Faculty Pre- and Post- Reflections through Video-annotated Review of Faculty Teaching

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Abstract

Reflection is a critical need for peer observations and reviews to initiate a change in practice (Race, 1998; Allen, 2002; and Bell, 2002). It is maintained, however, that the self-reflections must be adequate to effect this change, and that there are challenges involved in developing meaningful reflective practices (Harvey and Knight, 1996). Literature exists that defines adequate self-reflection and provides reasons why many instructors fall short when they self-reflect. However, studies on instructor reflective statements and how they might evolve over time and in the context of a cohort of peer reviewers has not been extensively studied. This study compares both pre and post peer observation self-reflection statements of a cohort of undergraduate faculty over a period of two years. The self-reflection statements are coded using methods inspired by those defined by Lew and Schmidt in their study of student reflective journaling and Jay and Johnson in their study of typology of reflective practice in teacher education. Analysis of the reflections provide insight into the depth and types of reflective statements produced by this cohort, allowing conclusions to be made on the evolution, if any, of the participants' reflection statements. Underlying factors that may have influenced that evolution will be identified, providing the potential to identify how best to develop meaningful self-reflection in undergraduate faculty.

Introduction: Peer Review of Teaching

For educators, engineering or otherwise, improving student learning serves as an impetus to pedagogical research, implementation of evidenced-based practices in classrooms, and innovation of new instructional practices. However, faculty participate in such activities at varying levels. The process of peer observation is viewed as a tool (as supported by a number of studies reviewed by Davids, Pembridge, & Allam, 2015) that aids faculty in identifying areas of improvement in their instruction (Hammersley-Fletcher & Orsmond, 2005, p.213), materials, rapport with students and faculty peers, and facilitates professional development. The study discussed here involves the use of a video-annotated peer review process (VAPR) to provide professional feedback on instruction. Though this process could be used in any academic environment, this study was conducted with a cohort of undergraduate engineering educators.

Literature: Reflection on Teaching Practice

Past and current literature supports the notion that participation in a peer observation process only provides the possibility to improve teaching effectiveness; reflection on one's own teaching is critical to actually initiate a change in practice (Darling-Hammond & Bransford, 2005; Runhaar et. al., 2010). Indeed, reflection is viewed as an important component of any learning experience, for teachers and students alike, so much so that we have a Consortium to Promote Reflection in Engineering Education (CPREE). Valli (1997, p. 70) asserts that "[Reflective teachers] can look back on events; make judgments about them; and alter their teaching behaviors in light of craft, research, and ethical knowledge. Teachers who are unreflective would

be limited in their ability to make good decisions, to consider the consequences of their actions, or to alter their actions". Loughran (2002, p.35) adds that "experience alone does not lead to learning; reflection on experience is essential". Additionally, adequate reflection requires consideration of alternate perspectives as well as one's own, for the purpose of reframing the problem for deeper understanding (Schön, 1987). It is for this reason that reflection in the context of considering peer observation feedback is being discussed and studied. The component of having the study participants review their own video before completing their post-observation reflection is similar to the study conducted by Wright (2008) in which teachers were asked compare the reflection process with and without reviewing videos of themselves. A unique component of the study presented here is the added peer review and feedback imbedded into the video file for the teacher to see prior to their post-observation reflection.

However, do all faculty naturally reflect in a way that produces meaningful results? As identified by Valli (1997 p. 72), there exists a myriad of research that indicates many faculty "fail to think hard about obstacles to student learning." Additionally, Valli postulates that "we cannot take for granted that prospective teachers will become reflective practitioners with experience. There are too many experienced teachers who have not become expert at their craft, who do not carefully think about their work or try to constantly improve" (1997, p. 71). Though this statement was made in the context of K-12 education, it is not a stretch of the imagination that the same is true for higher education faculty, especially given that higher education faculty are not often formally trained in pedagogical practices. Even when faculty do reflect, there is no guarantee that the reflective practice is meaningful or useful. In their comprehensive work, Transforming Higher Education, Harvey and Knight point out that we must be cautious when relying on self-reflection: "…it is one thing to add information to existing ideas but very much another to use experience to change those ideas. In short, the danger of reflection is that it can tend to be self-confirming" (Harvey and Knight, 1996, p. 160). In fact, Meirink, et. al, note that teachers often use new information to affirm their current beliefs, rather than change them, even if the data contradicts their current beliefs (2009, p.90). Loughran also cautions that for reflection to lead to useful learning outcomes for teacher education, the reflection must be effective (2002, p. 33); but what defines meaningful or effective reflection?

