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## **Emotional Learning and Identity Development in Medicine: A Cross-Cultural Qualitative Study Comparing Taiwanese and Dutch Medical Undergraduates**

Esther Helmich, MD, PhD, Huei-Ming Yeh, MD, MPH, Chi-Chuan Yeh, MD, MEd, Joy de Vries, MSc, Daniel Fu-Chang Tsai, MD, PhD, and Tim Dornan, MD, PhD

**E. Helmich** is Senior Researcher, Center for Education Development and Research in Health Professions, University Medical Center Groningen, University of Groningen, Groningen, the Netherlands.

**H.-M. Yeh** is Assistant Professor, Department of Anesthesiology, National Taiwan University Hospital, Taipei, Taiwan.

**C.-C. Yeh** is Attending Physician, Department of Medical Education/Department of Surgery, National Taiwan University Hospital, Taipei, Taiwan.

**J. de Vries** is PhD student, Center for Evidence-Based Education, Academic Medical Center/University of Amsterdam, Amsterdam, the Netherlands.

**D. F.-C. Tsai** is Professor, Research Institute of Medical Education & Bioethics, National Taiwan University College of Medicine, and Attending Physician, Department of Medical Research, National Taiwan University Hospital, Taipei, Taiwan

**T. Dornan** is Professor, School of Medicine, Dentistry and Biomedical Sciences, Queen's University, Belfast, UK.

Correspondence should be addressed to Huei-Ming Yeh, Department of Anesthesiology, National Taiwan University Hospital, No. 7, Chung-Shan South Road,

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Taipei, Taiwan; telephone: (886)-2-23123456, ext. 65512; email:

[y.y.hhmm@hotmail.com](mailto:y.y.hhmm@hotmail.com).

## **Abstract**

### **Purpose**

Our current knowledge about the interplay between emotions and professional identity formation is limited and largely based on research in Western settings. This study aimed to broaden understandings of professional identity formation cross-culturally.

### **Method**

In fall 2014, the authors purposively sampled 22 clinical students from Taiwan and the Netherlands and asked them to keep audio diaries, narrating emotional experiences during clerkships using the following prompts: What happened? What did you feel/think/do? How does this interplay with your development as a doctor? Dutch audio diaries were supplemented with follow-up interviews. The authors analyzed participants' narratives using a type of critical discourse analysis informed by Figured Worlds theory and Bakhtin's concept of dialogism, according to which people's spoken words create identities in imagined future worlds.

### **Results**

Participants talked vividly, but differently, about their experiences. Dutch participants' emotions related to individual achievement and competence. Taiwanese participants' rich, emotional language reflected on becoming both a good person and a good doctor. These discourses constructed doctors' and patients' autonomy in culturally specific ways. The Dutch construct centred on "hands-on"

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participation, which developed the identity of a technically skilled doctor, but did not address patients' self-determination. The Taiwanese construct located physicians' autonomy within moral values more than practical proficiency, and gave patients agency to influence doctor-patient relationships.

### **Conclusions**

Participants' different cultural constructs of physician and patient autonomy led them to construct different professional identities within different imagined worlds. The contrasting discourses show how medical students learn about different meanings of becoming doctors in culturally-specific contexts.

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Becoming a doctor means developing a new professional identity, or learning to think, act, and feel as a physician<sup>1</sup>. Despite increasing recognition that professional identity formation is the ultimate goal of medical education<sup>1</sup>, current understanding of this process is limited. Identity development may only become an issue when professionalism lapses arise. In the aftermath of such lapses, students' behavior may be judged without taking into account the culturally-determined norms, values, and emotions that contribute to professional identity. One such example, which we recently described,<sup>2</sup> is the case of Syrian-trained physician not adequately engaging in shared decision-making with patients in the Dutch health care context<sup>2</sup>. A better understanding of medical trainees' emotional experiences and the interrelatedness between these experiences and identity development within specific socio-cultural environments would allow mentoring to be more tailored and culturally sensitive, specifically addressing underlying values that may or may not be appropriate in a specific context<sup>3</sup>. Moreover, more knowledge about cross-cultural differences in medical professional identity formation could improve mutual understanding of medical students and professionals trained in different countries and cultures, and may inform recertification procedures for migrating physicians in a globalizing world<sup>2</sup>.

