



# Implementation and evaluation of a self-directed learning activity for first-year medical students



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## Introduction

- Pre-clinical curriculum must include self-directed learning (SDL) activities (LCME Element 6.3)
- Components of SDL include
  - identify learning gaps
  - fill in knowledge gaps with credible sources
  - share information with peers and supervisors
  - receive feedback on information seeking skills

## Purpose

- Assess implementation and effectiveness of SDL activity in a 6-week first-year medical student course

## Methods

### The Assignment

- Case studies in infectious diseases
  - 38 teams of first-year medical students
  - Annotate, cite scholarly sources, share information

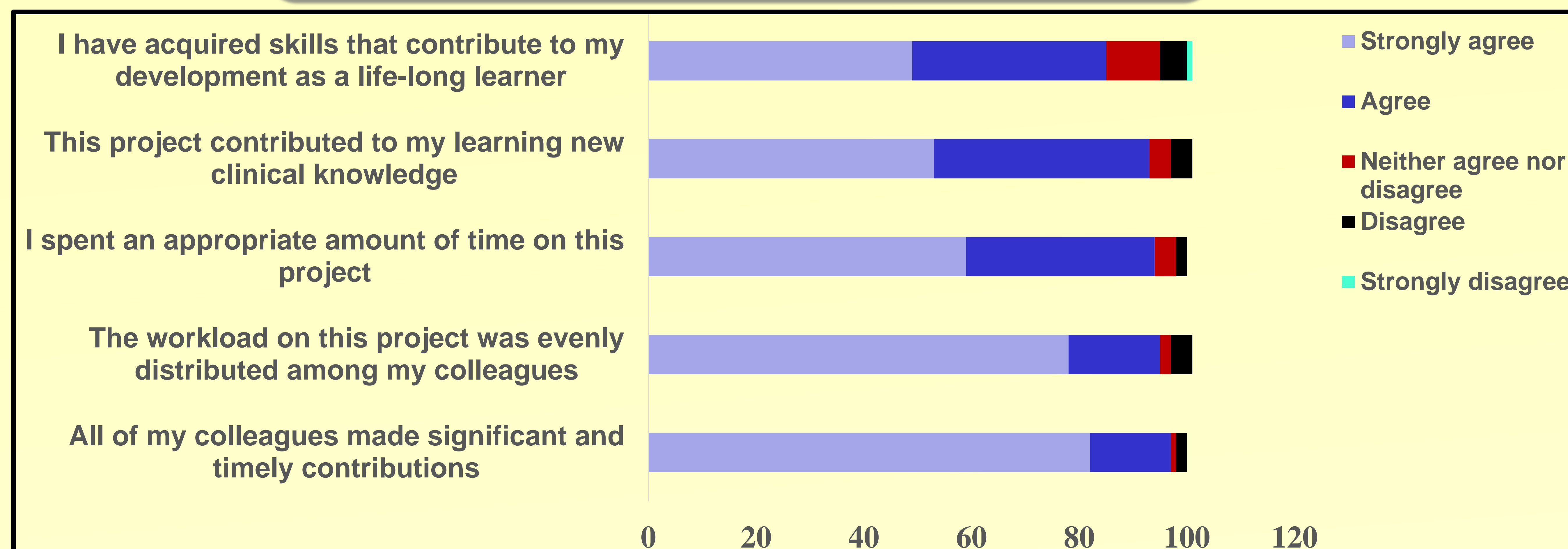
### The Evaluation

- Student survey: 5 Likert-style questions analyzed using descriptive statistics
- Student survey responses to open-ended question, *Please reflect on how this assignment affected your perception of your self-directed learning skills*, was analyzed by thematic analysis

## Table 1

- Selected student responses to the prompt: *Please reflect on how this assignment affected your perception of your self-directed learning skills*,
- Final codes with sample statements, themes and theme definitions.
- We identified 14 final codes that we categorized into four themes: self-learning skills, collaboration, application, and meta-cognition,

## Results - Student perception of SDL activity



| Confidence           | Sample Statements  | Themes               | Theme Definitions   |
|----------------------|--|----------------------|---|
| Enjoyment            | I learned to be more efficient in identifying relevant sources that would answer the knowledge gaps that I had.  | Self-learning Skills | Development of skills that facilitate acquisition of evidence-based knowledge, including use of library resources, time management strategies, and efficient ways of accessing and sorting through information. These skills were developed through practice. |
| Self-assessment      | Time management is something that I have had to relearn since starting medical school and I believe this self-directed learning assignment allowed me to reflect on my improved skills.  |                      |   |
| Challenged/stretched | This assignment helped me learn how to streamline my search strategies to quickly find relevant peer reviewed journal articles.  |                      |   |
| Confidence           | It also helped me to practice some of the evidence based research evaluation techniques we learned in our PPS curriculum.  | Collaboration        | Development of teaming skills including communication, leadership, and utilization of available expertise to accomplish a common goal.  |
| Enjoyment            | I rarely get the opportunity to work in teams, so this project helped me build on my team work and leadership capabilities.  |                      |   |
| Self-assessment      | I became aware how my research abilities were limited and asked peers how they researched to better improve my search.   | Application          | Recognizing that the skills they've developed will transfer to their clinical practice.   |
| Challenged/stretched | At the beginning of this assignment, I felt comfortable utilizing research databases. I soon realized that I was unfamiliar with a multitude of available resources, so I consulted a medical librarian.   |                      |   |
| Confidence           | Self-directed learning is a method of continued learning that I will embrace as a practicing physician.  |                      |   |
| Enjoyment            | It also reinforced my ability to synthesis basic science research and apply it to an understanding of aspects of disease processes.  | Meta-cognition       | Self-reflection on their interaction with the task that led to a new understanding of their weaknesses and abilities with respect to their research skills, addressed their confidence, and recognized their personal learning preferences.                   |
| Self-assessment      | Learning in lecture is just absorbing the material others have prepared for us, but with this project, not only did we have to interpret the clinical scenario presented, we had to apply that to searching the current scientific evidence.   |                      |   |
| Confidence           | This assignment made me more comfortable with a subject that I had very little confidence in. I have never taken Microbiology or Immunology before this course and having the chance to work on something that involved applying critical thinking skills and familiarizing myself with the literature in the subject was a nice break from the mundane multiple choice exams. If the course was only multiple choice exams, I don't think I would have ever had the chance to grow confidence with this material. |                      |   |
| Enjoyment            | I enjoyed the SDL project because (it allowed me to identify my own weaknesses and address them via research. The personalization aspect was great because) I didn't have to spend any time on things that I already knew, rather I got to focus on my own learning gaps and discuss them with a group.  |                      |   |
| Self-assessment      | I thought I was much better at doing research than I actually was and using this assignment to practice was very helpful.  |                      |   |
| Challenged/stretched | This assignment pushed me to learn new and more efficient ways to access information to possibly help a patient.   |                      |   |

## Discussion

- Workload for the course director was feasible
- The time required to complete the activity was reasonable and a team-based approach was effective in evenly distributing the workload
- Students acquired new clinical knowledge and life-long learning skills
- Results of thematic analysis indicated that many students need assistance to develop SDL skills
- The theme, *Self-learning skills*, contained the greatest volume of students comments

## Conclusion

- SDL activities can be successfully implemented in preclinical courses and are valued by students
- This SDL activity may contribute to the development of life-long learning skills for some students.

## Future

- Administer SDL readiness assessment test to incoming first-year medical students
- Incorporate SDL activities throughout the preclinical curriculum

## References

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