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Furthering the Employability of Indonesian Math Graduates

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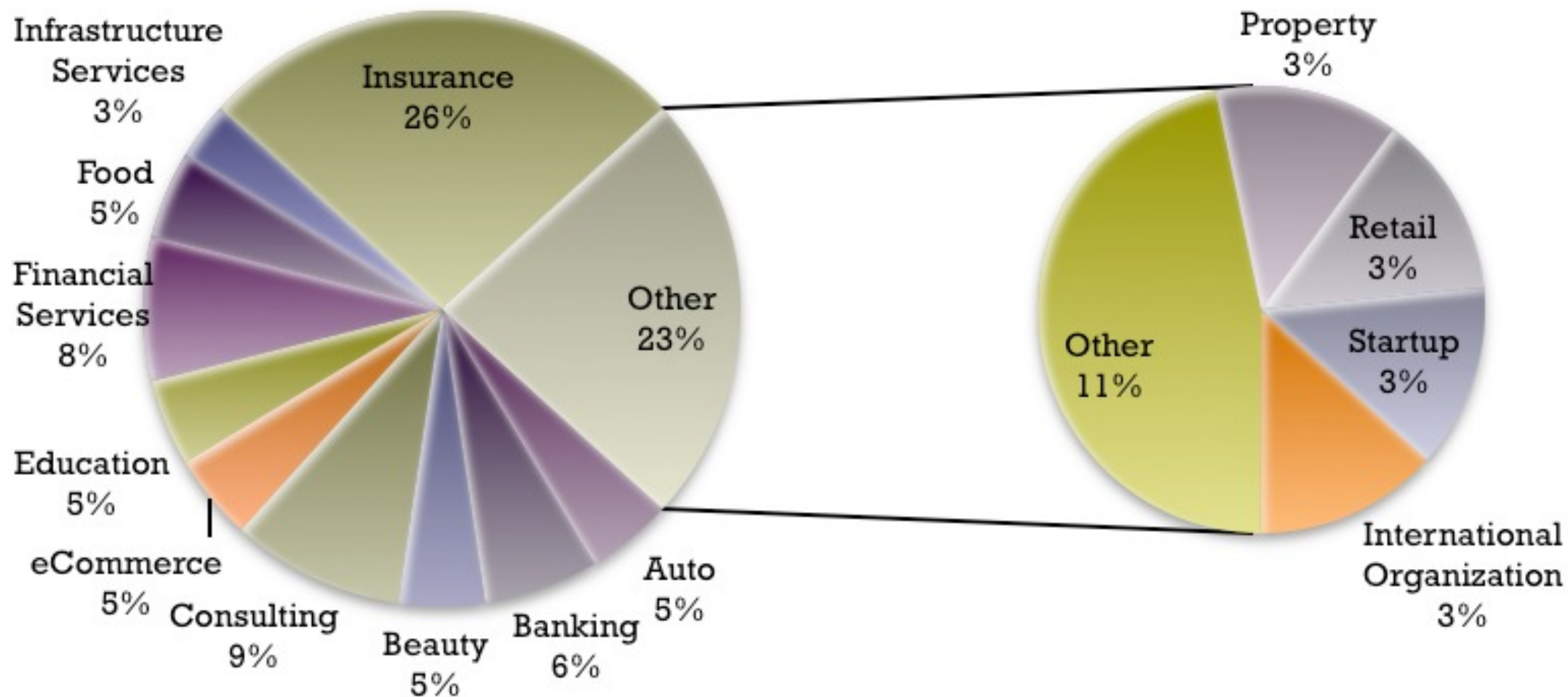