To explore the values and emotions that influence identity formation, we use the notion of personal identity as proposed by Hitlin<sup>4</sup>, who brings together identity theory and social identity theory by exploring underlying core values. These core values are simultaneously intensely personal and socially and culturally influenced<sup>4</sup>. Core values and conceptions of what is good behavior serve as a basis for the moral

self<sup>4</sup>. Thus, personal or moral identities are core to a person, and, therefore, can be highly emotional. In previous empirical work studying first-year medical students in their first clinical experiences, we have already explored this interplay between identity development and emotions<sup>5</sup>.

The aim of the current study was to explore emotional experiences and identity development in medical school in European and Asian cultural contexts. We proposed that moral and social forces in Western and Eastern cultures affect medical students' emotions and identity development in importantly different ways. A central notion within Western bioethics, as developed in Judeo-Christian traditions, is autonomy of the individual<sup>6</sup>. Eastern cultures, which are built on Confucian thought, place a strong emphasis on social relationships<sup>7,8</sup>. We expected to find that cultural differences in the experience and expression of emotions, norms, and values affect how students construct their different and shifting identities while becoming a doctor.

## **Method**

### **Ethical considerations**

For the Dutch part of this study, ethical review was granted by the ethical board of the Dutch Association for Medical Education. In Taiwan, ethical approval was obtained from the ethical committee of National Taiwan University Hospital.

### **Study paradigm**

The main framework for this study is a socio-cultural one, meaning that we conceptualise emotional experience as embedded in social practice. Learning medicine takes place in clinical settings during interaction with social agents (patients, nurses, doctors, and other students and health workers), artefacts (arrangements, instruments, electronic patient files), and symbols (language) over time; that is, these social practices are historically shaped<sup>9,10</sup>. It is within these socio-cultural environments that students experience emotions, learn to communicate them, and give meaning to them. While emotions are individually felt and interpreted, medical students are socialized persons who learn which emotions should be experienced and expressed, and to what extent, within specific medical contexts and cultural environments that have distinct norms and values. Because values pertain to specific situations and guide selection or evaluation of behavior and events<sup>4</sup>, as in our previous study<sup>5</sup>, we asked students to narrate and reflect on specific experiences that they perceived as being emotional.

### **Participants**

In the present 7-year post-secondary medical education program in Taiwan, clerkships take place in Years 5 and 6. In Taiwan, Year 5 students have initial patient experiences and Year 6 students have deeper contacts with patients. Students in Year 7 are in internships. Dutch students enter clerkships in Year 4 of a 6-year training programme in which their core clerkships are scheduled in Years 4 and 5.

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In Fall 2014, we purposively sampled Dutch and Taiwanese students who were enrolled in different core clerkships (i.e., internal medicine, surgery, paediatrics, ophthalmology, family medicine, and psychiatry), after having completed different clerkships in the months before, leading to a broad range of current and previous professional experiences. We included students across a range of age and gender, ensuring that the participants were representative of the student cohorts in the respective countries.

In qualitative research in general and discourse analysis in particular, a too-large amount of data may erode the quality of analysis, so we decided a priori that 10-12 participants from each country would be sufficient, anticipating that this would even lead to too much data for one analysis, but appreciating that this would offer a broad perspective to start with, before reducing the data set for final analysis.

### **Data collection**

We used audio diaries as the central method for data collection <sup>11</sup>, asking students to narrate emotional experiences using the following prompts: What happened? What did you feel/think/do? How does this interplay with your development as a doctor?

The audio diaries were recorded in Chinese by Taiwanese students and in Dutch by Dutch students. Taiwanese participants made at least three diary entries per week during the first four weeks (weeks 1-4) of Year 6. Dutch participants were also asked to keep at least three audio diary entries per week in the first four weeks of Year 5.

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These two periods for the two groups of students were the most directly comparable.

The length of the audio diary entries differed between the two student samples, with Taiwanese diary entries being much longer than those of Dutch students, leading us to carry out additional interviews with Dutch students. These interviews, also conducted in fall 2014, lasted between 40 and 60 minutes and were carried out by a Dutch PhD student (JdV), who asked students to recall the emotional experiences they narrated in their diaries and elaborate on those emotions and events. Although data collected in interviews may differ from those gathered in diaries, we deliberately chose to use this additional data collection to enrich our understanding of the experiences of the Dutch students, who appeared to be less reflective in their diaries than their Taiwanese colleagues, in order to facilitate subsequent analysis.