Levels of Reflection

According to Jay and Johnson (1999) and Larrivee (2008), reflection involves three dimensions: Descriptive (Surface), Comparative (Pedagogical) and Evaluative (Critical). The definitions of these dimensions were drawn from sources such as Schön (1983), McKenna (1999) and Valli (1990) in the Jay and Johnson study, however, Larrivee conducted a comprehensive investigation to compile a common set of descriptors for each dimension of reflection. The tool developed by Larrivee to gauge the progress of a reflective practitioner seems more appropriate for self-assessment as many of the descriptors and attributes used to define each dimension would require more intimate knowledge of one's thoughts than what might be recorded in a written reflective statement. The descriptions of the dimensions used by Jay and Johnson were used to gauge the apparent level of reflection achieved through the participants' written reflective statements. As this study more closely aligns with the Jay and Johnson study, the dimensions defined by them are used. As noted by Jay and Johnson, self-reflection is quite complex and cannot be fully captured by strict definitions. Nonetheless, in their study, codifying reflective statements of pre-service teachers for evidence of the three dimensions allowed them to assess

the evolution of the quality of reflection of those teachers over a period of time. The Jay and Johnson study serves as an example for this current study; the pre and post observation reflection statements of the participants were coded using these three dimensions identified in order to profile the quality of reflection. Table 1 summarizes the dimensions of reflection.

Table 1: Summary of Reflection Dimension Attributes.

Dimension	**Attributes**
Descriptive	Problem or concern is identified and described.
Comparative	Outside perspectives and/or data are gathered to reframe the problem, question assumptions and/or preconceived notions and provide basis for comparison/critique.
Evaluative	Conclusions are made with a broadened perspective of how teaching impacts the learning environment and how students learn. Decisions to implement a change or to continue with current teaching style, strategy or belief may be made.

Descriptive reflection is, as the name implies, used to define or describe the problem for reflection. The reflective individual describes what has transpired, how they felt during the experience, what were their goals before the experience and were they met (Jay and Johnson, 2002, p. 77). Comparative reflection requires some input or feedback from outside the individual's own experience. An individual reflecting in this manner will acquire feedback from students, peers or even research to attempt to reframe the problem they have identified (Jay and Johnson, 2002, p. 78) from other perspectives. This reframing allows the individual to minimize limitations caused by their own assumptions or focus. As Jay and Johnson explain, the process of reflection, and consider the problem from new perspectives that, together with their own view, provide a more complete picture of what is happening. Finally, Evaluative, or Critical reflection involves the process of considering all of the data gathered during a comparative reflection dimension, and while considering broader social, moral and ethical impacts on their students and society, either making a judgement, renewing perspectives, or deciding to redefine the problem (Jay and Johnson, 2002, p. 79). In reality, however, the Hammersley-Fletcher and Orsmond study showed that many of their participants (lecturers from a School of Science participating in a peer observation and reflection program) focused their reflection on the lesson structure and the degree of interaction with the students, demonstrating a restricted view of the reflective process. One intent of the current study is to determine whether additional reviewers and feedback, in particular from a Teaching and Learning expert, aid in achieving a deeper level of reflection.

