Bridging the Gap:

Comparing Employer and Educator Expectations in Small Animal Dentistry

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3.1 Data Description

Two separate surveys were administered to mutually exclusive groups: veterinary employers who have worked with students, and educators who have taught those students. There was no overlap between these groups—no evidence suggests that any surveyed student was both taught by an educator and later employed by a participating employer.

The employer dataset consists of responses from 29 participants answering 40 questions, while the educator dataset includes 43 participants answering 34 questions. Each group was asked a single qualifying question to determine eligibility on participation and nine questions which asked about the participants demographics or institution. Educators were then given 24 questions, employers 30 questions, that were focused on DVM student compentencies and professional sentiments regarding training in veterinarian medicine.

Survey questions can in several forms. There were binary Yes/No responses; common among the demographic/institution questions. "Select all that apply" responses which act as its names sake with no limit to the number of selections. These were common in questions asking the participant to select all from a list of medical precedures at a practice. Many of these questions then were accompanied by Likert Scale question. The Likert Scale data was even-degreed with no neutral response. We believe the lack of a non-neutrality option caused at least two participants to answer both "agree" and "disagree" to a survey question. There were questions that offered an "other" response. For these situations, the survey accomodated a text entry for the participant to elaborate on selecting "other". Finally, there were some questions which ask participants to put in an interger when asked to give their account of a quantifiable value (i.e., hours worked, number of accredited veterinarians, etc.). This interger was limitless regardless of the questions' context.

Additionally, survey completion time differed between groups. Educators, on average, spent more time completing the survey than employers. While the survey did not ask participants to explain their response time, this difference may reflect greater engagement or the tendency for more elaborated responses among educators. These differences in response count might also lend credence to greater willingness among educators to engage with the survey. A box plot below illustrates the distribution of survey duration (in minutes) by group.

Survey Completion Time by Group
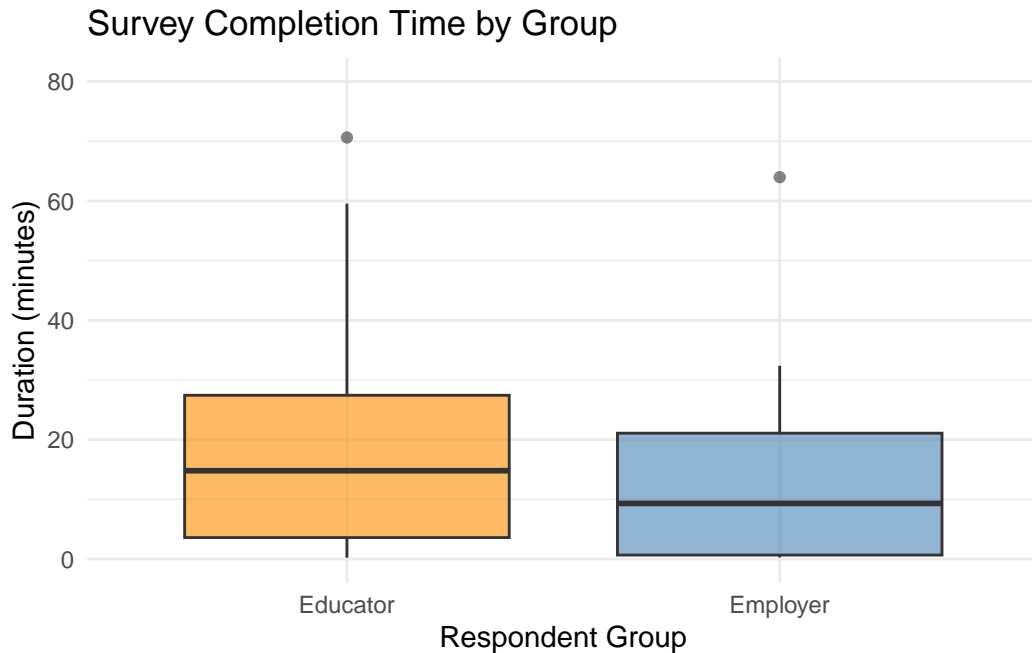
Regarding the proportion of the survey completed, employer responses were more variable—spanning the full range from partial to full completion. In contrast, educators tended to complete more of the survey, with a concentration near full completion and a less pronounced left tail. The density plot below visualizes these differences in survey progress across groups.