### **Selection and translation of data**

As stated above, qualitative research in general and discourse analysis more specifically may suffer from too much data, so we decided that only five diaries for each country would be included for in-depth analysis. The research teams in both countries first critically reviewed all 10 or 12 diaries from each country in the original language, listening to recordings and reading through transcripts. In order to reach a rich though concise data set, each local team selected the five diaries in which students most explicitly narrated and reflected on emotional experiences and the interplay with identity development. These diaries were translated into English by a professional translation company in Taiwan and a medical student in the

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Netherlands and were corrected or refined by members of the research team.

Participants were coded by country (“TW” for Taiwan or “NL” for the Netherlands) and a number. Table 1 shows demographic details of participants and a description of the final dataset.

### **Data analysis**

We used a type of critical discourse analysis that has its origins in Bakhtin’s discourse theory as described in an earlier publication<sup>12</sup>. There is a spectrum of discourse methodologies. Microlinguistic analysis, such as conversation analysis<sup>13</sup>, and macroanalysis, typified by Foucauldian discourse analysis<sup>14</sup>, can be regarded as opposite ends of the spectrum. Gee provided a set of discourse tools that sit between those extremes, directing attention to how choice of language at the level of sentences and paragraphs, and patterns of language usage within whole datasets, construct social practices<sup>15,16</sup>. In our previous study, and in the current one, we applied concepts from Figured Worlds theory<sup>17</sup> to investigate how people use different discourses available to them to construct their identities. Figured Worlds is a critical cultural theory, previously used within medical education to explore how individuals narrate and construct their identities within the social or “figured” world of medicine, relating to norms, values, language, emotions, and practices<sup>12,18,19</sup>. Within this theory, as applied to medical education, identity formation takes place in four different “discursive contexts,” defined as how people and the things they say create possibilities for identity formation: (1) a “figured” world, populated by patients, health care providers and other people; (2) positions, or status, granted to

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students, patients, and other “figures” in the world of medicine; (3) how people use language to “self-author” or create specific positions or identities for themselves; and (4) how they use language for “world-making,” or imagining future ideal worlds.

The analytical process entailed identifying blocks of text representing emotionally salient episodes, followed by analyzing those texts by episode and participant to allow the exploration of intra-individual as well as inter-individual patterns of response. To enhance trustworthiness and credibility of data analysis, the two Dutch lead researchers (EH, JdV) frequently discussed the decisions made in each step of the process, which was then separately reviewed and approved by the Taiwanese team. As a means to reach data triangulation, each team regularly returned to the full data set, in the original language. Following the premise that discourse analysis is not about understanding what participants meant to say, but about studying the language used to talk about experiences, we did not return to participants for a member check. Decisions made during data analysis and the evolving interpretations were discussed in Skype meetings with the whole team, including an experienced discourse analyst (TD). Table 2 and Chart 1 show the steps of data analysis and the template used.

All members of the research team have been trained as health care professionals; two members of the team hold PhDs in medical education (EH, TD) and one is a professor in Confucian ethics (DT). The Taiwanese members of the team have all lived in Europe or North America for some amount of time. To further facilitate cross-cultural understanding, the first author (EH) made a study visit to Taiwan.

## Results

### Figured worlds

Participants in both countries narrated many emotional experiences in the figured world of medicine, which strongly influenced their professional identity development. Participants from Taiwan figured lively worlds with many different doctors, nurses, peers, patients and relatives. Dutch students, in contrast, figured learning worlds with only one or two supervising doctors. Other health professionals, patients, and relatives were less prominent figures for the Dutch students. The rich variety of figures in the Taiwanese narratives included hard-working and dedicated doctors not having time for dinner, nurses supporting and covering for the students, and professionals quarrelling with patients; some patients were angry or behaved in rude, shameless, troublesome, and unreasonable ways while other patients were thankful and brought cakes as gifts. Dutch students mostly narrated practical aspects of becoming a doctor, focusing particularly on skills development. They had relatively little to say about what they observed in workplaces, and provided only limited reflections on how it would be to be doctors themselves.