Content of Reflection

In addition to gauging the quality of reflection based on the highest dimension achieved, the content of the reflection is also analyzed to further define what reflection looks like among a group of faculty participating in a peer review process. To define some of the common content upon which teachers may reflect, Tom (1985, p. 37) identifies "arenas of the problematic as 1) the teaching-learning process, 2) subject matter knowledge, 3) political and ethical principles underlying teaching, and 4) society, including the educational institution". Though these exact content categories were not used when analyzing the pre and post observation reflection statements in the current study, they reinforced the categories that were used, as they all fit into one of the above accepted categories. To capture common content categories, the Lew and

Schmidt (2011) study was used as a model where they studied the relationship between reflective practice and the academic performance of first year STEM students. Software was used to identify the common content categories of reflection by the students. These categories served as a guide when identifying the categories of common content for this study of faculty of STEM students. Four of the categories used were parallel to those identified for the students (for instance, the students often reflect on their learning abilities, whereas faculty would reflect on their teaching abilities), while the other two content categories emerged as common content for this cohort. Table 2 summarizes these content categories. When comparing the dimensions of reflection defined by Jay and Johnson and the content areas defined by Tom, overlap becomes apparent between the evaluative dimension and the arenas of the problematic 3) and 4). This overlap seemed to justify limiting the content areas for this study to the six shown in Table 2, which comfortably fall into the 1) and 2) arenas identified by Tom. In this study, reflective statements involving ethical principles of teaching or broader impacts within society indicated the level of reflective dimension reached, rather than specific "content".

Table 2: Content Categories of Reflection.

Content Category	**Brief Description**
Self	This includes any statements where the subject refers to their teaching style, their behaviors, their habits or organization.
Peer	This includes any statements where the subject refers to others: comparing themselves, mentioning inspiration from someone, wanting to avoid someone else's mistakes.
Products	This includes any statements where the subject refers to course materials, course content or any artifacts used in the course of instruction.
Teaching Strategies	This includes any statements where the subject refers to what teaching strategies they used, want to use or believe they should use.
Students	This was an emergent category which includes any statements where the subject refers to the students' behaviors, capabilities, attitudes or other attributes.
Classroom technology/layout	This was an emergent category which includes statements about the technology resources available in the classroom, the layout of the classroom, or any other physical or infrastructure characteristic over which the faculty has minimal control.

Within the VAPR process, the pre-observation reflection statements are completed by the Object of Review (OoR) after completing the class session, but prior to any reviews. The prompt provided to the OoR to encourage the pre-reflection is given below:

> Please create a synopsis of your goals for that specific class meeting, with emphasis on specific teaching strategies they used. You are encouraged to comment on any issues or triumphs that may have occurred during the class meeting, to bring the reviewers attention to them.

The post-observation reflection statement is, of course, completed after all of the reviewers have provided their feedback. The prompt provided for the post-observation reflection statement is given below:

> Please review your video and the comments provided by the reviewers. Once completed, please email me a post-observation reflection that addresses the following:
>
> 1) Things that surprised you or gave you an "Aha" moment,
> 2) Changes that you will make to this course or others that you teach due to the comments or from what you saw in other reviews,
> 3) Things that you will maintain in your, or
> 4) Anything else that came to mind while reviewing the comments.

In both cases, the OoR may review their teaching video; however, in the post-observation reflection, the OoR can now see all of the comments timestamped to the associated events within the video.

Research Questions

There are two primary research objectives to this study. The VAPR process is unique in that observations are completed asynchronously by three reviewers, in sequence, allowing for the second and third reviewers to view the comments of the previous reviewer. Thus the objective is to describe how faculty reflection within the VAPR context. Specifically:

> RQ 1) Which content categories and to which dimension do faculty VAPR participants typically reflect?

The second objective is to ascertain the effect of the peer reviewers' comments on faculty reflection in VAPR.

> RQ 2) How does the dimension and breadth of the reflection compare between the pre and post reflection statements?

Methodology

The nine participants in this study all belong to the Engineering Fundamentals Department in the College of Engineering of Embry-Riddle Aeronautical University, primarily teaching first-year engineering students. Faculty ranks include Instructor, Assistant and Associate Professors. At the time of the data collection, none of the participants were tenured; five of the nine were tenure-track (three of which are now tenured) and four were non tenure-track. Each participant agreed to use the VAPR (Video-Annotated Peer Review) Process of peer observation and review. The VAPR Process (Pembridge, 2015) requires participants to select a class session to record and shortly after recording the session, provide a pre-observation reflection summarizing the objectives of the class session, special techniques or strategies used, and issues or topics/events of concern. The video is then reviewed by a Teaching and Learning Expert (TLE) and two peer faculty in sequence. The two faculty reviewers are able to see the comments