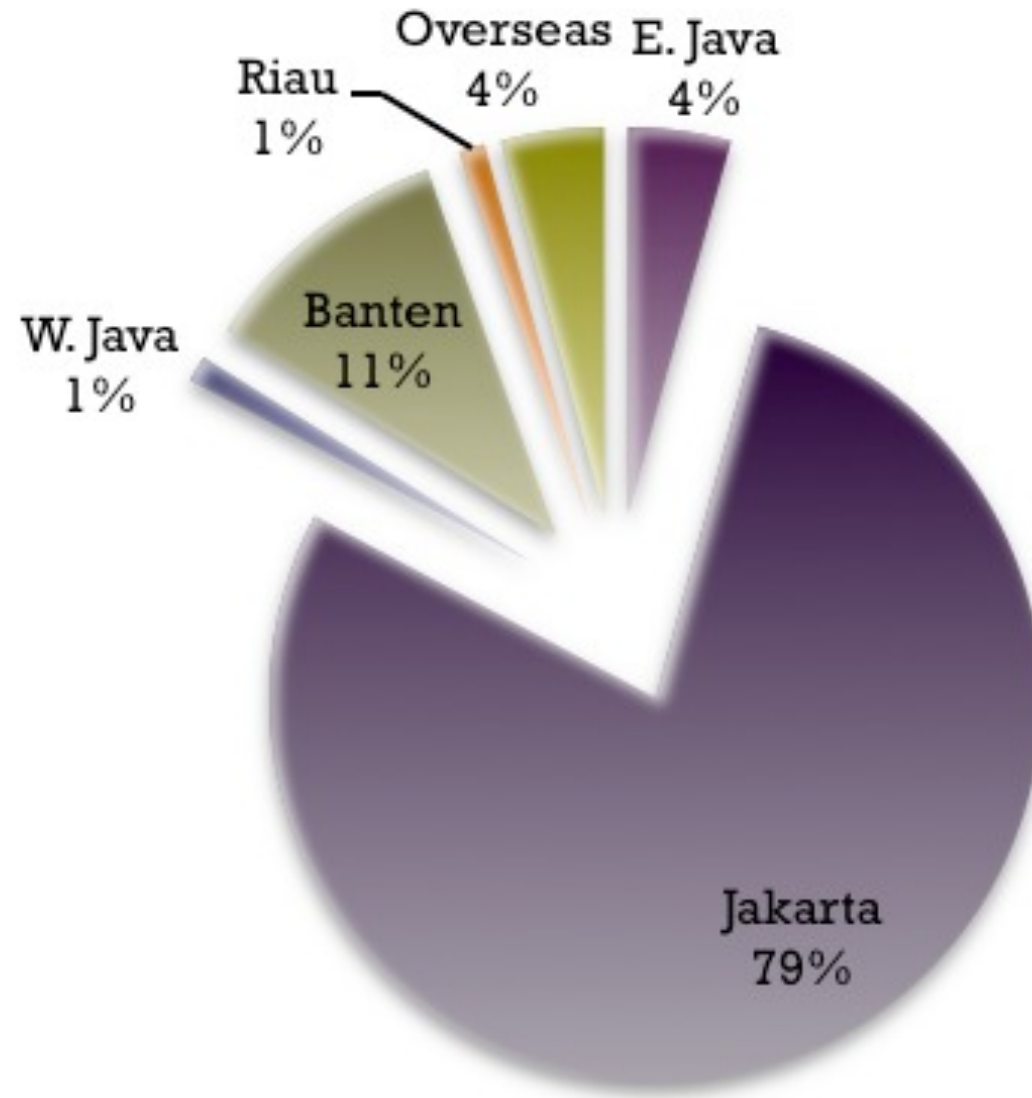
Scope of Research

- Ninety four employer written feedback of first-year Math students' co-op assignment Jan-Mar, 2019.
- The co-op assignment was the first of four-round co-operative education program in the department and the first time implemented in the university.
- The co-op assignment was a half-term job experience, up to 8-10 weeks.
- Employers were predominantly Indonesia/Jakarta-based.
- Employers were predominantly insurance industry.
- Employers were predominantly Indonesian nationality.
- Students were male and female Indonesians, freshman years.

