



Opinion

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To Develop an App or Technology Platform for Interprofessional Education & Collaboration for Research Outside Universities & Create Partnerships with Organizations to Create New Learning and Career Opportunities for Dental Hygienists

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Opinion

The oral-systemic link and pathogenesis of inflammation are the key drivers for the body's diseases [25]. Dental hygienists are one of the most underutilized professions in healthcare today [1]. Dental hygienists have a broad base of education with medical-dental knowledge that will be the key conduit to provide preventative dental healthcare in many medical related settings [1]. Dental hygienists must take continuing education courses in several dental, medical, and health topics to maintain their licenses every two to three years depending on the state they live in. Some of the continuing educational courses are in medical emergencies, pharmacology, anesthesia, cardiopulmonary respiration, cariology, diabetes, oral pathology, nutrition, chemical dependency, and many others.

In the future, the American Dental Hygiene Association will be partnering with similar organizations to bring about the changes needed to bridge the gap with the dental-medical fields [1]. Dental hygienists will be working with many other health professions to take on other roles in healthcare within their scope of practice [1]. My masters' project aim is to create collaborations, develop partnerships for science research between organizations by utilizing technology. It will allow dental hygiene to create a platform to collaborate with other organizations and expand dental hygiene into new areas of healthcare. Technology is a great way to develop new curricula for education. The advancements with technology

have many benefits for education and the dental hygiene field. New innovations with technologies are being developed, such as simulations for learning, online education, and student engagement apps, and gathering data for student learning outcomes.

When I investigated technology, I did see that there is a platform that already exists for collaboration. It is on Microsoft Teams™. Microsoft Teams™ is affordable and a great way to create teams, share information, and work on documents live in real-time. I learned that Microsoft Teams™ has enterprise-grade security and two-factor authentication practices, it is HIPPA compliant, and it is free for higher education. The main idea is "To develop an app or a platform for interprofessional education & collaboration for research outside universities & create partnerships with organizations" (Figures 1-3).



Figure1: All the Phones I Owned.

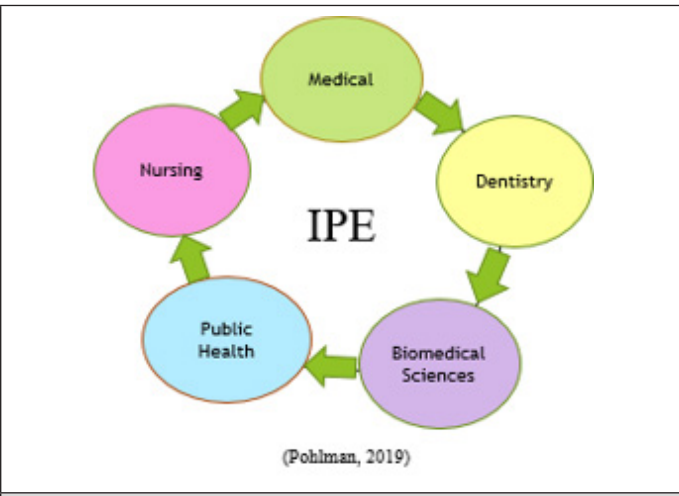


Figure 2: Interprofessional Collaboration & Education.



Figure 3: Pin on Gum disease.

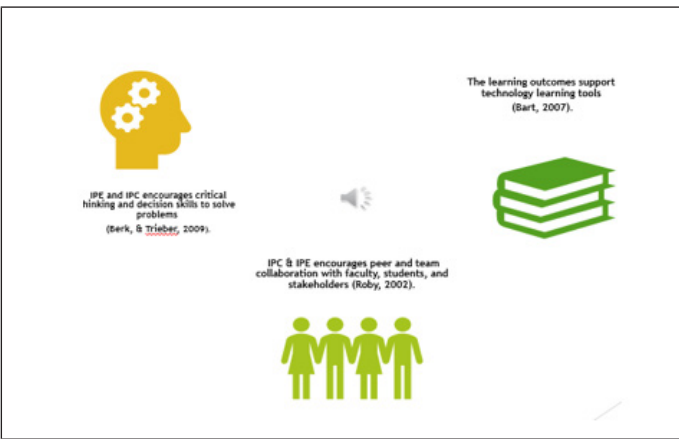


Figure 4:

The Future of Dental Hygiene Importance of a Collaboration Platform

- a. New advances in science and technology will spur innovation and change to advance the dental hygiene profession along with education [1].
- b. To advance the dental hygiene profession, organizations will collaborate and partner with other similar groups in

healthcare, and associations will work on future goals and legislative processes [1].

