Using Narratives to Create a Framework to Analyze Professional Growth of Third Year Medical Students

Pamela Duke[1], Christina Cestone[2], Amy Baranowski[3], Suely Grosseman[4], Honghe Li[5], Diane Gottlieb[6], Dennis Novack[7]

Corresponding author: Dr Pamela Duke pamela.duke@drexelmed.edu
Institution: 1. Drexel University College of Medicine, 2. Drexel University College of Medicine, 3. Drexel University College of Medicine, 4. Federal University of Santa Catarina, 5. China Medical University, 6. Drexel University College of Medicine, 7. Drexel University College of Medicine
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Abstract

Purpose: To create a framework for analyzing student narratives relating to professional growth in their third year of medical school.

Method: Using a qualitative approach, we examined 32 student narratives in a professionalism course, and analyzed them in three phases: 1) open coding 2) categorical consolidation and 3) thematic analysis.

Result: Three main themes were identified in third year student narratives: 1) Physician-Patient & Family Relationships 2) Learning Environment and 3) Self-Identity in Relationship to Teams. Based on student narratives the authors created a framework for narrative analysis referencing work from learning development theory and prior understanding of professional formation.

Conclusion: A professional growth framework was developed using qualitative analysis of students’ voices in self-reflection narratives during third year clinical clerkships. We believe this framework will be helpful to educators in understanding the process of professional formation and be useful as an analysis scheme for further studies of professional formation.

Keywords: Professionalism; professional formation; medical education; narrative reflection; third year medical student

Introduction
The third year of medical education is a critical period in the development of the professional identity of a student physician. Upon entering medical school, many students take the Hippocratic Oath in a white coat ceremony and begin the journey of understanding the professional responsibilities and the new identity of a practicing physician. As students transition from pre-clinical work to working as "clerks" in the third year of medical school, their professional identity is further created and molded by experiences they have with patients, patients' families, the medical team and the entire health care system (Treadway & Chatterjee 2011; Karnieli-Miller et al. 2010). The "hidden curriculum" is comprised of the institutional and medical cultural factors that shape what students learn outside the formal curriculum and includes informal social processes, rituals, role modeling by mentors, informal conversations and interactions among the health care teams and peers (Hafferty 1998). Educators know the hidden curriculum is important in shaping students' professional identities but are still learning about the factors that contribute to this process (Cruess et al. 2015, Holden et al. 2012). This paper examines third year students' narratives in a professionalism course in order to understand the process of professional identity formation during that critical year of training. Our goal is to analyze these narratives in order to create a framework of professional growth which we hope will enable faculty to create effective teaching moments on the path of students' professional identity formation.

Background

Professional Identity Formation Frameworks

The teaching of professionalism has been organized into frameworks that attempt to foster curriculum development and the assessment of professionalism. Irby & Hamstra outline three frameworks as: virtue based, behavior based and identity formation based (Irby & Hamstra 2016). Virtue-based professional formation is "person-centered" with an individual working to embody and demonstrate the qualities of compassion, respect, and application of moral and ethical reasoning. (Irby & Hamstra 2016). Behavior based professional formation focuses on the demonstration of professional competence in clinical arena with use of milestones and competencies. (Holden et al. 2012) Identity based is seen as students developing a professional identity within a "learning context", and focuses on the processes of socialization into the practice of medicine. In other words, medical students are outside the fraternity of medicine when they first begin training but through their experiences, such as in the third year clerkships the student moves into understanding the cliques and subtexts of the medical community.

We concentrated on an identity-based framework to initiate our understanding of students' narratives. Richard and Sylvia Cruess have described a paradigm of professional identity formation that includes psychological theories of individual moral development and social identity theory as they contribute to professional development. (Cruess et al. 2015) The factors that they discuss include broad categories of mentors and role models as well as clinical and non-clinical experiences. In our analysis, we seek to expand this work, by examining students' clinical experiences using their own words. Through a thematic analysis of narratives, we report a descriptive model of the factors involved in professional identity development.

