Topic Modeling – LSA – Interview study on clinicians' experiences with digital tools in the hospital

Interview dataset
- Question 1: Have you experienced any positive emotions or feelings when using digital tool/s, and if so, can you describe them?
- Question 2: Have you experienced any negative emotions or feelings when using digital tool/s, and if so, can you describe them?
- Question 3: Do these tools affect how you feel about your work or about yourself as a [their job role, e.g., physician/nurse]?

Method:
Approach: Latent Semantic Analysis (LSA)
Input: 12 interview transcripts
Output: 10 topics with each 20 words

Headings in brackets are interpreted and introduced by human-based approach

Question 1

(efficient patient care delivery) Topic 1: work, patient, think, positive, tool, look, time, course, know, thing, example, good, come, use, like, need, information, lot, quickly, cool

(work challenges) Topic 2: work, tool, relatively, annoy, difficult, open, expect, trigger, electronically, care, transfer, actually, realize, little, medical, update, technology, grateful, long, anymore

(efficient patient care delivery) Topic 3: new, lot, datum, monitor, transfer, need, good, far, big, look, medical, like, nursing, write, gain, efficient, department, relatively, set, certainly

(time saving) Topic 4: software, tool, time, save, hour, life, module, text, app, everyday, program, question, actually, ecg, use, answer, gain, expectation, good, finding

(diagnostic information) Topic 5: know, look, answer, question, positive, ecg, try, function, effect, exist, search, breath, depend, course, say, beginning, test, ray, quick, write

(fast, efficient and satisfying patient care) Topic 6: patient, ecg, come, positive, doctor, able, effect, point, available, immediately, far, surgery, tool, nice, write, round, nursing, care, medication, experience

(patient monitoring) Topic 7: transfer, datum, new, answer, try, relatively, question, monitor, time, know, patient, service, save, effect, say, sign, vital, hospital, test, breath

(access to information) Topic 8: status, right, search, helpful, save, quickly, overview, management, look, patient, need, know, quick, blood, value, entire, paper, appreciate, click, time

(access to information) Topic 9: ecg, access, great, status, long, leave, home, quickly, early, text, software, know, clear, module, search, operation, hospital, surgery, fast, image

(electronic documentation) Topic 10: documentation, care, appreciate, information, electronic, canton, fact, medication, search, point, round, think, moment, extreme, easy, long, emergency, open, ask, quickly

Question 2

(inefficiencies and time constraints) Topic 1: work, patient, time, tool, think, program, example, thing, yes, like, problem, need, know, course, day, good, say, information, come, lot

(frustrating inefficiencies) Topic 2: program, patient, information, lot, correct, look, medication, unnecessary, error, example, frustration, clinical, inefficient, interface, different, open, time, new, wrong, certain

(frustrating inefficiencies) Topic 3: program, time, work, day, think, frustrating, correct, ticket, yes, pc, duty, long, new, night, frustration, cost, inefficient, lot, morning, application

(annoying inefficiencies) Topic 4: patient, paper, wait, switch, computer, insanely, ago, annoying, week, room, happen, lab, manage, disaster, large, crash, program, work, affect, resident

(inefficient prescription) Topic 5: write, time, change, page, day, medication, button, anesthesia, super, example, ticket, week, paper, space, negative, different, outage, prescription, long, enter

(problems across all hospitals) Topic 6: patient, time, digital, open, actually, datum, solve, problem, different, house, source, place, ward, forget, file, insanely, able, app, start, relatively

(inefficient blood testing) Topic 7: blood, paper, wait, lab, scan, plan, life, disaster, click, open, happen, measure, place, want, program, everyday, switch, lot, moment, datum

(uncertainty) Topic 8: blood, feeling, want, time, certain, need, patient, scan, uncertainty, intuitive, term, team, able, think, efficiently, annoying, application, treatment, event, emergency

(inefficiencies and errors) Topic 9: time, source, complicated, error, forget, life, open, example, term, access, clear, intuitive, work, measure, uncertainty, prescription, right, understand, phone, scan

(frustrating processes and communication) Topic 10: application, frustrating, blood, think, tool, scan, certain, house, board, mail, document, ward, enter, tumor, efficient, course, need, dictation, space, benefit

Question 3

(image change on patient interaction) Topic 1: patient, think, work, thing, change, doctor, actually, time, tool, lot, look, like, know, need, datum, simply, information, knowledge, use, course

(image change on knowledge and information retrival) Topic 2: change, knowledge, know, tool, doctor, physician, today, person, long, increase, information, senior, past, medical, paper, able, maybe, situation, experience, mean

(image change due to information access and quality) Topic 3: actually, information, simply, like, use, datum, thing, help, offer, influence, quality, enjoy, new, hospital, machine, tool, depend, somewhat, exciting, example

(image change but joyful) Topic 4: doctor, work, grow, change, pc, write, difference, job, ai, enjoy, thing, spend, problem, program, resident, professional, bit, important, open, time

(image change more modern) Topic 5: datum, think, simply, hand, profession, important, affect, development, assessment, digitization, colleague, improve, great, deal, accordingly, general, ai, offer, modern, damage

(image change due to processes and documentation) Topic 6: like, document, feel, know, anesthesia, discipline, work, office, doctor, knowledge, think, medication, operate, program, play, computer, technical, colleague, compare, little

(importance of correct integration) Topic 7: ai, need, like, lot, information, money, important, use, new, datum, yes, form, standard, digitization, assessment, bring, say, tell, access, old

(open attitude towards digitalization) Topic 8: ai, important, know, actually, change, like, knowledge, talk, computer, overall, thing, feel, definitely, half, grow, time, open, today, anymore, briefly

(transition from paper to digital) Topic 9: hand, paper, datum, ultimately, past, help, access, read, pc, actually, screen, enjoy, lot, work, knowledge, profession, speak, physician, phone, clear

(image change towards more screen-centered care) Topic 10: half, consultation, difficult, big, world, money, grow, say, nursing, phone, situation, screen, hear, change, document, computer, conference, pandemic, standard, end