provided by the TLE, and the second reviewer can also see the first reviewer's comments. Videos are reviewed using annotation software which timestamps the comment to the appropriate point in the video. Finally, the OoR reviews their own teaching session with all of the comments and composes a post-observation reflection. Prompts are provided to inspire reflection and provide purpose for the VAPR process; the reflection prompts are provided in the Data Analysis section. It is the pre and post-observation reflections that are the subject of analysis in this study. Three consecutive semesters of data were collected, with each participant being reviewed once per semester and serving as a reviewer twice each semester: once as a first reviewer after the TLE, and once as the second (or last) reviewer.

The reflection statements were coded for both content and quality (or dimension). The content areas were pre-defined prior to analysis; if the comments did not fit into a prescribed category, they were classified as 'other' and then later categorized in either an emergent category or in a miscellaneous category if no consistent pattern could be discerned with other statements. Four categories were pre-defined using the content categories that emerged during the Lew and Schmidt (2011) study. This study centers around students, however, the content categories translated naturally to ones that might be expected for faculty. To affirm these categories, other studies such as Valli (1990) and Tom (1985) were referenced. The prescribed categories naturally fit into the more general categories identified by those studies. The pre-defined categories comprised: a) self, b) peers, c) products and d) teaching strategies. The emergent categories comprised: e) students and f) classroom resources (see Table 2).

To code for quality (or depth), the reflective statements were reviewed for the dimension of reflection achieved. Key words and phrases that alluded to specific dimensions (summarized in Table 1) were used as indicators of each dimension. Though the dimensions used are more consistent with the Jay and Johnson (2002), Valli (1993) and Wright (2008) definitions of quality of reflection, they are not quite as robust or broad as the dimensions as defined by Larrivee (2008) in her comprehensive study to define the levels or dimensions of reflection. However, as written reflective statements are being analyzed in this study in lieu of interview responses or self-assessments of reflection, the selected definitions prove more practical to use. Additionally, Wright used similar definitions and key words (Description, Analysis and Action) to assess the quality of reflection of teachers in his study on how video analysis impacts teacher's reflection for action. As explained by Moon (2007), "written reflection is not a direct representation of the internal process [of reflection]"; this idea was considered as the statements were coded.

Data Analysis

Data were analyzed employing mixed methods. The dimension of reflection achieved by the OoR in their reflection statements were determined qualitatively. Reflection statements were codified by identifying key phrases and concepts that map to the dimensions of reflection summarized in Table 1. To improve the reliability of this analysis, multiple researchers coded the statements for dimension level. The dimension of reflection achieved is listed as the highest dimension identified on which all researchers agreed. Excerpts from reflection statements are provided to further describe how faculty reflect while using the VAPR process, general trends are observed and discussed. The content categories of reflection each participant included in their statements are determined and how those categories map to the dimension of reflection

reached results in a quantitative analysis. A comparison of how these numbers differ for each participant both from pre to post reflection is discussed.

Results

The data was reduced in both aggregate and individual terms. In aggregate, the total number of instances in which the participants reached a particular dimension of reflection is provided. The total number of instances in which each content category was discussed is also provided. These data are partitioned into pre-observation reflection and post-observation reflection categories (Table 3). As the only instances of the highest dimension of reflection occurred in the post-observation reflections, the content categories are quantitatively assessed to determine if any association exists between content category and dimension (Table 4). Finally, each participant is qualitatively assessed for emergent trends in the conditions for reaching the highest dimension of reflection (evaluative), which content categories were considered and how those varied from pre to post-observation reflections in comparison to the cohort as a whole. Observations are discussed and excerpts from reflection statements are provided.