Several authors have examined students' narratives to elucidate the components of the hidden curriculum that impact professional development. (Branch 2005, Gau Berg, Batalden, Sands & Bell 2010, Karnieli-Miller et al. 2011). In addition, a study done at Indiana University used thematic analysis of narratives during an internal medicine rotation to assess categories within the hidden curriculum into two domains, medical-clinical interactions and teaching and learning environment (Karnieli-Miller et al. 2010). We extend this type of qualitative work through an analysis of narratives to examine more explicitly how professional development is experienced from the student's perspective during the third year of medical school within a professional formation curriculum.
Drexel University College of Medicine Professional Formation Curriculum

The anchoring educational component of Drexel's professional formation curriculum are small group discussions that support self-reflection and opportunities to discuss professionalism issues that affect students in the clinical years (Chou et al 2011, Rosentyal et al 2011). Because students are distributed among 21 affiliates, faculty facilitate these groups virtually, using Google Hangouts, and an online learning management system. The professionalism course is a required experience in the 3rd year medical student curriculum.

The student body of 264 third year students is divided into longitudinal groups that form in the first year of school and continue in second year, developing a safe space for sharing personal experiences. These same groups meet throughout 3rd year with clinical faculty facilitators, not involved in their grading, to discuss topics that are part of the hidden curriculum and personal awareness (Duke, Grossman, Novack & Rosenzweig, 2014).

Each virtual discussion session requires preparation of a short narrative by students, who post it to the small group’s electronic bulletin board 24 hours prior to the session where it will be discussed with peers and faculty (DasGupta & Charon 2004). There are four 75-minute sessions with different prompts for each session. Every session has a discrete theme, selected by the Course Director and key faculty facilitators, encompassing the breadth of challenging experiences students may confront during the clinical clerkship period. (Table 1).

Table 1: Narrative Prompts for Professionalism Course

| Sequence | Narrative Topic | Prompt Description |
|----------|----------------|--------------------|
| Prompt 1 | Adaptation & Stress | Identify a personally significant experience that you have had in your clerkships using the theme of Adaptation and Stress as a third year medical student |
| Prompt 2 | Honesty: Witnessing Unprofessional Behavior; Moral Distress | Identify a personally significant experience that you have had in your clerkships using the theme of honesty and error as a third year medical student. |
| Prompt 3 | Guide: Resilience, Meaning & Compassion | Identify a personally significant experience that you have had in your clerkships in which you made a difference for a patient or a colleague. How does what you accomplished reflect on your core values? What strengths did you use within yourself to do this? |
| Prompt 4 | Death and Dying | Identify a personally significant experience that you have had in your clerkships using the theme of being with patient(s) at the end of life. |

Faculty are trained in facilitation and appreciative debriefing approaches. The appreciative approach is based on the theory developed for the improvement in a business environment by David Cooperrider and now used in the health care arena. (Hammond 2013, May et al 2011) Faculty debrief these sessions by asking students to consider what worked the best and think about how to repeat that success. This type of debrief encourages commitment and...
affirmation and provides a positive frame for the group to conclude the small group session. Facilitators ask each student to make an appreciative comment relating to the questions, "What do they feel good about this block or what or whom do they appreciate in this small group session?" or "What did they learn and feel was important to them in this session?"

Methods

Study design and participants

This study was qualitative and the participants were 264 third year medical students of Drexel University College of Medicine enrolled in the professionalism formation program, rotating in six core clerkships, Family Medicine, Internal Medicine, Obstetrics and Gynecology, Pediatrics, Psychiatry, and Surgery across 21 clinical sites.

Ethics

The study was approved by Drexel University's Institutional Review Board for Human Experimentation (University Protocol #1604004495). All 264 third year students enrolled at the beginning of the 2016 school year at Drexel University College of Medicine were eligible and invited to participate in the study. During the course orientation, faculty explained that the purpose of the study was to assess professional growth in third year medical students through analysis of a sample of their narratives, that their information would be de-identified by a disinterested staff member (T.D.) who would assign a case number to their narratives (numbers were substituted for students' names, which were known only by the staff person who entered the data), participation was completely voluntary and they could withdraw from the study at any time. A total of 139 students consented to participate in the study.

