges, with one supervisor contending: 'most people can do a PhD, it's not rocket science'.

References

Akkerman, S., Admiraal, W., Simons, R. J., & Niessen, T. (2006). Considering diversity: Multivoicedness in international academic collaboration. *Culture & Psychology, 12*(4), 461-485.

Andrews, A. (2015). Critical thinking and/or argumentation in Higher Education. In M. Davies & R. Barnett (Eds.), *The Palgrave Handbook of Critical Thinking in Higher Education* (pp. 49-62). New York: Palgrave Macmillan.

Baker, V. L., & Lattuca, L. R. (2010). Developmental networks and learning: toward an interdisciplinary perspective on identity development during doctoral study. *Studies in Higher Education, 35*(7), 807-827.

Bøgelund, P. (2015). How supervisors perceive PhD supervision–And how they practice it. *International Journal of Doctoral Studies, 10*, 39-55.

Brodin, E. M. (2014). Critical and creative thinking nexus: learning experiences of doctoral students. *Studies in Higher Education*, 1-19.

Bronfenbrenner, U. (2005). *Making Human Being Human: Biological Perspectives on Human Development.* Thousand Oaks, CA: Sage.

Carroll, J. (2015). *Tools for teaching in an educationally mobile world*. Abingdon, Oxon: Routledge.

Choy, S., Lin, M., & Singh, P. (2015). The Australian doctorate curriculum: responding to the needs of Asian candidates. *International Journal for Researcher Development, 6*(2), 165-182.

Church, S. E. (2009). Facing reality: What are doctoral students' chances for success? *Journal of Instructional Psychology, 36*(4), 307-316.

Davies, M. & Barnett, R. (Eds.) (2015). *The Palgrave Handbook of Critical Thinking in Higher Education*. New York: Palgrave Macmillan.

Diyanni, R. (2016). *Critical and Creative Thinking*. Chichester: John Wiley & Sons, Inc.

Dolin, J. (2016). Concerns with Using Test Results for Political and Pedagogical Purposes: A Danish Perspective. In S. Scott, D. E. Scott & C. F. Webber (Eds.), *Assessment in Education, Implications for leadership* (pp. 91-112). London: Springer.

Dysthe, O. (2002). Professors as Mediators of Academic Text Cultures. *Written Communication, 19*(4), 493-544.

Egege, S., & Kutieleh, S. (2004). Critical Thinking: Teaching Foreign Notions to Foreign Students. *International Education Journal, 4*(4), 75-85.

Ekelund, B. Z. (2010). Cultural Perspectives on Team Consultation in Scandinavia: Experiences and Reflections. *Scandinavian Journal of Organizational Psychology, 2*(1).

Elliot, D. L., Baumfield, V., & Reid, K. (2016a). Searching for 'a third space': a creative pathway towards international PhD students' academic acculturation. *Higher Education Research & Development, 35*(6), 1180-1195.

Elliot, D. L., Baumfield, V., Reid, K., & Makara, K. A. (2016). Hidden treasure: successful international doctoral students who found and harnessed the hidden curriculum. *Oxford Review of Education, 42*(6), 733-748.

Elliot, D. L., Reid, K., & Baumfield, V. (2016b). Beyond the amusement, puzzlement and challenges: an enquiry into international students' academic acculturation. *Studies in Higher Education, 41*(12), 2198-2217.

Flyvbjerg, B. (2006). Five misunderstandings about case-study research. *Qualitative inquiry, 12*(2), 219-245.

Forsberg, E., Hortlund, T., & Malmberg, K. (2016). The assessment culture of school leadership. *Nordic Studies in Education, 36*(02), 141-158.

Gardner, S. K. (2007). 'I heard it through the grapevine': Doctoral student socialization in chemistry and history. *Higher education, 54*(5), 723-740.

Hofstede, G. (1984). *Culture's consequences: International differences in work-related values* (Vol. 5): Sage.

Hopmann, S. (2007). Restrained teaching: The common core of Didaktik. *European Educational Research Journal, 6*(2), 109-124.

Hopmann, S., & Riquarts, K. (2000). Starting a dialogue: a beginning conversation between Didaktik and the curriculm traditions *Teaching as a reflective practice: The German Didaktik tradition* (pp. 3-11). London: Lawrence Erlbaum Associates, Publishers.

Jin, L., & Cortazzi, M. (2006). Changing Practices in Chinese Cultures of Learning. *Language, Culture and Curriculum, 19*(1), 5-20.

Kidman, J., Manathunga, C., & Cornforth, S. (2017). Intercultural PhD supervision: exploring the hidden curriculum in a social science faculty doctoral programme. *Higher Education Research & Development*, 1-14.

