

Using wiki assignments in medical school

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Abstract

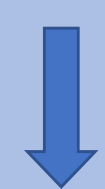
A wiki is a collection of pages that allow collaborative modification and management (eg, Wikipedia). First-year MUCOM medical students designed a Wiki that outlined the major concepts covered in Immunology during the Scientific Foundations of Medicine class. The first three deadlines were peer-reviewed where each student turned in their wiki and then anonymously reviewed another student's wiki content and suggested feedback. For the final deadline, all participating student's were placed into groups that collaborated to collate the individual wikis into one. Thus, each student created and received peer feedback for their Immunology study guide for the Board Exam.

Design

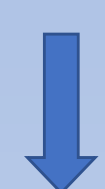
Each optional assignment included 2–4 lectures that “chunked” material into an appropriate size



Students were instructed to complete the learning objectives for each lecture to outline the major concepts covered



Each assignment was designed to be peer-reviewed so that students would receive constructive feedback



The last assignment was a group project designed to allow individuals to collate their wikis to provide active and collaborative learning

What worked

- Students liked the idea of creating their own study guide for the Board exams
- Of 150 students, 17 students turned in the first assignment that covered 2 lectures
- Some students completed the peer-review assignment

10.1: Immunology

- Compare and contrast the components and cells of innate and adaptive immunity
 - **Innate:** initial response with what is already available in your body
 - Quick (within hours)
 - Epithelial barriers, mast cells, phagocytes, dendritic cells, Complement system, NK cells and ILCs
 - **Barriers:**
 - **Physical/ anatomical**
 - Skin
 - Mucous membrane
 - Normal flora
 - **Chemical/ physiological**
 - Mucus, saliva, tears
 - pH
 - Stomach acid
 - Local chemical factors- lysozyme, lactoferrin
 - **Complement system:**
 - Phagocytes: ingest foreign particles
 - Chemotaxis
 - Opsonization
 - **Adaptive:** recognize enemy, adapt to it, make specific weapons, remember for later
 - B lymphocytes → Antibodies
 - T lymphocytes → Effector T cells
 - Takes longer (Days) because body has to build response
- Categorize the functions of individual immune cells during protection against invasion
 - **Innate:**
 - **Phagocytes:**
 - Ingest foreign particles (full of proteolytic enzymes)
 - Get activated and recognize common patterns on pathogens with help of receptors
 - **Pattern Recognition Receptors (PRRs)** on phagocytes recognize **Pathogen Associated Molecular Patterns**
 - Types:
 - **Neutrophils:** kill by phagocytosis
 - **Macrophages:** kill by phagocytosis
 - But ALSO: **release cytokines** → specific effects on interactions and communications between cells
 - Cytokines: communication protein
 - Basically they rally the troops → tell other cells there is a foreign invader and ask them to get activated
 - Help amplify immune response
 - Types:
 - **Interleukines (IL)**
 - **Interferons (IFN)**
 - **Tumor Necrosis Factor (TNF)**
 - **Chemokines:** Cytokines which act as a chemoattractant to guide migration of cells during chemotaxis
 - **Adaptive**
 - **T cells**
 - **Helper (CD4)**
 - Release message- cyto and chemokines
 - Activate other cells (such as phagocytes and B cells)
 - **Killer (CD8) cytotoxic**
 - Receive message from helper T cells
 - release cytokines

What did not work

- Because the Immunology wiki was optional, not every student did the assignments
- Due to the Immunology lecture schedule and trying to “chunk” material into manageable sizes, the 2nd and 3rd assignment deadlines were too close together, so many students only completed the 1st assignment
- Because there was not a hard “deadline” for the peer review (they were directed to give feedback within 24 hours), some students did not complete that part of the assignment so some students did not receive feedback

Feedback from students on the Immunology wiki

- There was really poor timing with the second exam
- The deadlines should not be hard deadlines
- Students had to prioritize balancing other class work and exams
- Students suggested that an assignment between students in the class where they could all contribute to a page may be more beneficial and more students would participate
- Some students never received feedback, so there was essentially no benefit to completing the assignment

What I will change for next year

- The Immunology wiki will not be optional and course points will be available for those students that complete the wiki assignment
- The Immunology lecture schedule will be more spaced out, allowing better integration of the wiki assignments into the course
- The deadlines will be “suggested” deadlines to facilitate keeping students on track
- All assignments will be group projects where the students can work together on the wiki