



RUTGERS

# Hierarchy and Communication in Case Reviews: Discontinuity between What Students Say Versus How They Communicate

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## Two Key Objectives

- Demonstrate the importance of gathering multiple pieces of information on the students besides just survey data.
- Demonstrate the importance of continuous outcomes evaluation when approaching the development of an IPE initiative from a Developmental Evaluation perspective.

# THE PROBLEM

Or, so we thought...

## Background

- Surveys (at best) will tell you participants' perception of a situation.
- What surveys won't do: tell you what is actually going on.
- Generally, because surveys are so much easier to administer than modes of direct observation (in-person observation, audio-visual, etc.), we use survey results as a proxy for what is "really happening".

Is it a good idea to rely only on student survey feedback when developing and enhancing an event or program?

## Research Question (initial)

Do student perceptions of communication patterns during interprofessional case reviews match communication patterns directly observed by third party observers?

In other words, does what students “say” in surveys match “how they communicate” in the case review sessions?

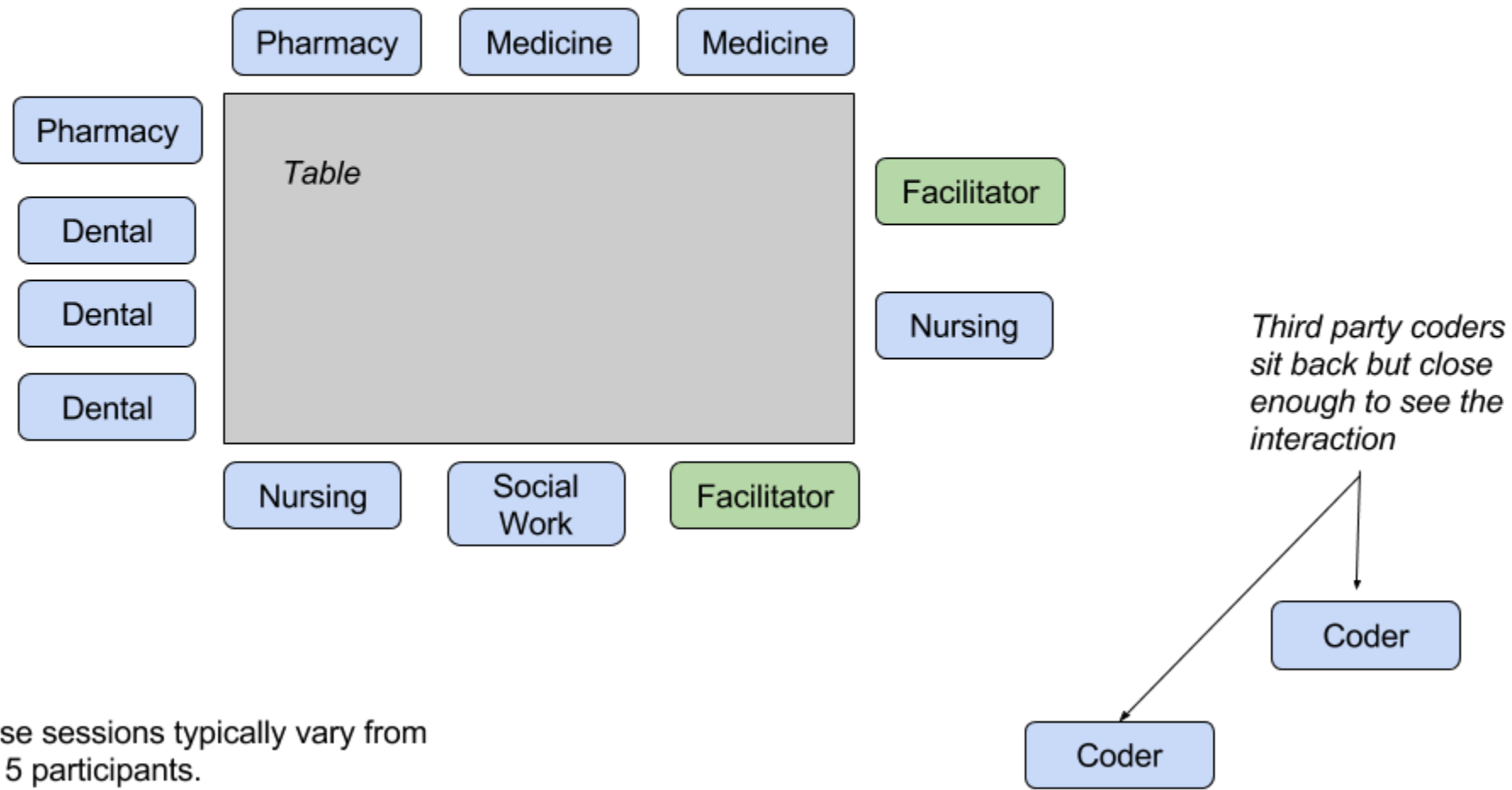
# METHOD

## Session and Data

- Weekly ~1.5 hour oral medicine case review sessions
- Attended by:
  - Dental Hygiene
  - Dental Medicine
  - Nutrition
  - Medicine
  - Nursing
  - Pharmacy
  - Social Work
- Sessions typically include between 8-15 students and 1-2 facilitators.
- Session interactions hand recorded by 1-2 third party observers.
- At the end of the session, students fill out a brief electronic survey.



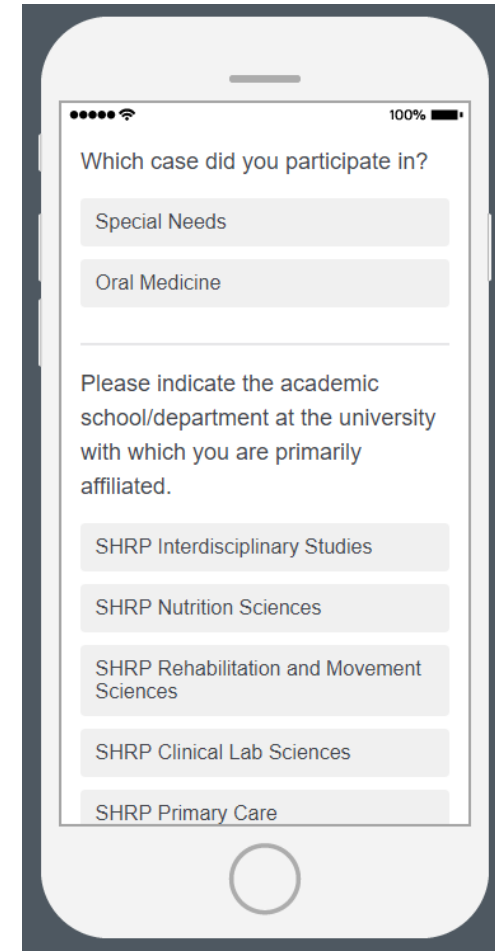
## Typical Room Setup for Special Needs Interprofessional Oral Medicine Case Review Sessions



Case sessions typically vary from 8-15 participants.

# The Survey

- In addition to collecting basic demographic data, the survey focuses on three areas the Project Team determined were important:
  - Awareness / **understanding** of the roles of other professions
  - Evidence and potential consequences of stereotypes and **hierarchy** among the participating professions
  - Quality of the lines of **communication** among professions
- Surveys were electronically distributed prior to the end of the sessions so students could complete them prior to leaving.
- For the academic year 16-17, n=1075 surveys were distributed and n=787 were collected (73.2% response rate).
- Responses were coded on a 1-5 likert scale.