Taiwanese students narrated how teachers inspired and supported their moral development, whereas Dutch students more often narrated their practical experiences in medical workplaces, and how doctors figured specific clinical roles:

As a student, it's marvellous to receive some stimulation provided by different teachers. Teachers from outside will provide a completely different

opinion from teachers in the medical centre. Stimulation of the teachers surpasses the course content sometimes. (TW3)

All week I had seen how the doctors puzzled and tried a hundred different things for that little child....I was impressed by the effort the doctors put in [for] that child. (NL2)

### **Positional identities**

Participants in both countries struggled with their positions as clinical students and felt extremely happy when opportunities to participate in patient care positioned them as doctors-to-be. Both groups described difficulties in their positions relative to clinical supervisors, who both taught and assessed them. Taiwanese participants spoke more about their relative positions in the clinical hierarchy than did Dutch participants. Taiwanese participants minimised their roles, lowering themselves and constructing minor positions. They were afraid of doing things wrong, disappointing elders, and making medical errors. They held their teachers in high esteem, expressing respect and gratitude for how teachers helped them cultivate self-discipline. Dutch participants, in contrast, constructed less lowly positions for themselves and were more critical towards their educators. They identified themselves as learners with legal and social rights to high quality teaching and ample opportunities for autonomous action. They said they should be entitled to rewards for being on the wards and that being a learner made it acceptable to make mistakes.

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Participants in both Taiwan and the Netherlands talked about unfavourable, non-participatory, positional identities, such as holding retractors during surgery. On the other hand, such social positions sometimes afforded learning opportunities:

What I did in the process was hold a retractor. Fortunately, I had a clear view of this surgery. The senior explained throughout the surgery. Because she was slow in the whole process, she had a lot of time to teach me. Another senior also had a lot of time to tell me the details. (TW1)

I absolutely fulfilled no role within the team, and I wasn't necessary because the roles were already divided, so I could, uh, yes, pretty calmly watch what happens exactly during a resuscitation. (NL2)

Although the positional identities and the ways participants responded to these were comparable in the two countries, Dutch participants' positions more often gave them a measure of autonomy:

What I thought the nicest part was that I was allowed to tell the news. (NL1)

Dutch participants tended to position patients as dependent and needing help. They did not refer to patients' capacity for self-determination. Taiwanese participants, in contrast, positioned patients as active agents from whom they had much to learn. On other occasions, Taiwanese participants displayed anger and impatience towards patients and felt frustrated by their behaviour. They spoke of how patients were

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rude and placed blame on people with low status, such as students, clerks, residents, and hospital administrators.

### **Self-authoring**

Whereas figured and positional identities are largely determined by social structures and other people's agency, it is by self-authoring that individuals are able to exercise agency as autonomous social actors. There were significant differences between how Taiwanese and Dutch participants authored their identities. These differences were apparent in how they spoke about self-cultivation, their possibilities for autonomous action, and their self-determination as medical trainees.

Participants from both countries authored themselves as compassionate towards patients, having a strong wish to care for vulnerable people, and developing strong and competent professional identities. Taiwanese participants tended to use richer language to author what it means to be a good doctor. Dutch participants authored a more limited identity focused on achievement and competence. In the process of becoming a doctor, participants from the two countries authored different types of autonomy. Dutch participants authored autonomous action and "hands-on" participation while Taiwanese participants authored autonomy through self-cultivation and developing strong professional values. From the more participatory position afforded by their education system, Dutch students were more likely to self-author an active and self-regulating identity:

This was such a "yes" moment. I felt confident about what I was doing, and it went well, and I did it on my own. I want to handle it like this more often

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during my internships! I myself was responsible for what was happening, and therefore I did have the control about what was happening. It was a great feeling! (NL5)

Taiwanese participants' self-authoring of competence was less directed towards personal achievement and more towards benefiting patients:

The fact that I'm better at asking questions is also a plus, so I was able to learn a lot of things from the patient that my predecessors weren't able to. This gave me a great sense of fulfilment naturally. I'm also glad to be able to help the patient learn more about his own illness with my knowledge. (TW4)

### **World-making**

Cultural values were most apparent in discourse that constructed ideal worlds, particularly regarding doctor-patient or student-teacher relationships. It was only in the narratives of the Taiwanese participants that we found explicit speech about self-determination of patients, for example when they explained why doctors should be very careful in breaking bad news:

The patient and his father did not seem to respond to the doctor emotionally upon hearing these words, though I was astonished.... When I become a doctor in the future, I shall break bad news to my patients tactfully. For instance, I could write down the name of the disease in English and hand it to them, so that they would be able to check online instead of having me tell them directly, like, "Oh this is Progressive Sclerosing Disease." I would say

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there are possible ways to give hints to the patients, so that they would know the situation and be prepared mentally. (TW5)

Although we know from our own professional experience that patient autonomy and shared decision making are valued ideals in the discourse of Dutch health care, this was not expressed in the narratives of our Dutch participants.