The sum of the values in Table 4 agree with the breakdown of data provided in Table 3 for the post-observation reflections. This table highlights the most common content categories discussed by the OoRs as they reflect on their teaching session at the comparative and evaluative dimensions. Regardless of level, teaching strategies is the most common in this cohort of faculty participants. This is not surprising given the objective of the VAPR process is to facilitate diffusion of evidence-based instructional practices (EBIPs) (REF). As many of the reflection and peer reviewing prompts and pre-coded tags within the video-annotation software focus on identifying EBIP usage or opportunities for implementation, it is expected that this cohort of faculty should provide feedback to the OoRs focused on teaching strategies, eliciting reflection on the same content. An interesting note is the emphasis on the 'students' content category when achieving the highest dimension of reflection, the evaluative dimension. Though, this initial study does not identify which specific content category is being discussed when the evaluative dimension is actually achieved, this data could indicate that reflection focusing on students tends to bring about deeper reflection on education and how we impact our students' learning and lives.

Table 3: Quantitative data in aggregate, summarizing the number of instances of dimension achieved and content category included in the pre-observation and post-observation reflection statements and the number of faculty achieving the dimension or including the content category in their reflections.

	Total Instances over course of three semesters*	Number of faculty achieving dimension or including content at least once	Total Instances over course of three semesters*	Number of faculty achieving dimension or including content at least once
	Pre-Observation Reflection		**Post-Observation Reflection**	
DIMENSIONS	**DIMENSION of REFLECTION ACHEIVED**			
Descriptive	25	9	22	9
Comparative	0	0	22	9
Evaluative	0	0	11	9
CATEGORIES	**CONTENT CATEGORY INCLUDED in REFLECTION**			
Products	25	9	13	8
Teaching Strategies	19	8	21	9
Students	10	7	16	9
Self	8	5	15	8
Peers	2	2	2	2
Classroom	2	2	1	1

*As not every participant was able to participate all three semesters, the total number of pre-observation reflections totaled 25 over the course of three semesters. That number drops to 22 for post-observation reflections. The cohort consists of nine full-time faculty.

Table 4: Instances of content category inclusion associated to highest dimension of reflection achieved by the Object of Review in their post-observation reflection.

Highest Dimension Achieved	Content Categories					
	Product	**Teaching Strategies**	**Students**	**Self**	**Peers**	**Classroom**
Comparative	6	10	6	8	0	0
Evaluative	7	11	10	7	2	1

When comparing each individual's content categories of reflection, there were clear differences by case that developed. Generally, participants' content categories did not vary exceptionally from pre to post-observation reflections, as might be expected. What was interesting, however, was the fact that the lack of variation was consistent over three semesters (the study period) as well. There were three exceptions to this where specific categories were present in all reflective statements of one of the phases (pre or post) but not at all in the other phase. Figure A illustrates the pre-observation reflection content categories, in relative proportion to one another, in the inner circles; whereas, the post-observation reflections are shown in the outer circles. This aggregates the data over the three-semester period for each participant. Participants D, F and H have significant portions dedicated to a particular content category (and two categories, in the case of D) that only appear in one or the other phase (pre or post, but not both). For D, the categories were teaching strategies and students, for F it was products and for H it was students. The remaining six participants all had fairly consistent categories showing up in relatively equal

proportional in both pre and post observation reflection phases, with the occasional category that only showed up in one phase, but as a single instance.