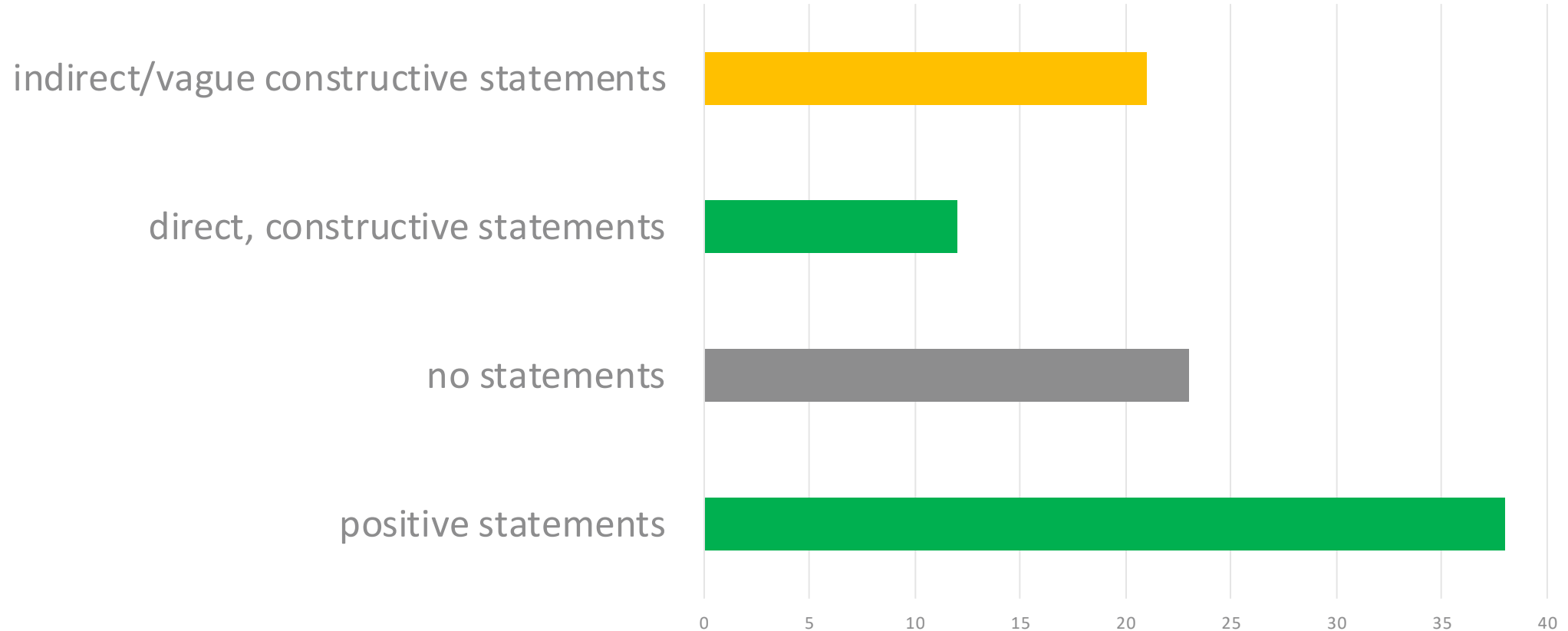
Hiring Industry



Job Placement by Location

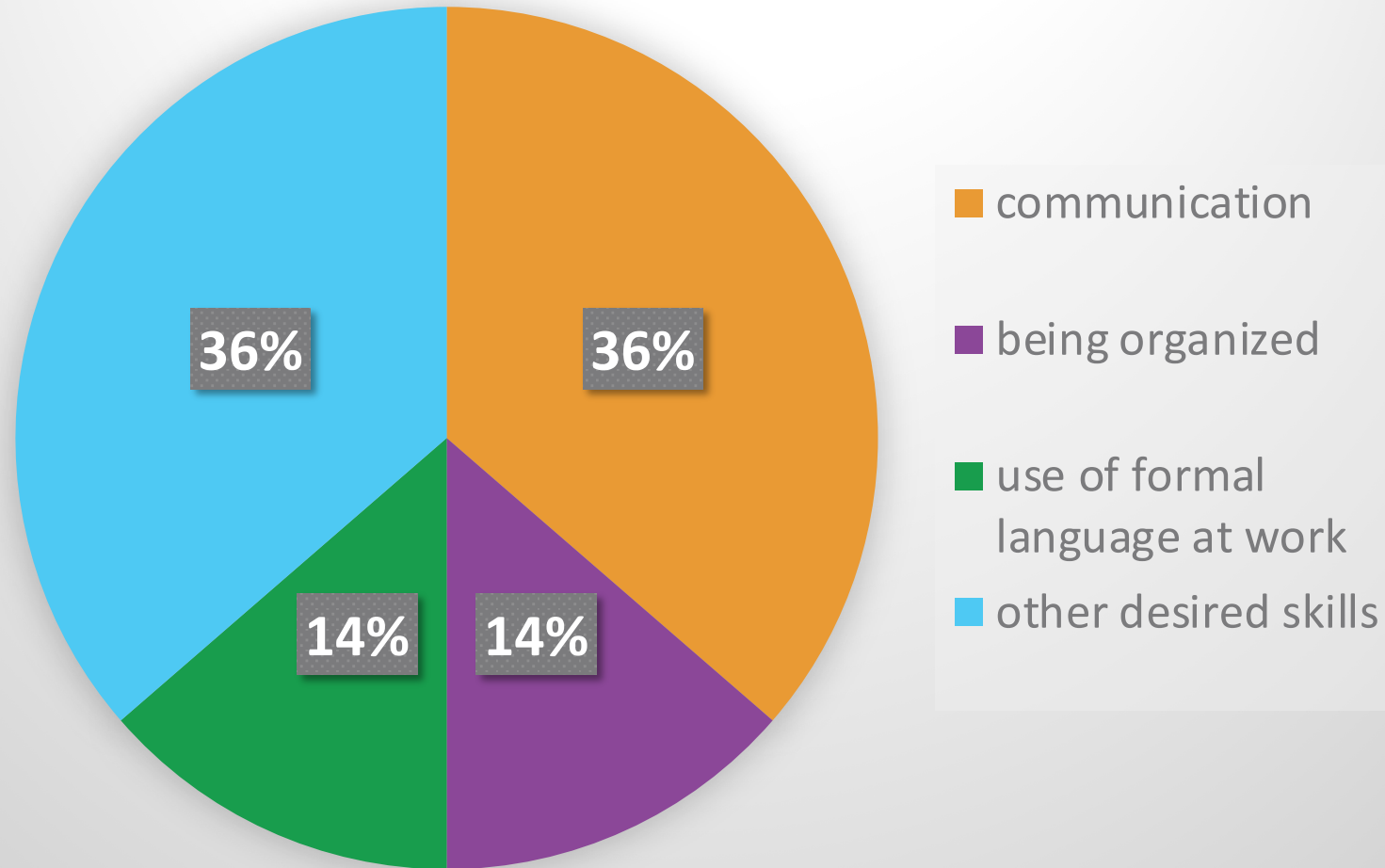


Employer Feedback in Writing

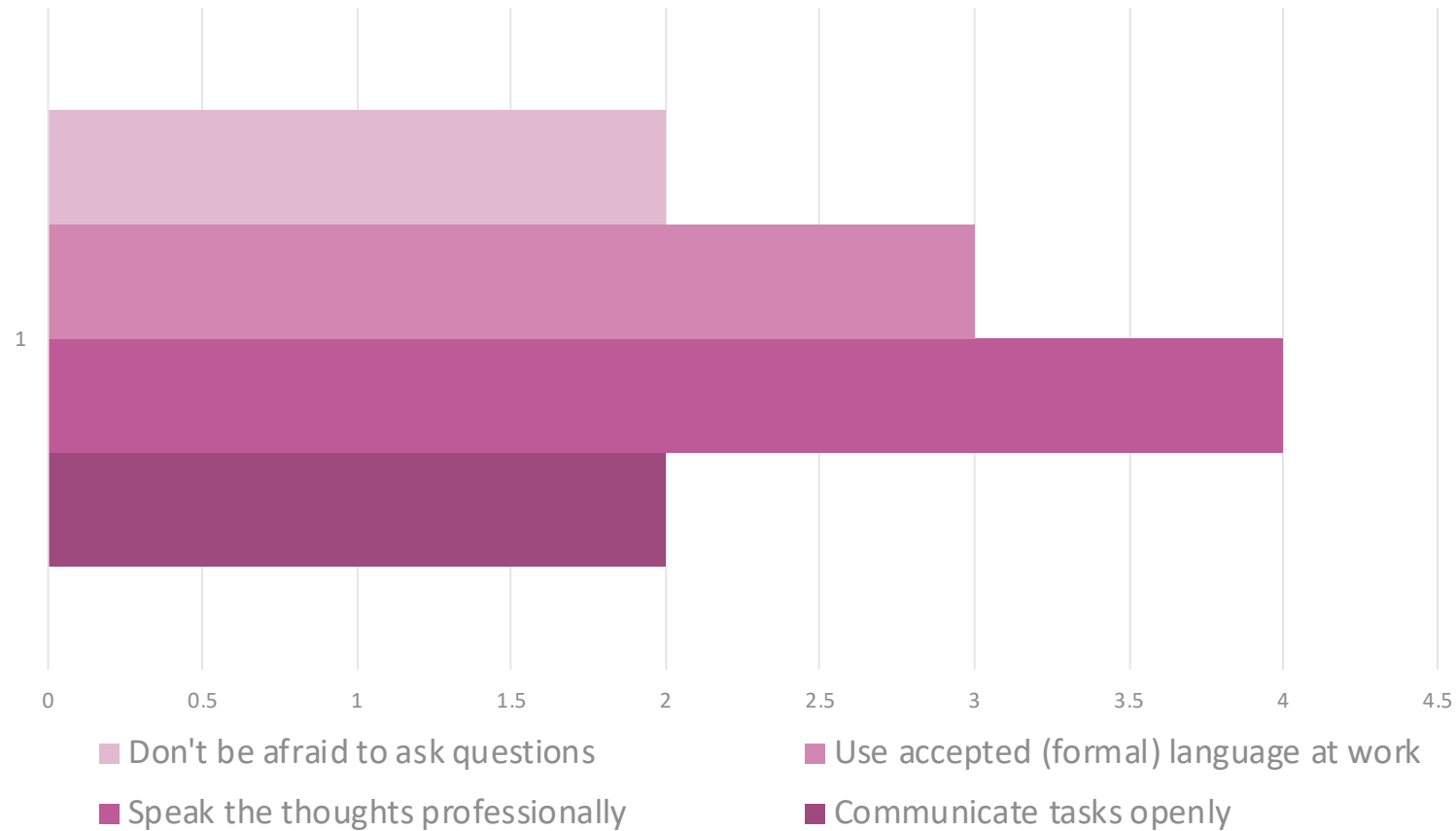


In addition to the scale survey, 41% employers provided **detailed feedback** on student performance with highlights on specific skills to keep up or improve. 24% employers preferred the scale survey **without** specifying details of the student experience. Only 13% employers **specified their feedback with examples and room for improvement directly**. 23% employers gave **vague** feedback statements.

