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GRAPPA 2024: Innovations in Education Workshop

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ABSTRACT. At the Group for Research and Assessment of Psoriasis and Psoriatic Arthritis (GRAPPA) 2024 annual meeting and trainee symposium, an Innovations in Education workshop aimed to explore the skills necessary to design learning objectives, optimize artificial intelligence (AI) use in education, and employ interactive teaching methods. Learning objectives are crucial for structuring educational programs and enhancing learner engagement and performance. Although incorporating AI into education promises untapped potential, it requires careful implementation to avoid introducing inaccuracies and biases. Effective teaching techniques, such as the *Know-Feel-Do* principle, emphasize the importance of understanding audience needs, creating engaging content, and fostering interactive learning environments. With the use of real-world examples in the rheumatology field, the workshop illustrated the diversity and impact of innovative educational practices that can help educators deliver an outstanding learning experience. This paper will cover the key points from this workshop.

Key Indexing Terms: education, GRAPPA, psoriasis, psoriatic arthritis

Introduction

Lawrence Cremin, an influential American historian and educator who significantly shaped the field of educational history and research, describes education as "...the deliberate, systematic, and sustained effort to transmit, provoke or acquire knowledge, values, attitudes, skills or sensibilities as well as any learning that results from the effort."[1,2] Educational approaches may differ across fields, including in training for roles in health care. Each field has unique language, techniques, and challenges that should be addressed in curriculum design.[3] The art of medical education requires curriculum that brings together multiple elements including strategic planning, addressing complex health system challenges, and understanding change management. Medical education also demands experiential learning and appropriate clinical exposure. Curriculum design should be thoughtful and use various evaluative tools to improve and assess competency.[4]

The vision of the Group for Research and Assessment of Psoriasis and Psoriatic Arthritis (GRAPPA) for educational activities emphasizes innovative techniques to enhance learning and engagement. Significant achievements thus far include global seminars, collaborative sessions with other organizations, and international education sessions affiliated with major rheumatology and dermatology meetings. GRAPPA has developed online resources, such as training videos and a mobile application for patient assessment. Additionally, patient education initiatives like the Patient's Guide and the Clinician and Patient Education Series (CAPES) use novel podcast and webinar formats to provide valuable updates on different themes pertaining to psoriatic disease for healthcare professionals and patients.[5]

In line with this vision, a workshop dedicated to exploring new and emerging paradigms in education and pedagogical approaches was organized at the GRAPPA 2024 annual meeting and trainee symposium in Seattle, Washington. The aims were to (1) equip participants with skills to set clear learning objectives when designing educational sessions, and (2) convey the pedagogical advances furthering medical education. Workshop topics included defining practical learning objectives, the role of artificial intelligence (AI) in education, techniques to increase teaching effectiveness, and examples of innovative practices that can be implemented in medical education.

Defining and designing a learning objective

The workshop opened with how to design a learning objective, a statement that uses an action verb to communicate the purpose of instruction and describes the expected performance and conditions under which it should occur.[6] Learning objectives are the cornerstone of course design, providing a structured educational framework shown to facilitate comprehension of course material and improve student performance posteducation.[6]

The benefits of learning objectives. By guiding the planning, delivery, and assessment of education, learning objectives ensure that both educators and learners have a clear understanding of expected outcomes. Clear targets for learning enhance focus, motivation, and direction. Additionally, learning objectives facilitate measurable improvements in knowledge, skills, and behaviors and help align teaching methods with desired learning outcomes.[7]

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How to design learning objectives in medical education. It is important to distinguish between goals and learning objectives.[7] A goal is a broad statement of the expected learning outcome of a course, whereas a learning objective is a specific, observable learner outcome that can be evaluated and contributes to the goal achievement. The foundation of effective learning objectives lies in their alignment with assessment, feedback, and teaching and learning activities.[7,8] Learning objective design begins with identifying gaps or unmet needs in the field and determining the desired outcomes for participants, specified by action verbs. These verbs might relate to 1 of the 3 domains of education: affective (attitude), psychomotor (skills), or cognitive (knowledge) domains. When selecting an action verb for a specific level of knowledge in a learning objective, it is essential to be clear and specific. Effective learning objectives can be designed using the Specific, Measurable, Achievable, Relevant, and Time-bound (SMART) criteria.[9]

By aligning objectives with these core elements, educators can create a cohesive and impactful learning experience. Fostering empathy development in clinicians is an example of the affective domain, teaching procedural techniques such as performing a skin biopsy to make a differential diagnosis of psoriasis represents the psychomotor domain, and delivering a lecture at a conference exemplifies the cognitive domain.