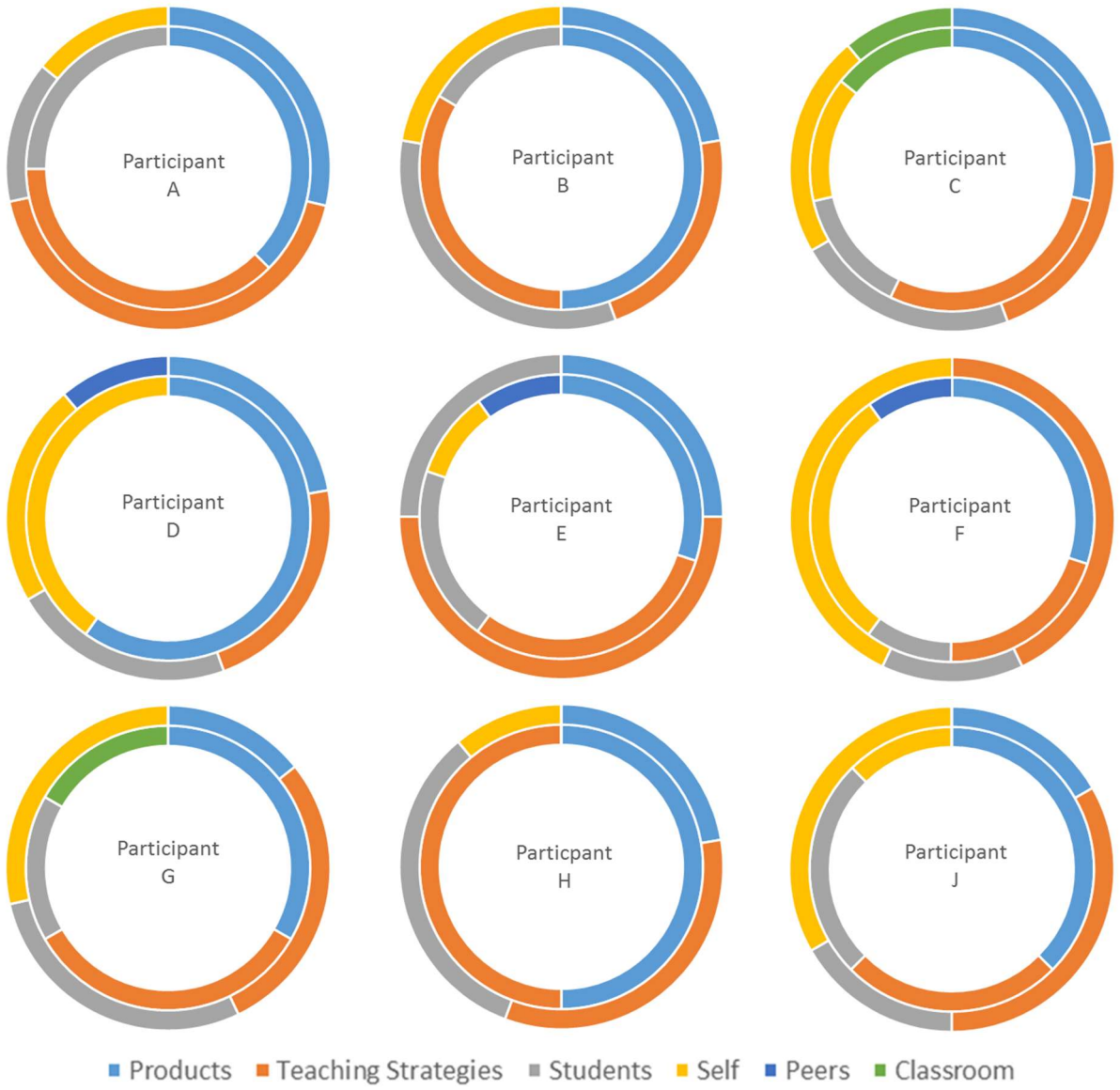

Figure A. Proportion of reflective comment categories for pre (inner circle) and post (outer circle) reflections.

Excerpts from those reflections that achieved the evaluative dimension are given for a few cases. To maintain the integrity of the statements, typographical, grammatical or any other errors were not corrected. The first excerpt is in reference to a hand drafting and CAD-based course:

> *"…. however, I reflected on the other CAD walk-throughs I have provided. As mentioned at the start of this video, this is a directed, experiential class where students learn by doing, but in a very scaffolded manner. This, being the first time many students are exposed to CAD, let alone the specific CATIA environment, I believe is necessary to get them quickly immersed in the environment and actually producing models. However, in later class sessions dealing with CATIA, it could be better to provide less scaffolding, and have students do pre-class work (like flipping or inversion of the classroom) to prepare for class with basic new material, then provide challenging in-class exercises that require guidance for many students.* ***This may be a better, more efficient use of class time to provide scaffolding in less introductory levels of various CAD skills imparted. It also allows more students to learn at their own pace and receive individualized instruction on an as-needed and perhaps even just-in-time basis. Many students are not in need of scaffolding provided once they can relate general CAD concepts from previous experiences (perhaps with other packages) to the equivalent functions and operations in CATIA specifically. An approach as suggested above for after the first CATIA class day could address this disparity in student preparedness and experience for a more tailored learning activity****."*