Areas for Improvement

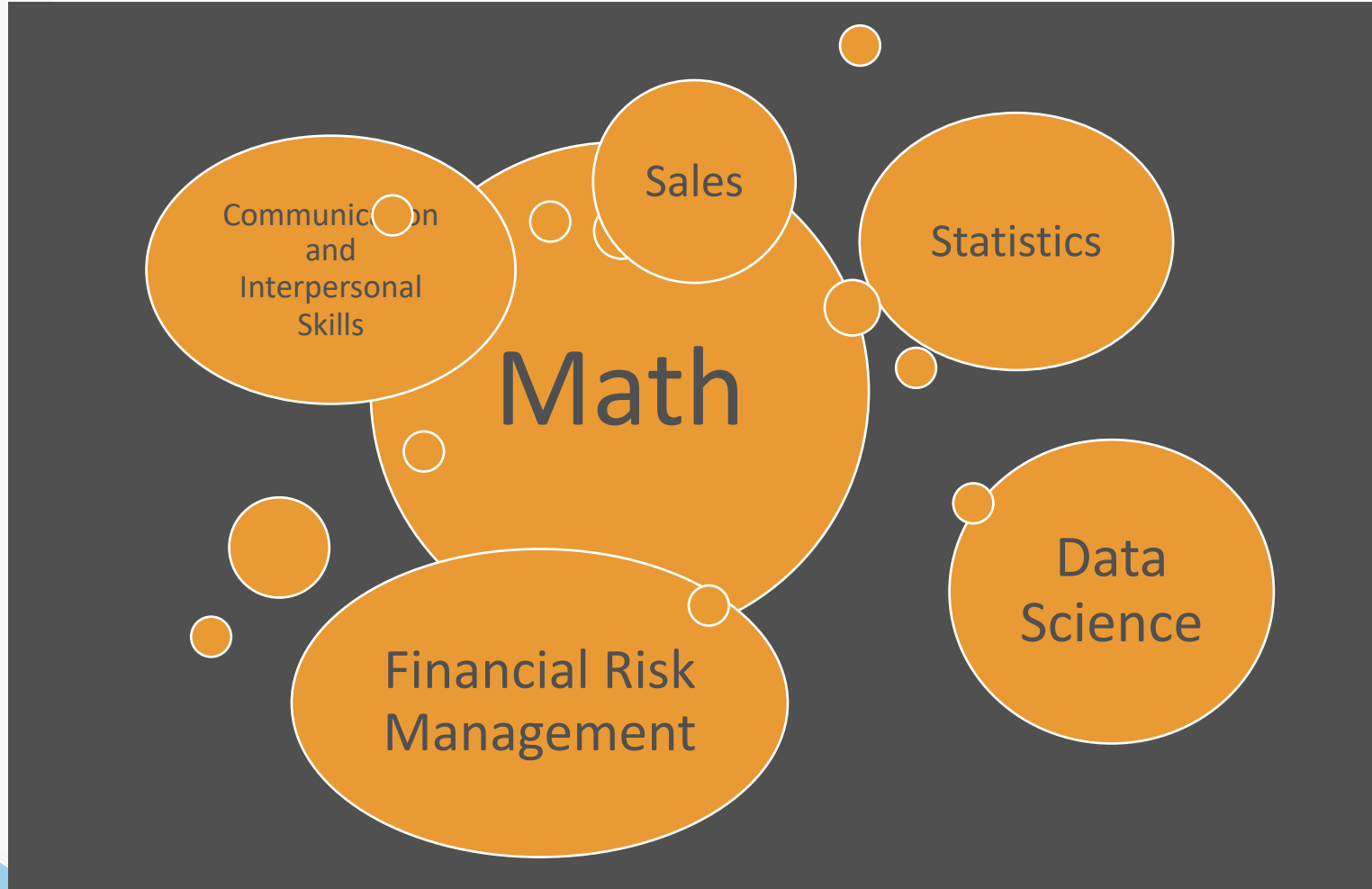


Employers place **more weight** on the student's relevant skills required at work and their **ability to communicate** when evaluating the student's performance. Over one-third of employers in this study indicated that co-op students **struggled in workplace communication**, particularly to speak out their mind. Equally important, almost two out of five employers pinpointed the lack of relevant skills for the job, including actuarial science, computer literacy, math formula, and insurance literacy, particularly life insurance.



Co-op supervisors look for students who could **communicate tasks openly** either with the supervisor or other teammates. Employers prefer co-op students who are **not afraid** of asking questions and/or making mistakes. **Formal language** is preferred in the workplace, especially during **presentations**. Almost 40% employers indicated that co-op students **should speak up and speak their minds**.