# Observational Data

Data on who speaks (profession) and the profession of their addressee are recorded on data matrices

Example coding matrix from a single session

		Speaker								Number of time addressed
		Dental	Medical	Dental Hygiene	Nutrition	Pharmacy	Social Work	Nursing	Facilitator	
Addressee	Dental	6	6		2	2		2	5	12
	Medical	7	6			1		2	5	10
	Dental Hygiene									0
	Nutrition	4						1	2	5
	Pharmacy	1						1	1	2
	Social Work									0
	Nursing					1			5	1
	Facilitator	9	3			2		6	6	20
	Whole Group	7	10		3	2		3	15	25
Number of Profession		3	4	0	1	2	0	1	2	14
Number of speech turns		28	19	0	5	8	0	15	2	77

So, during this session, any medical student directly addressed any dental student six times.

Intra professional utterances were not recorded

## Calibration of Coders

- Three members of the project team coded session interactions. Two coders coded each session independently in the first four sessions observed.
- Coding results were compared, and discrepancy statistics discussed. Strategies for harmonizing coder agreement were likewise identified (e.g., clear definition of what counted as a **speech turn** [as opposed to an unsuccessful interruption]).
- Because of differences in coder perspectives (which students they could clearly see) and because of the sometimes quick pace of the conversation, we did not anticipate perfect agreement.
- Although disagreement between coders was initially fairly high (19.6%-33.8% depending on the profession), agreement by the fourth coding session was 4.3%-7.4%--often the difference in a single speech turn. This was deemed an acceptable level of variation.
- Once calibration was achieved, each session was coded by a single coder.

# Statistics

- For survey results:
  - Association between student profession and answers was examined using chi square and exact statistics for omnibus associations, and standardized residuals analyzed to identify statistically significant deviations in observed versus expected responses within professions.
- For observation results:
  - **Expected speech turns by profession:** Given the number of speech turns observed, each student was assumed to have an equal chance to use that speech turn. Thus, the expected probability of that speech turn being taken by a member of a particular profession was calculated as the probability of being in the given profession times the number of speech turns.
  - **Observed speech turns by profession:** Direct count of how many times individuals in a particular profession spoke during the case review.
  - **Ratio of Observed to Expected speech turns:** If the ratio of observed to expected speech turns  $>1$ , this indicated that members of the profession spoke more than expected by chance. If the ratio  $<1$ , this indicated that the members of the profession spoke less than expected by chance.

# RESULTS

# Survey Results: Semester 1

- In the analysis of the survey results in early December 2016, the large majority of students responding to the survey indicated that:
  - Lines of communication were open among the different healthcare professions (94.1%, n=335), and
  - Members of all professions were equally able to provide input on the case (76.1%, n=270)
- **However**, there was a significant association between the communication questions and school:
  - Students from the School of Health Professions (SHP: nutrition or allied dental) were significantly *more likely to strongly disagree* than lines of communication were always open (z=2.6, p=0.005), and
  - Medical students significantly *more likely to disagree* that all professions were equally likely to provide input on the case (z=2.2, p=0.013).

What might we have done, if this were the only information we had?

If the survey results were the only information we had on communication patterns within the case reviews, we might have altered facilitation practices to explicitly target nutrition and dental hygiene students to speak more.