The bolded sentences demonstrate that a higher level of thought was achieved in which the best interests of the students are being considered. This reflection does not seem confined to the specific course or class session, but can be generalized. The OoR is recognizing the need for individualized instruction as not all students learn at the same pace; this recognition demonstrates that the OoR is not simply reflection on his or her own actions or students' actions, but their needs and how that might inform their future teaching activities. The OoR has taken in the comments from the reviewers, considered the impacts of what has transpired in the class and is drawing s useful conclusion on how to move forward.

In the next excerpt, the OoR is contemplating to what degree he should modify his language to ensure he is sensitive without disrupting his natural speech or flow of thoughts:

> *"… have language habits which have been around so long that we don't think about them. "Gyp" is a good example - I doubt I ever considered its etymology. Another: "he/she" is one that historically has defaulted to just "he".* ***Bringing up awareness on potentially sensitive issues is good and I'm glad it was done but let's be careful about being too politically correct - do we modify our speech to try and avoid *every* possible pitfall? What do we do when there are conflicting alternatives? Do we make ourselves ineffectual - even become counter-productive - by using unconventional speech?****"*

In this example, the OoR is not making any final decisions, but realizing that the use of his or her language impacts students' emotions and even efficacy, however, modifying our language too much could also be more disruptive than the original language use

itself. He or she then goes on to realize this matter really needs more investigating before any final decision can be made. This is an example of how the evaluative level does not require final decisions, but can be a realization that more data must be gathered.

The following excerpt demonstrates a professor's realization that he or she is allowing certain student to dominate the class discussion and resolves to make stronger future efforts to ensure all students have the chance to participate equally (whether it is comfortable for them or not):

> ***"I also need to ensure that the introverts are not hiding, rather than constantly going to my most responsive students. I would say that at this point in the semester I knew 85% of their names and should have called on them, when I saw they were not participating."***

The verbiage prior to the passage given above demonstrates the OoR's acknowledgement of the feedback provided by the reviewers, as well as his or her own critical review of the class session. What was special about the included passage was the OoR's acceptance of the feedback and awareness of his or her own behavior, and how that impacts the learning environment.

Another OoR reflects on their own experiences as a student and compares their own class environment in determining how to best address reduced student engagement:

> ***"…suggestion of polling when giving an in-class exercise - I will consider implementing that. I don't like randomly calling on students - I feel that creates an atmosphere of tension and anxiety for a lot of students, rather than engagement. If I notice one student dominating a conversation, I will attempt to encourage others to participate (but probably not as much as I should), but again, I don't like putting the spotlight on particular students. I know that I hated that as a student and if a particular instructor did it too much, I'd sit toward the back of the class, not make eye contact or sometimes even skip. That's not the result I want."***

Again, this demonstrates the evaluative level as the OoR is not simply reflecting on what he or she did or intended to do in the class session, what teaching strategies were used or a simple analysis of what did go as planned. This OoR is reflecting on his or her own experiences as a student, comparing them with the learning environment he or she is creating and attempting to understand how the students feel and how this may affect their learning.

Another excerpt demonstrates a faculty's recognition of their role in their students' professional development:

> ***"I like working the macro in class (even thought it is truly terrifying) because it does show the students that I do not know everything in CATIA (far from it) and nor am I profecient in all aspects. This is important for students to see."***

Each of the above excerpts, and indeed, all of the reflective statements that demonstrated the evaluative dimension are from post-observation reflections and all post-observation reflections reached at least the comparative (second) dimension of reflection. The pre-observation reflections were all limited to the descriptive dimension of reflection. The substantial differences between the conditions of the pre and post observation reflections are that: 1) in both the pre and post-observation reflection periods, the OoRs had access to their video but were not required to review it for the pre-observation reflections. However for the post-observation reflection, participants were expected to review their video. 2) only the post-observation reflection was guided with prompts (no prompting questions or details were given to guide the pre-reflection and 3) the post-observation reflection required the OoRs to read their peers' comments prior to completing the reflection; obviously, there was no peer feedback to cue the pre-observation reflection.