Participants in both countries discursively explored how to develop appropriate relationships with patients and become good doctors and teachers in future worlds:

There needs to be a fine line between doctor and patient, no matter how lovely the patient may seem. Maintaining this kind of clear line is especially important in the Psychiatry Division. I'm a doctor, you're a patient—this is something we constantly have to remind ourselves of. We must always remember the existence of the line, and draw it well. If you're able to draw the line in just the right way, it almost becomes an art. (TW4)

What I've learned from today is when...I'm going to supervise interns...that even interns can make little mistakes and it's annoying enough to them and it's really comfortable if you don't immediately get mad at them and it's good to be strong. (NL2)

I could recall a book that touched me very much.... The reason why I mentioned this is because I consider myself a beneficent person, too; or, to

be more accurate, I am a person hoping for justice and fairness for everyone, and no one should be discriminated. (TW5)

Students in both Taiwan and the Netherlands addressed largely the same issues, but used different language, resources, and ways of reflecting.

## **Discussion**

In the process of becoming a doctor, medical students experience a lot of emotions originating from the figured worlds they are entering, the positions they are granted and allow to others, the identities they envision for themselves, and the “ideal” worlds they imagine for the future. In different cultures, students imagine different worlds and different future identities, reflecting and responding to different cultural constructs of both student and patient autonomy.

### **Underlying values**

Although the Netherlands can by no means represent the whole Western world, or even the entirety of Northwest Europe, and Taiwan will never be able to represent the whole Asian or East Asian world, our findings lead us into some underlying values reflecting two different major moral systems: western bioethics and Chinese Confucianism. During education and practical training, students learn about and observe different values and conceptions of what is good behavior, which will result in the development of a moral self.

**Autonomy and moral development.** We found significant differences in how participants, as autonomous social actors, exercised agency in the two contexts. Dutch students in our study strongly focused on achievement and competence. They emphasized the importance of autonomous action and participation in “hands-on” practice, which is needed to become a skilled doctor who, as a medical expert and competent communicator, is able to care for patients. They authored themselves as autonomous, self-regulating learners, having clear ideas about the skills needed to be a good doctor and how to pursue those. Although empirical evidence shows that Dutch students in real practice are often not able to engage fully in self-regulated learning<sup>20</sup>, the narratives of the students clearly build upon current dominant discourses around competence or outcomes-based medical training<sup>21</sup>, self-directed or self-regulated learning<sup>22</sup> and the (Western) cultural ideal of the rational, self-conscious, autonomous individual<sup>6,23,24</sup>.

Taiwanese students were found to engage more in reflective observation, highly valuing the inspiration and moral education provided by teachers and the life experience and wisdom shared by patients. Their speech contained very rich language, reflecting underlying moral values related to becoming both a good person and a good doctor, explicitly striving for “doing good,” and contributing to society. Although their self-determination as medical trainees might be less visible at first sight, the emphasis on moral development rather than on practical skills training can be considered a different way of expressing autonomy. “Being a good person before becoming a good doctor” has been commonly emphasized in recent medical education reform in Taiwan. The cultural values of Taiwanese society are much

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influenced by the Confucian philosophy whose educational goal is to cultivate altruistic gentlemen, “*chun-tze*”, who are committed to both moral self-cultivation and social-political welfare promotion <sup>24</sup>. A distinctive and representative slogan of ancient Chinese medical ethics, “*jen-hsin-jen-shu*” (“a heart of humaneness, the skill of humaneness”), reflects fully its foundation of Confucian ethics. Respecting teachers and adhering to the “*dao*” (“the righteous way”) is also a Confucian saying generally taught since childhood. This might explain partly why the reflective narratives of Taiwanese students so much emphasized “doing good”, “contributing to society,” and “appreciating teachers”. The virtue ethics characteristic of Confucian philosophy understandably contributes to such “good doctor” cultivation reflection.