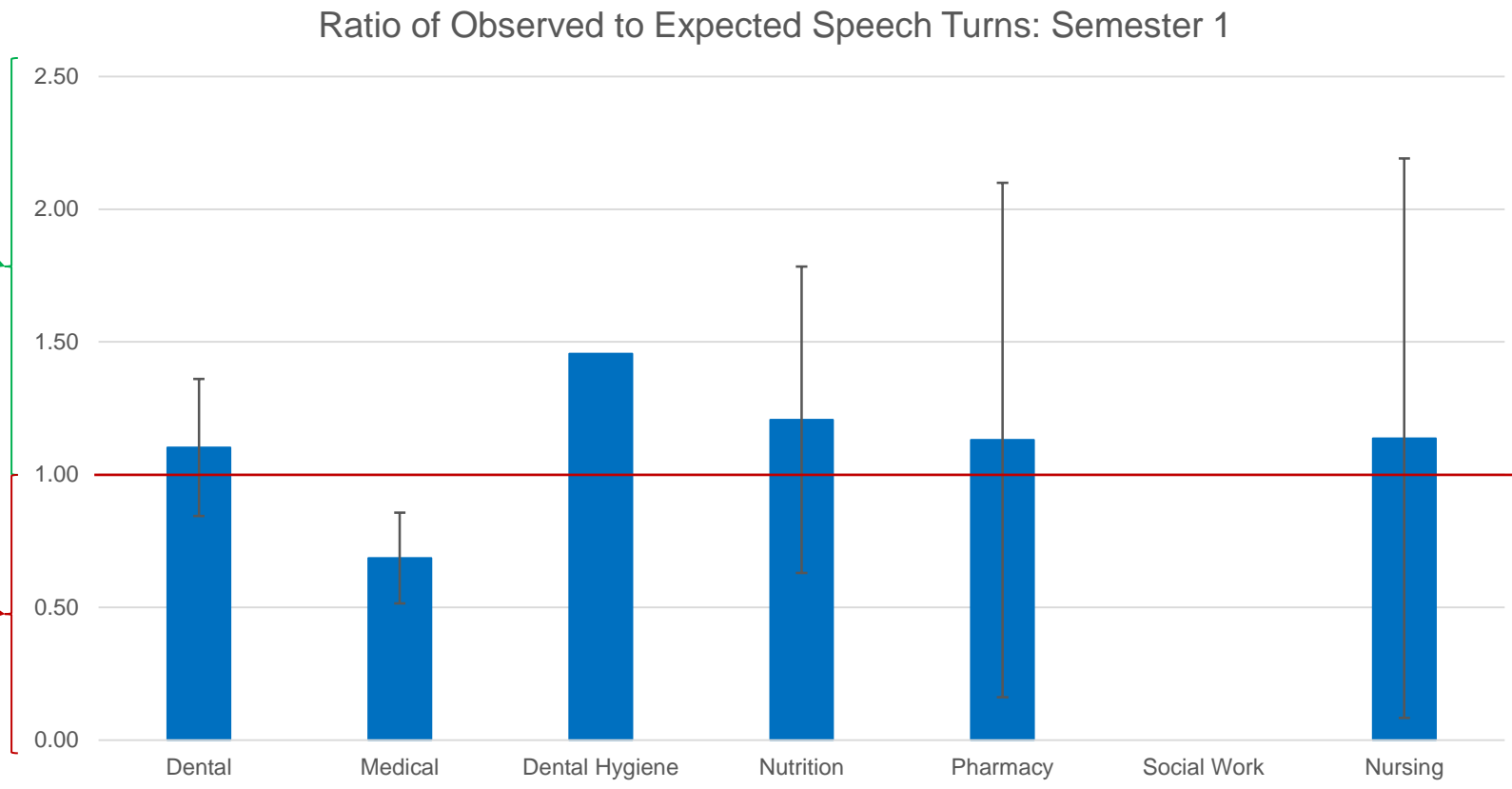
However, this wasn't the only information we had.