- c. Hygienists in the future will work among other medical-dental healthcare providers. Such as physicians, dentists, dental therapists, health organizations, education, and others [1].
- d. New paths career paths will be developed for hygienists requiring business and technology skills for example independent or entrepreneur hygienists [1].

Evidence to Bridge Medical and Dental Together for IPC

The studies are overwhelming that support bringing medical and dental together [2]. Dental disease is a known multimorbidity factor in many health conditions [2]. The rise of dental healthcare costs have significantly impacted healthcare [2]. To increase health outcomes, we need to ask about patient’s oral health and preventative care [3]. There is more than enough evidence that poor oral health by costing employers millions of dollars in lost productivity, is getting worse with chronic disease, and increases emergency-room visits [3]. Therefore, the impact of interprofessional education (IPE) and collaboration (IPC) can be profound by bringing solutions to medical-dental healthcare.

What is Collaboration?

Collaborations can occur virtually between any level of an organizational organization. People can collaborate within an organization, between organizations, between countries, and between professions. In the business domain, sharing information is called inter-organizational collaboration. The central beliefs are similar in the health professions and are known as interprofessional collaboration (IPC) [4]. There are many key concepts relevant to collaboration, including sharing research, partnership, interdependency, and power. Collaboration is an equally beneficial and well-defined relationship entered by two or more organizations to achieve common goals. The association includes a commitment to mutual relationships and goals. A mutually developed structure has shared responsibility, joint authority and accountability for success, and sharing of resources and rewards [4].

Why Develop Collaboration & a Platform

- a. Collaboration encourages and inspires people [5].
- b. Collaboration stimulates learning & is educational.
- c. Efficient collaboration will save time and money.
- d. Collaboration creates solutions to solves problems.
- e. Collaboration creates advancement & achievement.
- f. Collaboration can happen anywhere in the world.
- g. Collaboration grows organizations [5].

The Benefits of Interprofessional Collaboration

- a) Empowers teamwork [6].
- b) Less communication gaps.
- c) Encompasses comprehensive care.
- d) Prevents readmission rates.
- e) Promotes overall patient centered care.
- f) It helps medical professionals to support each other [6].

How Technology Can Improve Learner-Centered Teaching

Changes the balance of power to the learner: Online assignments help to give students opportunities to learn and master the material at their own pace. Technology activities can include wikis, online quizzes, exams, blogs, and discussion boards [7]. Students like structured organized workflow with course content to avoid confusion with courses such as online syllabus, learning management system (LMS), email, and important dates. Teaching with technology facilitates learning and helps the instructor develop learning experiences that complement each other even if the student is working on an online assignment or meeting face to face. Online homework assignments, clickers an online education game, and surveys are technologies that help support learning objectives. Responsibility with learning is the student learner's responsibility which helps students take ownership of learning by connecting with learning the material and evaluate their learning. Technology that helps to support ownership goals in learning include blogs, wikis, online quizzes, and Voice Threads. The Evaluation helps to provide support and foster new learning such as, online quiz banks to help students pass quizzes, technology that supports progress with learning outcomes, learning platforms that provide collaboration, and peer review [7].

Key benefits of IPE for Student Learning

- a. Based on research originally conducted by the World Health Organization, the key benefits of adopting interprofessional education can be thought of as follows:
- b. Students develop the ability to share knowledge and skills collaboratively.
- c. Removal of a compartmentalized curricula.
- d. Integration of new skills and areas of knowledge.
- e. Improved interprofessional communication.
- f. Generation of new roles.
- g. Students become competent in teamwork.
- h. Interprofessional research is promoted.

- i. Understanding and cooperation between educational and research institutions are improved.
- j. Collective considerations of resource allocation according to need.
- k. Consistency in curriculum design is ensured [8].

Why Interprofessional Healthcare Education (IPE) & Collaboration (IPC)

Improve healthcare: Institute for Healthcare Improvement (IHI) Triple Aim Framework (Woltenberg et al., 2019). To develop a better patient experience with safe quality healthcare [9]. Decrease healthcare cost, promote teamwork with community- centered healthcare. Create improvements and advancements in population & public health with the Affordable Care Act outcomes to increase in responsive healthcare systems which include:

- a. Accountability Care Organizations
- b. patient medical homes
- c. transitional care home models [9].