**Autonomy and relatedness.** Participants’ different cultural constructs of physician and patient autonomy located self-determination to a greater or lesser extent in relationships with other people. In the Taiwanese diaries, there was a lot of reference to other people, and a lot of “we”-talk. In contrast, Dutch students seemed to refer more often to “I,” and place more emphasis on their personal achievement. Taiwanese students included many different people, such as teachers, older schoolmates, clinical supervisors and patients. They were reflecting much more about the role of other people, and in particular their role towards patients, than Dutch students did.

There are certain underlying values in Confucian ethics that might be relevant here. Tao quotes Liang’s observation that, “In the Chinese thinking, individuals are never recognized as separate entities; they are always regarded as part of a network, each

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with a specific role in relation to others”<sup>25</sup>. Tu argues that “self” in the classical Confucian sense is both the center of relationships and a dynamic process of spiritual development<sup>26</sup>. Tsai also interprets the Confucian concept of persons as two-dimensional—the vertical dimension (the autonomous, self-cultivating one) and the horizontal dimension (the relational, altruistic one).<sup>24</sup> The concept of relational personhood plays an important role in Taiwanese doctor-patient relationship<sup>24</sup>. Therefore, it is conceivable that Taiwanese students included other members in their reflective diaries more than their Dutch counterparts, and their identities expressed were more in the thinking of “we” rather than merely “I”. The person-in-relationship became a distinctive feature in the Taiwanese group.

This also pertains to what Taiwanese students mentioned in their narratives about breaking bad news. In the Netherlands, underlying ethical or professional norms and values, such as patient autonomy, honesty, and shared decision making, lead to a frank disclosure of even a very bad diagnosis directly to the patient as an individual. The underlying values in Taiwan are different, pertaining to the patient as a member of their family and broader social group, or a person-in-relationship, which results in always having a “third witness” in the room, and breaking bad news indirectly, for example via family members.

Dutch students did not make much reference to relationships, nor did they make explicit moral statements. Nevertheless, in particular in their self-authoring and world-making, they expressed a strong wish to care for other people, phrased as the need to develop the competence needed to actually take responsibility.

### **Implications for medical education**

Student narratives can be considered a window to medical practice. By engaging in a detailed study of medical education systems in different parts of the world, we can learn a lot about different ethical systems, about different cultural values, and about what it means to become a doctor or to be a good medical professional in different societies. These understandings may help advance the medical education field by explicating the different values that inform notions about professionalism all around the world and by broadening our insight into how professional identity formation works and how it is influenced by context. This has the potential to enhance the recognition and appreciation of cultural differences and stimulate the development of culture-specific interventions, for example, in considering the affordances of reflective observation versus active participation. The present study clearly shows the value of both ways of learning, especially related to different underlying cultural values. We would like to suggest that both students and medical educators from the two countries can learn from each other. The learning process of students in the Netherlands might be deepened by providing more ethical education in secondary school or medical school, and by provoking discussion about what it means to be a good doctor. For Taiwanese students, who easily engage in reflection and are very good at expressing their thoughts and values, but who show less agency in the clinical environment, more focus on experiential learning might enhance their learning process.

### **Limitations and suggestions for future research**

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Professional identity development clearly is context-specific. Our research provides a detailed study of this process and its underlying values in two different countries. Our results are based on a rather small data-set, which is typical for this type of discourse analysis, but allows for an in-depth approach. Our interpretations were informed by the use of a strong theoretical framework, and by intense discussions and site visits by members of the research team. As the first author is Dutch (EH), however, the presentation of the results in this paper, unavoidably will be from a Western perspective. When I (EH), for example, think about autonomy, I do so from my Dutch background and experience in medical practice and medical education, and will use this personal understanding as a point of reference. A Taiwanese first author might have started with describing Confucian philosophy, and might have chosen one of the core notions from this moral system for reference. Therefore, we suggest that more research needs to be done in different countries and cultures, with different research teams and with different first authors, in order to further increase our understanding of identity development in different cultures <sup>2</sup>.

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*Ethical approval* : For the Dutch part of this study, ethical review was granted by the ethical board of the Dutch Association for Medical Education (file numbers 279 & 466). In Taiwan, ethical approval was obtained from the ethical committee of National Taiwan University Hospital (file number 20130864RINB).