# Observational Results, Semester 1

>1: More likely than expected to speak

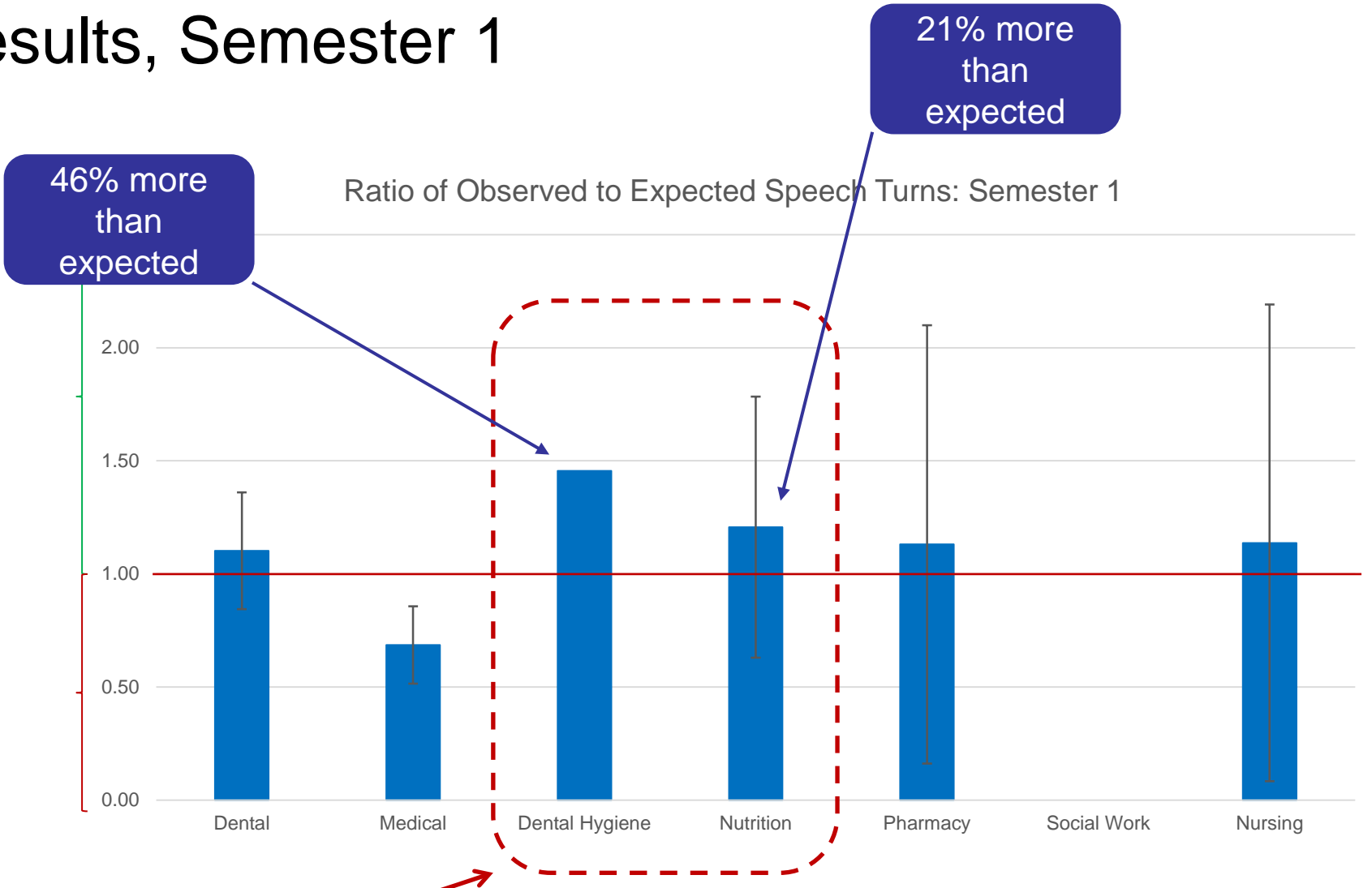
<1: Less likely than expected to speak



\*Note, Dental Hygiene did not have enough data to construct error bands, and there were no Social Work students in Semester 1

# Observational Results, Semester 1

The two SHP professions (Dental Hygiene and Nutrition) were **MORE** likely to speak during the case reviews.



# Inconsistency and Consistency

**Inconsistency:** The discrepancy between what the SHP students told us (via survey) and what we observed lead us to realize that:

- The problem was NOT that the students who *disagreed* that lines of communication were open were *not* participating. They were participating—indeed, more than the other professions!
- So, the solution was not merely to encourage the SHP students to talk more, but to address potential reasons they perceived that “lines of communication” were not open.