Implement Oral Hygiene Care Interventions and Standards with Nursing

Older adults in complex care facilities frequently rely on nurses to provide oral hygiene care because they could not do it independently [10]. The study found that a third of geriatric patients' oral hygiene care was not taken care of and denture care was infrequent. Nurses can help decrease microbial infections such as pneumonia, gingivitis, periodontal disease, oral candidiasis, and enhancing cough reflex, functional and psychosocial well-being, and oral comfort. The study found that nurses provided inadequate self-care of the natural teeth oral tissues. Barriers to effective care: Nurses did not have enough time to provide oral hygiene care, nurses thought oral hygiene to be intrusive, nurses need to help patients understand the importance of good oral health, nurses need to ask more questions and implement oral hygiene and develop standards to assist or supervise patients to maintain plaque control while hospitalized [10].

Student Competencies: Interprofessional Team-Based Care

To gain values and ethics- By working together with other health professions to maintain shared values and mutual respect [9]. To share roles responsibilities- To use one's own knowledge with other health professions to properly assess and address healthcare needs of individuals and populations they serve. The Interprofessional Communication- To communicate with other health professions, patients, families, communities in supporting a team approach to treatment of health and prevention of disease.

Teams and Teamwork- Support and apply relationship-building values and principals by promoting team methods to perform effectively in many team roles to plan and deliver individual and people centered healthcare that is safe, timely, efficient, effective and equitable [9].

Study: Changing Virtual Team Membership Improves Participation [11]

According to a study by [11] virtual team membership improved team participation by 70%. Dineen viewed the group work design's impact over many variables and used independent surveys with students before the study, weekly, and after the project. Dineen found that most of the students who responded to the surveys had no previous virtual teamwork experience. The study was found to be significant teaching.

- a. Twenty-six groups were formed, and membership changed weekly with 3-5 people for eight weeks,
- b. The groups analyzed short cases and answered two questions relating to the assignments,
- c. Students had the option to meet by phone or face-to-face,
- d. 70% completed the group work on private bulletin boards in WebCT™ set up by the instructor,
- e. The less experience group reported the most significant learning outcomes and confidence than students who worked in virtual teams before [11].

According to a study by [12] the Net Generation is known as "digital natives." They know the language of computers, video games, and the internet. The Net generation are utilizing all the digital tools such as smart phones, iPod, MP3 players, and wearable technologies. Technology has allowed them to master many complex tasks. There is a mass shift with technology and information creating data driving innovation in healthcare today [13]. The next generation learns improvisation:

- a. Helps build trust,
- b. nurture teamwork,
- c. improve communication and presentation skills,
- d. creative problem solving,
- e. respond quickly to challenges,
- f. they can think on their feet and recognize opportunities,
- g. ready to create change and take risks,
- h. They learn from collaborative learning tools [13]
- i. More than twenty-five percent of students are enrolled in online classes [13] (Figure 4).

Technology is a Key Component for Advancement & Innovation with IPC & IPE

The Microsoft Teams™ platform will help grow partnerships; gather necessary research information; create teams; develop education; increase educational opportunities; create new technologies for innovation; and to advance expand dental hygiene healthcare [14]. This "Microsoft Teams™ is the hub for teamwork within Microsoft Office 365." It gives a secure platform that streamlines collaboration on over 150 international research projects each year [14]. The Heart Institute conducts world class research, and collaboration to prevent, detect, and treat cardiovascular disease [14].

Dental Hygiene Advancement with Technology & Microsoft Teams™ Platform

- a) Create Collaborative Teams [14]
- b) Upload many document types.
- c) Work on documents live in real-time.
- d) Video app integration with Zoom™
- e) More secure platform with enterprise security than Zoom™
- f) HIPAA compliance
- g) Microsoft Teams has many apps to integrate with for teamwork [14].

Review: Platform or App Technology

Collaborative teams are within organizations, between organizations, outside, across organizations [4]. Partnering with key organization or other science health fields will provide research with oral systemic links, bring innovations with technology, develop new technologies; and business processes to integrate medical and dental hygiene care [15]. Gather necessary research to create new curricula to expand dental hygiene into new areas of healthcare within education. Cut down on communication errors amongst providers (EMS,2017). Create collaborative colleges within universities to gather research with other health related fields, includes technology, and business processes [15].

Conclusion

Three Key Points for Colleagues & Administrators to Consider Microsoft Teams™ Platform.

- a. Many organizations conduct research and upload documents to work on documents live in real time with colleagues by gaining confidence with enterprise-grade security and two-factor authentication processes [14]
- b. An important fact is research and work you created is your own.

c. Microsoft Teams is free for higher education giving universities a single hub to collaborate in real-time on documents, meet online, chat, and integrate with educational apps [14,16-25].

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