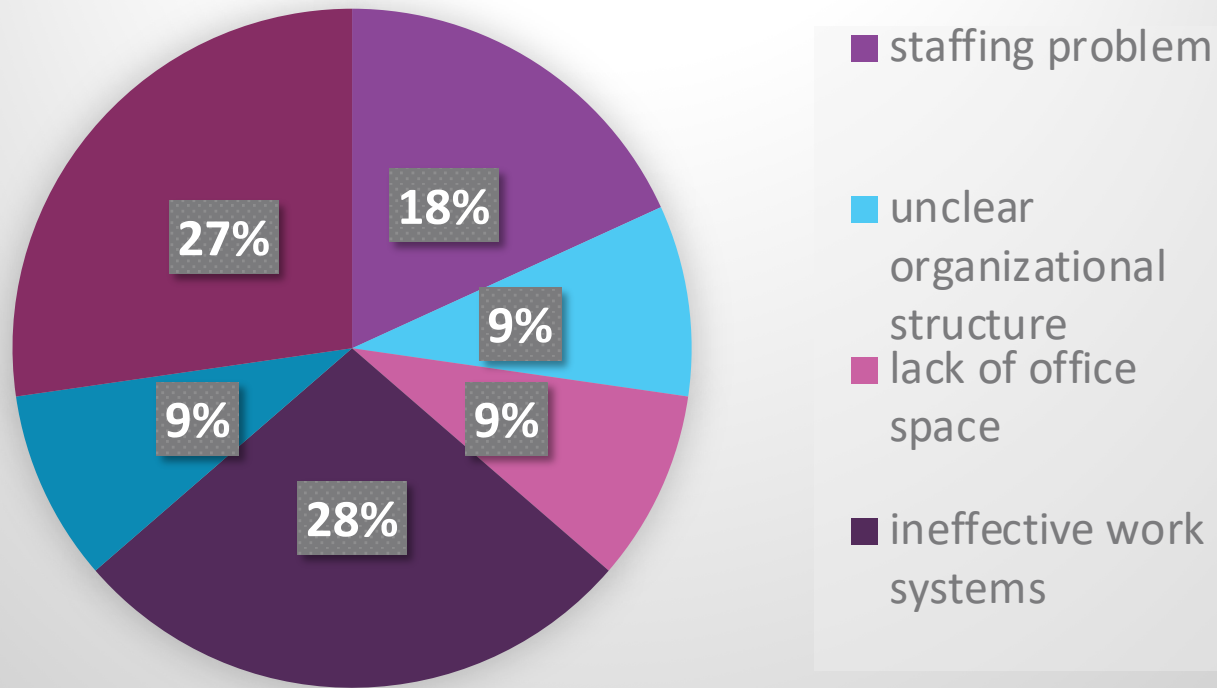
Skill Diversity – Industry Needs



- Statistics
- Probability
- Calculus
- Statistical programming
- Data Science
- Database programming language and tools: SQL, Tableau
- Financial Risk Management
- Sales
- Communication & Interpersonal Skills

Learning Potential – Student Perspectives

Student Constructive Feedback



That said, only one out of nine students were comfortable with providing direct constructive feedback in writing. 27% students revealed that they want **more challenge** at work in terms of more complex tasks. Almost one-third critiqued the ways the **employers run the office**, e.g., too many restrictions in data analysis and data correction systems, and lack of deadlines. 18% students feel that the company could use **more staff** to help with the workload. Co-op students tend to be more open to critique lack of office space or **office environment** in general, **fix the website**, and **unclear organizational structure**.



Putting in perspective

- Various studies in Europe, Asia, and Northern America highlight **disconnect** between the needs of the industry and the skills of graduates (Mishra, 2014; Davies & Qiu, 2016; Aston & Bekhradnia, 2003).
- “The current skills gap in intermediate-level jobs (many of which now require a graduate qualification for entry). Of the jobs created over the next decade 80 percent will be in occupations that typically recruit graduates (including those with sub-degree qualifications). The “knowledge economy” of the future will require **more highly skilled individuals**” (Ashton & Bekhradnia, 2003).
- “A majority of ‘employable’ graduates in India come from the country’s top 30 institutions. These institutions are also most likely to be **collaborating with industry**” (Mishra, 2014).