## Reference list

1. Cruess RL, Cruess SR, Boudreau JD, Snell L, Steinert Y. Reframing medical education to support professional identity formation. *Acad Med.* 2014;89:1446-1451.
2. Helmich E, Yeh H-M, Kalet A, Al-Eraky MM. Becoming a doctor in different cultures: towards a cross-cultural approach to supporting professional identity formation in medicine. *Acad Med.* 2017;92:58-62.
3. Sawatsky PA, Parekh N, Muula AS, Mbata I, Bui Th. Cultural implications of mentoring in sub-Saharan Africa: a qualitative study. *Med Educ.* 2016;50:657–669
4. Hitlin S. Values as the core of personal identity: Drawing links between two theories of self. *Soc Psychol Q.* 2003;66:118-137.
5. Helmich E, Bolhuis S, Dornan T, Laan R, Koopmans R. Entering medical practice for the very first time: emotional talk, meaning and identity development. *Med Educ.* 2012;46:1074-1086.
6. Singer P. *Practical ethics.* Cambridge: Cambridge University Press, 1979:86.
7. Tsai DF. The bioethical principles and Confucius' moral philosophy. *J Med Ethics* 2005;31;159-163.

## Research Report

8. Ho MJ, Lin CW, Chiu YT, Lingard L, Ginsburg S. A cross-cultural study of students' approaches to professional dilemmas: sticks or ripples. *Med Educ.* 2012;46:245-56.
9. Lave J, Wenger E. *Situated learning. Legitimate peripheral participation.* New York: Cambridge University Press; 1991.
10. Wenger E. *Communities of Practice. Learning, Meaning, and Identity.* Cambridge: Cambridge University Press; 1998.
11. Monrouxe LV. Negotiating professional identities: Dominant and contesting narratives in medical students' longitudinal audio diaries. *Curr Narr.* 2009;1:41-59.
12. Dornan T, Pearson E, Carson P, Helmich E, Bundy C. Emotions and identity in the figured world of becoming a doctor. *Med Educ.* 2015;49:174-185.
13. DelaCroix A and Skelton J. The simulation game: an analysis of interactions between students and simulated patients. *Med Educ.* 2013;47:49–58.
14. Whitehead C, Kuper A, Freeman R, Grundland B, Webster F. Compassionate care? A critical discourse analysis of accreditation standards. *Med Educ.* 2014;48:632-43.
15. Gee JP. *How to do discourse analysis. A toolkit.* 2nd Edition. New York: Routledge; 2014.

## Research Report

16. Gee JP. An introduction to discourse analysis. Theory and Method. 4th Edition.

New York: Routledge; 2014.

17. Holland D, Lachicotte W Jr, Skinner D, Cain C. Identity and Agency in Cultural

Worlds. London: Harvard University Press 1998.

18. Hill E, Solomon Y, Dornan T, Stalmeijer R. 'You become a man in a man's world': is there discursive space for women in surgery? *Med Educ*. 2015;49:1207–1218

19. Van Lankveld T, Schoonenboom J, Kusurkar RA, et al. Integrating the teaching role into one's identity: a qualitative study of beginning undergraduate medical teachers. *Adv Health Sci Educ Theory Pract*. Published online ahead of print June 18, 2016. doi:10.1007/s10459-016-9694-5

20. Berkhout JJ, Teunissen PW, Helmich E, van Exel J, van der Vleuten CP, Jaarsma DA. Patterns in clinical students' self-regulated learning behavior: a Q-methodology study. *Adv Health Sci Educ Theory Pract*. Published online ahead of print May 27, 2016. DOI: 10.1007/s10459-016-9687-4.

21. Lingard L. What we see and don't see when we look at 'competence': notes on a good term. *Adv Health Sci Educ Theory Pract*. 2009;14:625.

22. Kusurkar RA, Croiset G. Autonomy support for autonomous motivation in medical education. *Med Educ Online*. 2015;20:27951. DOI: 10.3402/meo.v20.27951.

## Research Report

23. Fletcher J. Indicators of humanhood: a tentative profile of man. The Hastings Center Report 1972;2:5

24. Tsai DF. How should doctors approach patients? A Confucian reflection on personhood. J Med Ethics. 2001;27:1:44-50.

25. Tao J. The moral foundation of welfare in Chinese society: between virtues and rights. In: Becker GK, ed. Ethics in Business and Society: Chinese and Western Perspectives. Hong Kong: Springer; 1997:9-24

26. Tu WM. Confucian Thought: Selfhood as Creative Transformation. Albany, NY: SUNY Press; 1985:113.

**Table 1****A Summary of the Participants and Data Included in a Discourse Analysis of Dutch and Taiwanese Medical Students' Reflections on Emotional Experiences and Professional Identity Formation, 2014**

Participant	Gender	Age	No. of selected episodes in Step 3 of the analysis <sup>a</sup>
TW1	Male	23	16
TW2	Male	28	7
TW3	Male	24	4
TW4	Male	24	12
TW5	Female	24	8
NL1	Male	25	17
NL2	Female	25	15
NL3	Female	23	6
NL4	Male	24	8
NL5	Female	23	9

Abbreviations: TW indicates Taiwan; NL, the Netherlands.