Kiley, M. (2003). Conserver, Strategist or Transformer: The experiences of postgraduate student sojourners. *Teaching in Higher Education, 8*(3), 345-356.

Kobayashi, S. (2014). *Learning dynamics in doctoral supervision.* (PhD Thesis), University of Copenhagen, Copenhagen, Denmark.

Kuhn, D. (2005). *Education for Thinking.* Cambridge, Massachusetts: Harvard University Press.

Lee, B., Farruggia, S. P., & Brown, G. T. L. (2013). Academic difficulties encountered by East Asian international university students in New Zealand. *Higher Education Research & Development*, 1-17.

Li, J. (2005). Mind or Virtue. Western and Chinese Beliefs About Learning. *Current Directions in Psychological Science, 14*(4), 190-194.

Lovitts, B. E. (2005). Being a good course-taker is not enough: a theoretical perspective on the transition to independent research. *Studies in Higher Education, 30*(2), 137-154.

Manalo, A., Kusumi, T., Koyasu, M., Michita, Y., and Tanaka, Y. (2015). In M. Davies & R. Barnett (Eds.), *The Palgrave Handbook of Critical Thinking in Higher Education* (pp. 299-316). New York: Palgrave Macmillan.

Manathunga, C., & Goozée, J. (2007). Challenging the dual assumption of the 'always/already' autonomous student and effective supervisor. *Teaching in Higher Education, 12*(3), 309-322.

McCormack, C. (2005). Is non-completion a failure or a new beginning? Research non-completion from a student's perspective. *Higher Education Research & Development, 24*(3), 233-247.

Midgley, C., Kaplan, A., & Middleton, M. (2001). Performance-approach goals: Good for what, for whom, under what circumstances, and at what cost? *Journal of Educational Psychology, 93*(1), 77.

Moos, L. (2013). Postlude: Wrap Up of the Argument. In L. Moos (Ed.), *Transnational Influences on Values and Practices in Nordic Educational Leadership: Is there a Nordic Model?* (pp. 213-223). Dordrecht: Springer Netherlands.

Moseley, D., Baumfield, V., Elliott, J., Gregson, M., Higgins, S., Miller, J., & Newton, D. P. (2005). *Frameworks for Thinking: A Handbook for Teaching and Learning*. Cambridge: Cambridge University Press.

PhD-School. (2016). *PhD School Annual Report 2016* Copenhagen, Denmark: University of Copenhagen, Faculty of Science. Retrieved from www.science.ku.dk/PhD/.

Pyhalto, K., Toom, A., Stubb, J., & Lonka, K. (2012). Challenges of becoming a scholar: A study of doctoral students' problems and well-being. *International Scholarly Research Network ISRN Education, 2012*, 1-12.

Robinson-Pant, A. (2009). Changing academies: exploring international PhD students' perspectives on 'host' and 'home' universities. *Higher Education Research & Development, 28*(4), 417-429.

Signorini, P., Wiesemes, R., & Murphy, R. (2009). Developing alternative frameworks for exploring intercultural learning: a critique of Hofstede's cultural difference model. *Teaching in Higher Education, 14*(3), 253-264.

Smith, J. A., & Osborne, M. (2008). Interpretative Phenomenological Analysis in Smith, JA (Ed.) Qualitative psychology: A practical guide to research methods. (pp. 53-79): London: Sage Publications.

van Egmond, M. C., Kühnen, U., & Li, J. (2013). Mind and virtue: The meaning of learning, a matter of culture? *Learning, Culture and Social Interaction, 2*(3), 208-216.

Virtanen, V., Taina, J., & Pyhältö, K. (2017). What disengages doctoral students in the biological and environmental sciences from their doctoral studies? *Studies in Continuing Education, 39*(1), 71-86.

Winchester-Seeto, T., Homewood, J., Thogersen, J., Jacenyik-Trawoger, C., Manathunga, C., Reid, A., & Holbrook, A. (2014). Doctoral supervision in a cross-cultural context: issues affecting supervisors and candidates. *Higher Education Research & Development, 33*(3), 610-626.

Wisker, G. (2005). *The good supervisor*. Basingstoke: Palgrave Macmillan.

Xu, L., & Grant, B. (2017). International doctoral students' becoming: A dialogic perspective. *Innovations in Education and Teaching International*, 1-10.

AAU. (2015). *Annual Report - Accelerating human development in Africa through higher education* Association of African Universities, Accra, Ghana: Association of African Universities. Retrieved from https://www.aau.org/.