Data collection

For the first narrative prompt in the curriculum, students received instructions to identify a personally significant experience in the clerkships within the theme of Adaptation and Stress. All prompts received through the year are described in Table 1. Instructions for the narrative were explicit. We asked students to engage in critical reflection using a modified Gibbs Reflective Cycle (Gibbs), including six components: 1) Description: telling briefly about what happened 2) Response: writing about thoughts and feelings at the time of the event 3) Perspective of time: upon reflection, what details do you recall more clearly or stand out to you in some new way 4) Analysis: explain what made this a particularly strong event 5) Choices: explain what other responses or actions might have been available to you at the time or what/how your response may have been different and 6) Appreciate: what value can you take away from the experience. And how did you learn or how did you grow from it. Based on this revision we refined a pictorial model for reflection that demonstrates how reflection can be used to help with professional growth (Figure 1). Students were not always successful in responding to or documenting the six components within each narrative. Students were not graded on their writing style or whether they had all components in the narrative, but the narratives were required. All students received the same first prompt at the same point in the third month of the third year of clerkship rotations.
Data Analyses

Using the first prompt a total of 32 narratives were analyzed in three phases: 1) open coding 2) categorical consolidation, and 3) thematic analysis. A code is a word or very short phrase that assigns a summative, salient point or captures the essence of the narrative text (Saldana 2015). Open coding refers to the fact that no a prior coding scheme was used for this first phase of the analysis. The first phase of coding was open coding of 32 (30%) student reflective narratives from the first session. A staff member (TD), not involved in narrative coding, selected every third narrative and assigned it a participant number. The process for open coding was discussed and agreed upon by all members of the team. Working in dyads, researchers independently coded the narratives, then met to discuss the codes that were generated. Initial codes were entered into NVivo (QRS International, Burlington, MA), a qualitative analysis tool. The second phase of the analysis involved two steps in order to consolidate the original grouping the codes into a simplified schema and examining the resulting codes in two teams, who looked for categories with supporting textual evidence. Each team analyzed 54 codes. The research team met, reviewed the codes and collectively agreed to synthesize the two groupings from Team A and Team B into the resulting categories. Phase three of the analysis process synthesized more concise categories to allow for thematic organization of the evidence.

Trustworthiness

Trustworthiness is a measure of reliability in qualitative research. Trustworthiness is achieved through a variety of means including: longitudinal engagement in the study, external review, member checks, focus group, and triangulation of data (Lincoln & Guba 1985). Independent narrative analysis, dyad review and discussion, and research team consensus were steps taken to ensure trustworthiness of coding and consolidation of data. This project took over a year of deliberate inter-rater coding. The structure of the research team were interdisciplinary with different perspectives of student education: medical clinicians, medical student, PhD in assessment and
educators from US, China and Brazil.

**Results**

The first phase of coding resulted in 176 codes. Duplicate codes were removed leaving 146 codes. In the second phase of the analysis, of the 146 codes, 38 had insufficient data or unclear statement fragments and these codes were removed from further analysis. We split the list of the remaining 108 codes and the teams independently consolidated the data into categories. Team A looked at 54 codes and consolidated them into the following categories: biopsychosocial aspects of care, reflection on emotion, interdisciplinary aspects of care, acculturation and adaptation, reflection on patient experience. Team B consolidated their list of codes into the categories of: role of the student on the team, emotional reaction to family of patient, role of physician, students' empathy toward family or patient, limits of medicine, engagement in work, patient discomfort.