<sup>a</sup>For a description of the steps involved in data analysis, see Table 2.

**Table 2****Summary of the Data Analysis in a Study of Dutch and Taiwanese Medical Students' Reflections on Emotional Experiences and Professional Identity Formation, 2014**

Step	Description	Author(s) who completed the step
1	Close reading of full Taiwanese data set and purposively selecting 5 diaries for translation into English. Criteria for selection were richness and diversity of data.	HMY/CCY
2	Close reading of full Dutch data set and purposively selecting 5 students for additional interviews; subsequent translation of diaries and interviews into English. Criteria for selection were richness and diversity of data.	JdV/EH
3	Identifying blocks of text for inclusion in the analysis from the previously selected 5 Taiwanese and 5 Dutch participant data. To be included, any piece of material was required to: <ul style="list-style-type: none"> <li>- narrate a specific event rather than make a general statement;</li> <li>- report the occurrence of one or more expressions of emotion;</li> <li>- contain sufficient speech to allow the analysis of the situation in which a respondent found him or herself and give the reason why the situation was emotional; and</li> <li>- refer to an experience of becoming a doctor.</li> </ul>	JdV/EH
4	Reaching agreement on final data set through close reading of the selected excerpts: <ul style="list-style-type: none"> <li>- Taiwanese data (translated from Chinese into English) and</li> <li>- Dutch data (translated from Dutch into English).</li> </ul>	HMY/CCY
5	Selecting the 3-4 most telling episodes for each participant to be included in the templates and copying the whole text of each episode into a template, <sup>a</sup> to structure the application of the Figured Worlds concepts.	JdV/EH
6	Approving selection for Figured Worlds analysis.	HMY/CCY/TD
7	Independently analysing selected episodes, reviewing each other's templates, resolving differences by discussion, and agreeing on interpretation.	JdV/EH
8	Critically reviewing the templates/analyses, suggesting revisions, enriching final interpretation.	HMY/CCY/TD
9	Organizing and condensing data, resulting in a synthesis for each individual participant.	EH
10	Critically reviewing the 10 participants' syntheses.	HMY/JdV/CCY/TD

Abbreviations: HMY indicates Huei-Ming Yeh; CCY, Chi-Chuan Yeh; JdV, Joy de Vries; EH, Esther Helmich; TD, Tim Dornan.

<sup>a</sup>Chart 1 shows the template used in Step 5.

**Chart 1**

**Template for Figured Worlds Analysis in a Study of Dutch and Taiwanese Medical Students' Reflections on Emotional Experiences and Professional Identity Formation, 2014**

<b>Participant number, Episode number, Descriptive title</b> <i>(Example: Participant 4, Episode 3, "Doing everything wrong")</i>			
<b>Full text of episode</b> <i>[Please include full text of episode here]</i>			
<b>Situation</b>		<i>[Please provide a concise summary of the situation]</i>	<i>[Please insert the fragment of text on which the analysis is based]</i>
<b>Emotions</b>		<i>[Please list the salient emotions in this episode]</i>	<i>[Please insert the fragment of text on which the analysis is based]</i>
<b>Reason situation was emotional</b>		<i>[Please describe]</i>	
<b>Figured Worlds Interpretation</b>	Figured Identity	<i>[Please describe]</i>	<i>[Please insert the fragment of text on which the analysis is based]</i>
	Positional Identity	<i>[Please describe]</i>	<i>[Please insert the fragment of text on which the analysis is based]</i>
	Self-authored Identity	<i>[Please describe]</i>	<i>[Please insert the fragment of text on which the analysis is based]</i>
	World making	<i>[Please describe]</i>	<i>[Please insert the fragment of text on which the analysis is based]</i>
	Relationship to affect	<i>[Please describe]</i>	<i>[Please insert the fragment of text on which the analysis is based]</i>
<b>Summary</b>			