After receiving feedback, every participant achieved the evaluative level at least once, with two participants reaching it twice out of the three reviews (one per semester). There was no clear increase or decrease in level or dimension of review over the three semesters (longitudinally). The general pattern observed when comparing paired pre- and post-feedback reflection annotations (for a given semester) was one of nearly always increasing level or dimension of reflection. The pattern of deeper reflection after feedback suggests that peer review can encourage practicing faculty to reflect more deeply and effectively as they consider various perspectives and frameworks, and adjust their own perspectives and framing to influence their instructional practices. This seems to indicate, at least for this cohort, that by reviewing peers' comments contextualized within a video of one's own teaching, the reflection more naturally develops to the comparative dimension, assuming the OoR actually reads the comments and responds to them, and in some cases may provoke even deeper reflection. The deeper reflection may have been influenced by the presence of the prompts, but as many OoRs did not necessarily address those prompts, it seems they served more a starting points rather than impetus of deeper reflection.

Conclusions

This paper emphasizes the importance of reflection in the practice of teaching and promotes reflection as a necessary component of effective faculty peer review, here in the specific context of video-annotated peer review. Results of faculty pre- and post-review reflections coded for dimension of reflection and categories referenced indicate that faculty reflect more deeply when provided with a combination of peer commentary upon review, as well as prompts for post-review reflection.

The role that the peers' comments vs. the TLE's comments is unclear and warrants further exploration. Based on a few responses within the reflections statements, there are implications that the TLE's more directed and critical comments elicited deeper reflection to the evaluative dimension. Finally, the absence of prompts may have influenced the lack of depth in the pre-observation reflections, as perhaps the participants were unaware of the expectation and understood the purpose of the pre-observation reflection as simply a summary of the class for the reviewers. The effect the prompts had on the post-observation reflections is unclear, as the vast majority of participants did not directly answer the prompts. It is possible, though, that simply

having the prompts indicates an unarticulated expectation of more in-depth thought and reflection for the post-observation reflection. Based on this limited study, the most successful recipe for deeper reflection includes facilitating a process through which one receives feedback from peers, the opportunity and expectation to observe one's self is provided, in addition to guiding prompts for the reflection.

Future Work

As this study is contained within a more comprehensive NSF funded 3-year study on the VAPR process, the impact of the VAPR process on the implementation of evidence-based practices by the studied cohort of faculty is currently being analyzed. The impetus for the VAPR process was to provide a vehicle for diffusion of best practices in such a way that promotes self-reflection (and social reflexivity – reflection within a community context), enhancing the likelihood of adoption of best practices. Also being studied is the level of student satisfaction in the course instruction over the studied period. The results of the current analyses will be published in separate articles.

Limitations

These reflections are, in many cases, snippets of thought and not full, verbose, essay-style reflections as commonly found in the literature as examples. As the participants in this study were unaware that their reflective statements would be reviewed and were simply asked to annotate their videos, many of the statements were brief. As underscored by Moon (2007) in the differentiation between the process of reflection and writing a reflection statement, this brevity does not imply lack of depth or achieving the evaluative level of reflection dimension. It is noted, though, in some cases the OoRs intent had to be interpreted in order for a judgment to be made on the dimension of reflection achieved.

The interpretations by two coders for dimension of reflection still consistently showed a general tendency of faculty to provide deeper reflection in post-review reflections as compared to pre-review reflections. Despite a consistent phase difference in the interpretations of dimensions of reflection between coders, the magnitude of the difference between pre- and post-review codes were always similar. For representative example, one participant's pre-review reflection was coded as "Descriptive" by one coder and conservatively "None" by another coder; the former coded the post-review reflection as "Descriptive, Comparative, Evaluative" while the latter conservatively coded it as "Descriptive and Evaluative."

The nature of peer observation and the three-reviewer system of the VAPR process precludes the ability to collect more than one data set from any given semester. Though each participant videoed two class sessions from each of the studied semesters, only one full round of reviews could be completed in each semester. This results in a small sample size.

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