From these consolidated grouping from each team, categories of experiences were unified into 8 themes by the entire research team: 1) *emotions* that were positive (+) or negative (-); 2) the *physician -patient relationship*; 3) *patient-family perspective*; 4) *identity formation into a physician* that was a positive or negative experience toward that end; 5) awareness and impact of *learning climate* that was a positive or negative experience. The teams tested these categories by blinded reviewing of the evidence from the narratives. The positive and negative event referred to whether or not the experience the student described was reinforcing (+) or a maladaptive experience (-). For example, one of the teams had ten codes that reflected specific emotional reactions students expressed in response to patient care experiences. These reactions included embarrassment, excitement, fear, frustration, guilt, fascination with the patient, disapproval, and the feeling of human connection. These codes were consolidated under the broad category of "emotion", using supporting evidence from the narratives. (Table 2)

**Table 2. Consolidation of Codes into Categories.**

| Category                          | Example of Codes within Category                      | Frequency/Percent |
|-----------------------------------|------------------------------------------------------|-------------------|
| Emotions+                         | Amazement, Inspired, Relief                          | 6 (5.6%)          |
| Emotions -                        | Sadness, Dread, Embarrassed                          | 16 (15%)          |
| Physician/Patient relationship    | Common Humanity, Communication, Fear, Humbling, Human Connection, Patient Trust | 26 (24.5%)        |
| Reactions to Patient/Family       | Avoidance, Confusion, Powerlessness                   | 6 (5.6%)          |
| interactions                      |                                                      |                   |
| Identity Formation into Physician + | Collaboration, Inspired, Reframing                  | 26 (24.5%)        |
| Identity Formation into Physician - | Conflict, Frustration, Guilt, Limitations            | 12 (11.3%)        |
| Awareness and Impact of Learning Climate+ | Open-mindedness, Help seeking                        | 3 (2.8%)          |
| Awareness and Impact of Learning Climate- | Scared, Boundaries, Disrespect, Hierarchy, Guilt | 11 (10.4%)        |
In phase three, the physician/patient and physician/family categories were combined into Physician-Patient & Family Relationship. The Learning Environment category was maintained and we defined this more precisely as including the institutional and global medical cultural influences including factors contributing to the formal and informal curriculum. (Hafferty 1998, 2015, Hafler et al. 2011)

Finally the third category of identity formation of physician was renamed Self Identity in Relationship to Teams which included students narratives about themselves and their roles as a student's/training physician in the medical hierarchy, with interprofessional teams, physician mentors and with peer relationships. The combining of these two concepts was intentional as the idea of “Who am I?” and self-identity is seen by students in relationship to others in the context of the medical culture. Because emotions were ubiquitous to many narratives they were not considered a category of professionalism, the researchers removed this category. (Table 3)

Table 3. Themes with evidence sample from prompt one on adaptation and stress.

| Category                        | Narrative Examples                                                                                                                                                                                                                                                                                                                                 |
|---------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Learning Environment            | On a daily basis, I heard all levels of surgical residents complain daily and in a very disrespectful way about things that people in a number of different specialties, especially emergency medicine and internal medicine had done to inconvenience them. During my family medicine rotation last month, I had the great pleasure of meeting some great people. The attendings, residents, nurses, and patients all worked together like an efficient team solving any problems that came their way. One of the challenging aspect of third year that particularly stood out to me and set third year apart from the first two years of medical school is perhaps the understanding the reality and limitations of medicine. The attending surgeon recounted the story to his chief resident who then felt it appropriate to tell me that millennials were weak and that she knows her spoiled daughter will be just like me and need coddling. |
| Self-Identity in Relationship to Teams | Of all the prospective learning matters I had imagined for my 3rd year of medical school, I had not anticipated ever being in a situation where I would be the one learning to cope with what was happening around me. I had not anticipated being in denial of a new diagnosis or understanding a terminal illness treatment plan. I was supposed to be doing the consoling, because that is what we were trained in: encouraging conversation, showing empathy, and being patient. Having been my first delivery, I now believe I can better participate and work with the nurses when something is urgently in need. In addition, I think that this event helped put things in perspective and made me realize that I can stay focused and calm even when things are out of my control or understanding. This was definitely a learning experience and good clinical exposure from which I can grow. The nurse doing compressions started to get tired and the first person she looked at was me. The called me in to do chest compressions. I was ready to be called in but felt tremendous pressure when she called on me. I fought my way through the crowd of people and made it next to the patient. This would be my first time doing compressions on a real person. |
Prior to seeing psychiatric patients, I took implicit patient trust of an aspiring healthcare professional for granted. But now I am finding myself trying to break down how trust is generated, and how I can try to elicit that response even in the most fearful patients as quickly as possible.