Survey Progress Density by Group
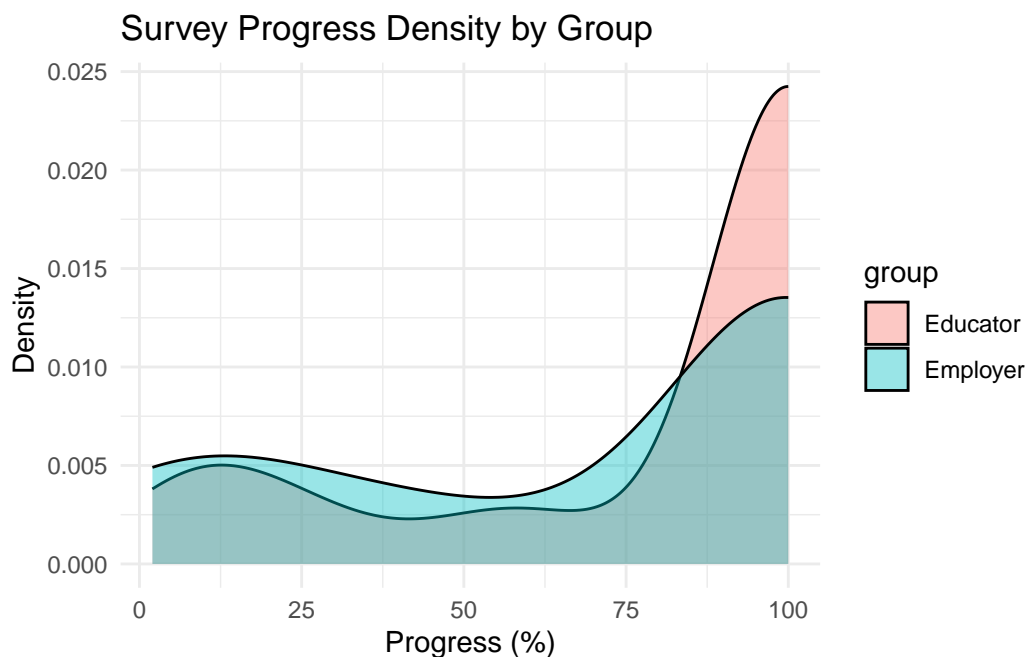
From the educators dataset we could talk about: * Q27; How long have you been teaching DVM students in the clinical training portion of a DVM program? * Q28; Does your institution have a teaching hospital? * Q29; On average, how many dental procedures does your primary care service perform each week?

From the employers dataset we could talk about: * Q33; Which of the following best describes your job setting or organization? * Q36; On average, how many dental procedures does your practice/oganization/institution perform each week * Q37; Which of the following best describes the person who completed this survey?

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#SPACER FOR MORE ANALYTICS
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#SPACER FOR MORE ANALYTICS
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3.2 Data Source

Survey data were collected using Qualtrics, a cloud-based experience management platform commonly used for gathering feedback and sentiment across workforce domains. Participants were recruited via email invitation sent by the researcher, using pre-existing contact lists. Participation was voluntary and anonymized.

3.3 Preprocessing Description

Although the employer and educator datasets shared a similar structure, they were not identical. Most preprocessing steps were applied uniformly across both datasets, with minor deviations where needed.

The datasets were imported into the RStudio environment (version 2024.04.1 Build 748). A new variable was created to label the data source ("Educator" or "Employer") for later grouping and visualization. The existing respondent_id column served as a unique identifier and was treated as the primary key.

Initial cleaning involved removing extraneous metadata included by Qualtrics—such as survey start and end times, IP addresses, geolocation data, and question display logic—all of which were irrelevant to the analysis. These columns were trimmed to streamline the dataset for subsequent transformation and statistical work.

Column names in the original Qualtrics export were alphanumeric but often ambiguous and misleading. Many variable names did not match the corresponding survey question numbers. Our team manually mapped the exported column names to their corresponding survey questions and responses by referencing adjacent metadata fields and using deductive reasoning. This process allowed us to build an index-based column naming structure, which greatly improved the manageability and interpretability of the dataset.

Before diving into question-specific analysis, we first identified the subset of survey questions relevant to our research objectives. All unrelated or out-of-scope items were removed. This step reduced the employer dataset from 176 columns to 100, and the educator dataset from 171 columns to 102.

Several formatting inconsistencies also needed to be resolved. Some multi-select questions appeared in the form of comma-separated text responses within a single column, while others were exported into multiple binary columns. Additionally, for certain questions, a response option that received zero selections was dropped entirely by Qualtrics. To standardize these issues, we implemented a script to "explode" comma-separated responses into individual binary columns. For dropped columns, we manually reintroduced them as zero-filled dummy variables to preserve the full response structure.

Finally, we filtered out participants who answered less than half of the survey. We also excluded:

- Employers who responded "No" to the question: "Do you work with early career veterinarians (someone who has graduated from a DVM program after May 2021)?"

- Educators who responded "No" to: "Do you teach in any capacity of the dental curriculum at your institution?"

After all preprocessing steps, the final cleaned datasets consisted of 13 employer participants and 30 educator participants.

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