**Consistency:** On the other hand, Medical students disagreed that “professions were equally likely to provide input on the case” ( $p=0.013$ ), and were 31% less likely than expected to speak during the case review sessions.

## Explanation?

- The consistency between survey and observation for the Medical students was easily explained. Unlike the other professions that participated, Medical students were the only ones who had not yet had any clinical rotations (2<sup>nd</sup> year medical students), and may fail to perceive a direct applicability of the case to their profession.
- For the SHP students, it was not clear why we should see inconsistency between what the students said (via survey) and how they actually communicated.

But, this was just a single semester...

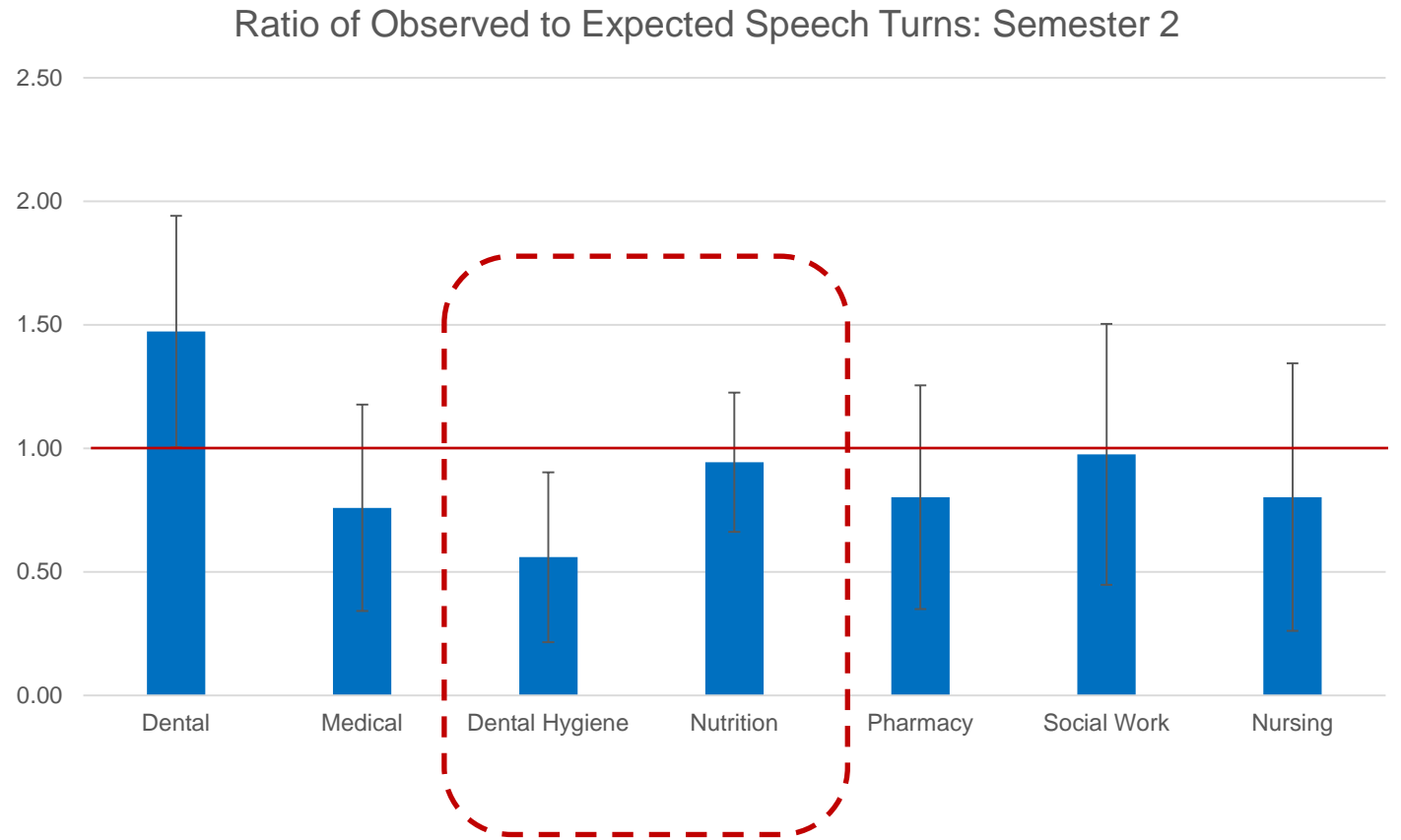
## Survey Results: Semester 2

### **When Semester 2 survey results were analyzed in May 2017, we found:**

- School of Health Professions (SHP) students (Nutrition and Dental Hygiene) were *no more or less likely to agree or disagree that lines of communication were open.*
  - Thus, the pattern we had seen in Semester 1 had disappeared.
- Medical students were no longer more likely to disagree that members of different professions were equally likely to provide input on the cases.

# Observational Results, Semester 2

In semester two, the observed speech turns dropped for Dental Hygiene, but was reasonably close to what was expected for Nutrition.



# Inconsistency and Consistency

**Inconsistency:** The discrepancy between what the SHP students told us (via survey) and what we observed persisted, but in the **opposite** direction:

- SHP students (particularly Dental Hygiene students) were less likely than expected to speak during the case review sessions.
- However, in the survey results, Dental Hygiene students did **not** indicate any barriers to communication (hierarchies among professions did not impact the case, lines of communication were open, and all professions were able to make contributions).

**Consistency:** Medical students in the second semester no longer indicated that professions were NOT able to make contributions to the case. Though the actual participation of the medical students was lower than expected, their actual participation increased above semester 1 levels.

# CONCLUSIONS



# Surveys Versus Direct Observation

As we discovered, what students tell us in surveys does not always correspond to empirical patterns identified via direct observation.