My initial thought after speaking to the patient’s mother and hanging up the phone was "How could a mother abandon her child in a time of need?" In the future, I will be more aware of these perhaps judgmental thoughts so that I can prevent them from creeping into my thoughts and concerns about what is best for my patient and his/her care. Despite these thoughts towards the patient’s mother, I do not believe that I would have handled this situation any differently at the time of my interaction with the patient’s mother. My professionalism had not been compromised, but I admit that afterwards, I was disappointed with myself for jumping to judgment about a situation that I knew very little about at the time.

Though it still bothers me, I know I have to be thankful for the loss, and thank the young man for allowing me to try to save him. His passing will likely help me to be a better clinician in the future. And that is learning I will never find in a textbook.

Reflecting on this experience I feel nothing but disappointment in myself. I was so caught up in myself and preparing myself for the procedure – get the patient, get the tools I need, get the pressure stockings on, get the restraints, etc. – that I didn't stop to realize that this kid might be scared. He might not know everything that's going on, he might be intimidated by the operating room, he might be terrified of being put to sleep. Simply put, I forgot about the patient. This hit me hard because I've always prided myself on being a "people person."

After discussion of the processes that students expressed in their narratives we created a framework for analysis of additional student narratives. (Figure 2).
Discussion

The analysis and creation of our model was undertaken to further the understanding of existing theoretical frameworks of professional formation using medical education, psychological and social sciences literature. (Brody & Doukas 2014, Cruess, Johnston & Cruess 2004, Monroux 2010)

In this study we first updated the classic reflection cycle (Gibbs model) into specific use for narrative reflection adapted for professional development. (Gibbs 1998) (Figure 1). This updated and simplified framework provides a tool to be used to understand narrative reflection that aids professional development in our medical learners who are in a complex healthcare environment. The instructions for crafting narratives encouraged students to examine critical incidents in their training, and to reflect deeply about them. However, simply telling or writing a story is not enough for the learner to gain insight into how the sentinel or dissonant event affected them. When students discuss their narratives with trusted peers and faculty they report decreased isolation, increased support and insights that contribute to their professional growth. (Duke, Grossman, Novack & Rosenzweig, 2014)

Second, the qualitative analysis allowed development of a framework using students' narratives (Figure 2) in the context of their professional development. The framework starts with referencing work from learning development theory and moves ultimately to the values as outlined by physician professional organizations such as CanMEDS, developed by the Royal College of Physicians and Surgeons of Canada, and ABIM which certifies medical specialties. (Frank, Snell & Sherbino 2015, ABIM Foundation 2002)

In analyzing students narratives we drew from the work of developmental psychologist, Eirk Erikson's, stage 5 of psychosocial development which is the stage of identity development when students ask the question "Who am I?" In this search for identity, peers become very important as does the external environment. (Erikson 1994) Then we
looked at the identity-based framework that focuses on development and socialization in work done by Sylvia and Richard Cruess. (Cruess et al. 2015) The forces included in their scheme have broad categories of mentors and role models as well as clinical and non-clinical experiences. We sought to clarify these experiences and see what events students themselves recorded and wanted to discuss in their professionalism small groups. It was clear that students’ experiences of cognitive dissonance in their clinical work stimulated most reflections. Students witnessed or performed behaviors that were at odds with their values, or the values they believed were ideal professional values. They then needed to either reevaluate the importance of the value, or the appropriateness of the behavior relative to their values, or to the aspirational values of medical professionalism.