Implications for Institution in Furthering Employability of Math Graduates

- Universities should consider early-term employer feedback as an opportunity to help Math students reflect and develop extra skills required in the workplace over the course of their study.
- Universities should seek opportunities to integrate in the Math curriculum practicable soft skills, such as communication and problem solving. Other works on work-integrated learning or graduate employability heighten the importance of real-world learning.
- A prospect of building an individual academic growth chart may help students prepare themselves better for the job market upon graduation.
- Universities in Indonesia could gain better understanding about what the industry needs from their graduates to really start working on closing the gap between industry demands and graduate employability.
- Particularly in Prasetya Mulya University, employer feedback could be an avenue to strengthen partnership with industry by addressing real-world challenges in the context of co-op.



A bigger picture

- A new set of Indonesian ministerial regulations on work-integrated learning to improve graduate employability was launched in April 2019.
- The new regulation encourages an industry-university collaboration to further graduate employability.
- Another step is a nationwide coordination between public/private universities and state-owned enterprises to facilitate the initial needs-matching for student co-op/interns electronically.
- The prospect of such a coordination is excellent as it helps university administrators map out and provide student skills data to the companies of various segments, including science/technology, services/retail, and media/communications.
- At this point, over 100 public and private higher education institutions in Indonesia (universities, technical college, and others) are subscribed. The students of any level of study that are on the co-operative program or internship track are selected by the system based on their major and specific skills to be matched with available state-owned companies.



Specifically for the Co-operative Education Program @PrasetiyaMulya:

- Both employer and student feedback should be heard by both sides to encourage a wider scope of communication within the program. A co-op student may or may not come back to work for the same company, but the skills addressed are applicable elsewhere in the industry.
- Soft skills are not offered as a fixed course, instead integrated in the lesson planning or types of projects. Therefore, the program should consider a simple and practical plan to promote the culture of assertiveness for students without complicating the curriculum.
- For the students, reflecting on their communication skills early in the course of the study will provide an avenue to chart individual progress and affectively learn with fellow students prior to graduation.
- A much more useful, yet comprehensive feedback system in the co-op management would help all stakeholders of the program.



References

Aston, L. & Bekhradnia, B. (2003). Demand for Graduates: A review of the economic evidence. Higher Education Policy Institute. Retrieved on June 13th, 2019 from <https://www.hepi.ac.uk/>

Davies, P. & Qiu, T. (2016). Labour market expectations, relative performance and subject choice: Project Report. The Centre for Higher Education Equity and Access. University of Birmingham. Nuffield Foundation. Retrieved on June 13th, 2019 from <https://www.nuffieldfoundation.org/sites/default/files/files/labour-market-expectations.pdf>.

Merryfield, M. M. (2012). Four strategies for teaching open-mindedness. Social Studies and the Young Learner 25 (2), pp. 18–22.

Mishra, A. (2014). Growing mismatch between graduate skills, market needs. University World News. Retrieved on Jun 13th, 2019 from <https://www.universityworldnews.com/post.php?story=20140204171742828>.

n.d. (2012). The Role of Higher Education in Career Development: Employer Perceptions. Retrieved on June 13th, 2019 from https://chronicle-assets.s3.amazonaws.com/5/items/biz/pdf/Employers_Survey.pdf

n.d. Does GPA matter when applying for a job? Retrieved on June 13th, 2019 from <https://www.cleverism.com/gpa-matter-applying-job/>.

n.d. Empowerment and accountability: Power tools for the teacher/student relationship in the inclusive learning environment. Retrieved on June 13th, 2019 from <http://inservice.ascd.org/empowerment-and-accountability-power-tools-for-the-teacherstudent-relationship-in-the-inclusive-learning-environment/>.

Palomares, R. (2019). Bouncing back: Teaching children resilience skills. American Psychological Association. Retrieved on June 13th, 2019 from https://www.montgomeryschoolsmd.org/uploadedFiles/schools/greatsenecacreekes/counseling/Teaching_Children_Resilience.pdf

Sari, F. (forthcoming). Industry-Higher Education Collaboration for Graduate Employability. ASC Series Vol. 46.

Tocino-Smith, J. (2019). Teaching resilience in schools and fostering resilient learners. Positive Psychology Program. Retrieved on June 13th, 2019 from <https://positivepsychologyprogram.com/teaching-resilience/>.