- The case of the Dental Hygiene students is particularly intriguing because in the semester where the survey indicated a problem with open lines of communication, students spoke more. In the semester where students did **not** indicate a problem with open lines of communication, Dental Hygiene students were 44% **less** likely than expected to speak during case review sessions.
- In either situation, if we were to use only student surveys as the basis for altering the content or process of the case review sessions, we could end up making changes that might be detrimental to the session goals (i.e., open communication and discussion among students).

# The Importance of Developmental Evaluation

- We cannot simply assume that our efforts are having the desired effect for all groups of students participating in interprofessional activities.
- Thus, it is critical to collect and use multiple types of data for program development and refinement.
- However, program faculty must be thoughtful about how results of ongoing evaluation are collected and shared:
  - It is not clear whether or to what extent the report of semester 1 results to the project teams might have influenced some of the changes we saw in semester 2 (results were shared with the project team at the end of the semester).
  - While we did not make conscious, strategic changes at that time, we cannot rule out the influence of our initial findings on later results.
  - We must be conscious of the progression of students' education from the beginning to end of the academic year – this change in knowledge will impact students' ability to participate in the cases and may influence how they respond to the survey (e.g. August versus May participants).

# Conclusions

This project points to one of the strengths and two of the pitfalls of developmental evaluation.

## **Strength:**

Gathering diverse data on student activities and attitudes can provide the basis for conscious and directed changes when the event or activity is not quite meeting the goals for all students.

## **Potential Pitfalls:**

Gathering data in only one way (especially only via survey) can lead to changes that could actually be detrimental. Multimodal approaches to data collection (especially direct observation) are needed.

Reporting results in process may affect (consciously or unconsciously) program operation. While this is not necessarily a problem, faculty responsible for project evaluation should always be aware of this.

**QUESTIONS?**