After an open coding process of a randomized selection of 32 students' narratives, we created three themes to encompass the experiences as recorded in the narratives of third year medical students: Learning Environment, Physician Patient & Family Relationship and Self Identity in Relationship to Teams. These themes overlap with work done looking at the hidden curriculum at Indiana University by Karneli-Miller et al. (2010) who established two broad domains: Medical-Clinical Interaction with six subcategories and Teaching-Learning Environment with seven subcategories. Our model overlaps and adds validity to their work in addition it brings more emphasis to self-identity and role in team as an important determinant of professional formation.

This study has a number of limitations. The model derived from the review of the narratives is based on a sample of qualitative data from one medical school. However, it is relatively robust for a qualitative analysis. It would be important to further validate this framework in other populations of students. If validated this model could serve as a useful template for further qualitative studies, and as a heuristic model for guiding professionalism education.

**Conclusion**

The significant experiences students have in the beginning of clinical medical training are centered on the patient experience and their interaction with patients, family and clinical team members. The use of narrative reflection allows students the important work of revisiting and working through the cognitive dissonance that leads to their sense of what is and what ought to be professional. We developed a model from systematically reviewing student narratives and placing them into three broad categories which we believe reflects the majority of clinical experiences. This framework allows educators to review and organize student experiences in the clinical setting and, link them to future professional development during the third year of medical school. We hope this study encourages others to conduct qualitative studies to learn more about pivotal events and experiences in third year clinical clerkships which affect students' professional formation.

**Take Home Messages**

1. Narrative reflection and discussion can be an important element of professionalism formation
2. Using a professionalism growth framework we hope to better understand the developments of medical students into professionals
3. There are consistent themes which students identify as sentinel events during the third year of medical school: 1) Physician-Patient & Family Relationships 2) Learning Environment and 3) Self-Identity in Relationship to Teams
Notes On Contributors

PAMELA DUKE, MD, is a practicing internist and Course Director for the first year clinical skills communication course and the third year professionalism course at Drexel University College of Medicine, Philadelphia, Pennsylvania. An active member of the American Academy of Communication in Healthcare, she facilitates workshops on improving physician communication skills.

CHRISTINA CESTONE, PhD, is an Associate Dean for Assessment and Evaluation at Drexel University College of Medicine. Dr. Cestone provides assessment and program evaluation consultations and conducts educational research in collaboration with clinical and scientific faculty at Drexel University College of Medicine. Her research interests include faculty learning communities, metacognition, and epistemic cognition.

AMY BARANOWSKI, MD, MSc, is an assistant professor in the Division of Infectious Diseases and HIV Medicine at Drexel University College of Medicine. In addition to teaching medical students she is a clinical investigator focused on the relationship between HIV infection, aging and inflammation in women. She also has a research interest in cervical and anal cancer screening for women with HIV.

SUELY GROSSEMAN, MD, PhD, is Professor of Pediatrics at the Universidade Federal de Santa Catarina, Brazil, and a faculty member at the Foundation for Advancement of Medical Education and Research, Philadelphia, Pennsylvania, and Ceará, Brazil.

DIANE GOTTLIEB, MD is Associate Professor of Psychiatry. She is a treating psychiatrist for the medical students, involved with the development of wellness programing for students, including groups focused on the hidden curriculum, and member of the steering committee that initiated and continues to revise these virtual groups as part of the professionalism curriculum.

HONGHE LI is a PhD student of China Medical University in fifth years. Her major is Health Management, focusing on medical education and medical professionalism.

DENNIS H. NOVACK, MD, is Professor of Medicine and Associate Dean of Medical Education at Drexel University College of Medicine, Philadelphia, Pennsylvania. He directs clinical skills teaching and assessment, a first year course on medical interviewing and psychosocial aspects of care, and the doctoring curriculum for Drexel’s internal medicine residency.

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Appendices

Declaration of Interest

The author has declared that there are no conflicts of interest.