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INTRODUCTION

- Managing learning strategies is a vital part of a physician’s professional development, starting from undergraduate medical education (UME). In particular, retrieval practice has been widely established to be highly effective (Kyriakoulis 2016).
- Much of the current body of research on retrieval practice in UME is regarding retrieval practice either directed by the curriculum, i.e. formative/summative exams, or otherwise directly related to the educational institution
- Consequently, retrieval practice self-directed by students unrelated to institutional stimulus, defined here as student-derived self-directed retrieval practice (SDSDRP), remains less explored
- Here, a mixed methods approach is employed to characterize the nature, effectiveness, and efficiency of SDSDRP methods used by a first-year undergraduate cohort at Wayne State University School of Medicine.

METHODS

- A focus group (n=6) was conducted with second-year students to characterize experiences with SDSDRP, especially in their first year
- Using data and direct input from the focus group, a survey including questions about the most common SDSDRP methods, Anki, self-quizzing (SQ), diagramming and concept mapping (CM), questions from external lecture resources (QLR), and question banks (QB), was developed.
- The survey contains up to 39 Likert and Likert-like, 4 narrative, 3 short answer, and 1 multiple choice question characterizing SDSDRP behaviors and methods. Question blocks regarding specific SDSDRP methods were hidden if students indicated that they did not use that method. “Strongly agree” and “agree” were interpreted as concordance with the respective Likert question.
- Key areas of question for each method included effectiveness measured by either improvement in content mastery or in exam score, efficiency, and time spent on that method.
- Currently, data collection from the survey is still ongoing. Themes from the focus group were analyzed and will be triangulated with qualitative survey data. Preliminary data from the survey (n=12/280) is presented.

RESULTS

SDSDRP Effectiveness by Method

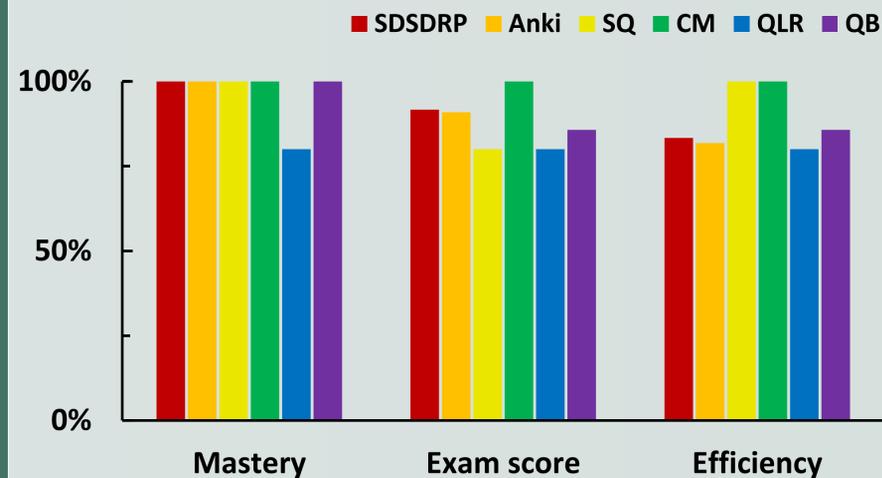


Fig. 1. Proportion of survey respondents who agreed that each respective SDSDRP method based on focus group data resulted in improvement of course concept mastery and exam score or was efficient. SQ, self-quizzing; CM, diagramming and concept mapping; QLR, quizzes from external lecture resources; QB, question banks.

SDSDRP Percent of Study Time Spent by Method

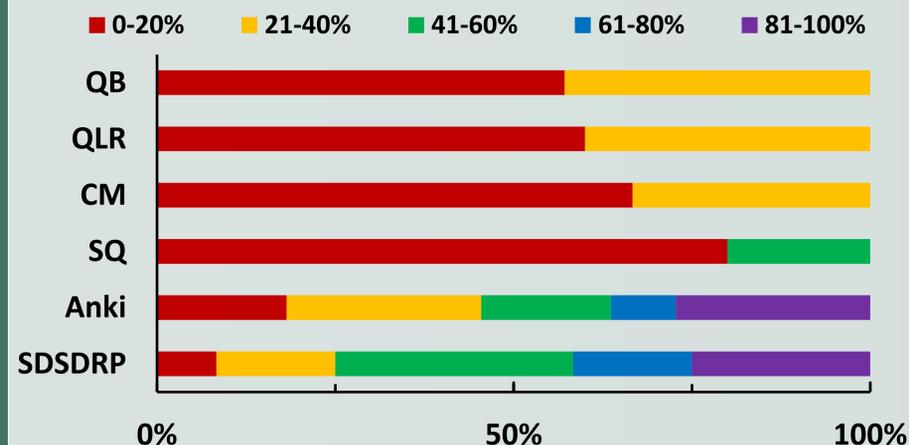


Fig. 2. Percent of total study time spent on selected SDSDRP methods based on focus group data. SQ, self-quizzing; CM, diagramming and concept mapping; QLR, quizzes from external lecture resources; QB, question banks.

RESULTS

SDSDRP Method Usage

SDSDRP method	Usage rate
SDSDRP in general	100.0%
Anki	91.7%
Self-quizzing	41.7%
Concept mapping	50.0%
Quizzes from external lectures	41.7%
Question bank	58.3%

Table 1. Survey respondent SDSDRP usage rates of selected methods based on focus group data.

- Survey respondents reported a high rate of SDSDRP usage in general (Table 1). Focus group data agreed.
- Most survey respondents felt that the SDSDRP methods that they participated in were effective in both improving their mastery over course content and course exam scores as well as being efficient in terms of time spent (Fig. 1). Intuitively and from focus group discussion, students tended to discontinue SDSDRP methods that they felt were ineffective or inefficient.
- In contrast to survey respondents’ high use, perceived effectiveness, and perceived efficiency of Anki, focus group participants rated it as substantially less efficient and somewhat less effective. The focus group mentioned that Anki might have been less effective later parts of the first-year curriculum, which has not yet been experienced by first-years.
- Many SDSDRP methods, including SQ, CM, QLR, and QB, despite commonly having little time spent on them, were still reported to be both effective and efficient.

CONCLUSIONS

- SDSDRP use is extremely common amongst students in UME
- Most common SDSDRP methods are likely effective in promoting content mastery and exam score as well as efficient to use
- UME institutions can consider providing additional support or resources for the most valuable SDSDRP methods
- Additional survey findings in addition to the preliminary data presented here will allow a fuller conclusion.
- Future direction: comparative studies with other retrieval practice or non-retrieval-practice UME study methods