AI in medical education

Recent advancements in AI technology have the potential to revolutionize medical education. However, effectively leveraging this technology to transform learning can bring new challenges. Although AI will not replace educators, those who integrate AI into their teaching methods set new standards for excellence. The ultimate goal of AI integration is to empower educators to achieve greater impact in less time.[10] By automating routine educational tasks, AI frees educators to concentrate on crafting cutting-edge curricula.

Using AI begins simply by interacting with the technology. First, instructors will explain what they want the AI to do (action). Then, they will describe the format in which the response should be presented (style). Finally, they will set the stage by providing more context about the theme or topic being covered (key details). This structured approach ensures that AI delivers relevant results.

However, as AI operates on probabilistic models, care must be taken to avoid bias and factual errors. AI generates responses based on the data it has been trained on, predicting the next word or phrase according to the specific query. AI relies on large language models and knows only what is included in them, lacking separate validity checks, factual confirmation, and governance, all of which can result in inaccuracies and biases. Therefore, it is crucial for users to consult their institution's AI policies in education before implementation.

Effective teaching techniques

When establishing an educational program, it is essential to consider varied learning approaches. One principle useful for maximizing engagement, and therefore deeper learning in medical education, is the *Know-Feel-Do* principle. The first step is to identify the background and needs of the participants and thereby understand what they need to Know. Educational content should be engaging and vivid, allowing the audience to connect emotionally (Feel) with the material. Associating images or videos with key educational messages has been shown to improve future recall.[11] An educator can employ a variety of techniques to keep the audience focused and engaged, such as moving around the room to facilitate direct interactions. Even surprising the audience can be a powerful technique to maintain their attention. Educators should not overfocus on facts, as they are straightforward, but rather focus on helping the audience engage with the facts and make sense of them.

Incorporating question-and-answer sessions can be an effective way to reduce didactic learning and increase interactivity, encouraging critical thinking. Ultimately, the educator should consider what the expectation is for the audience to Do upon receipt of this learning, such as what actions in their clinical practice are desired. Additionally, understanding sociocultural factors that have influenced the learners, including cultural norms, beliefs, values, and social interactions, is crucial for effective and optimal learning. In the context of diverse sociocultural norms, the choice of words, nonverbal cues, and tone of the educator can positively or negatively influence the learning process of the students.

Examples of innovative education techniques in rheumatology

There are several notable examples in the field of rheumatology that illustrate innovative educational techniques:

1. The Cleveland Clinic Continued Medical Education (CME) rheumatology/immunology website[12]: This platform, which draws over 144,000 learners annually and issues 54,000 CME certificates, demonstrates the application of diverse techniques in education. The website offers a mix of in-person/live meetings, enduring materials, snippets, monographs, and lunchtime 15-minute chats, all designed to effectively engage learners.
2. Structured program development: In the early 2000s, the European Alliance of Associations for Rheumatology (EULAR) congress underwent a significant overhaul to introduce a structured program. This program featured parallel sessions with clearly defined themes including translation, clinical practice, and arising challenges. Each session had specific objectives and a defined structure, highlighting how even large congresses can benefit from organized and refined educational frameworks.
3. Creating a safe environment for bidirectional learning: Innovative techniques like masterclasses facilitate a safe, bidirectional learning experience. These sessions, recently exemplified by efforts from the Japanese Rheumatology Society, bring students and professors together in the same room to promote interaction regardless of language barriers.
4. Reducing the size of information: The Immune-Mediated Inflammatory Disease Forum[13] is an example of how complex information can be condensed into manageable,

bite-sized units. By reducing complex papers to key points on a single PowerPoint slide, this platform helps professionals absorb critical information without needing to parse through the entire original document.

These examples highlight the diversity and effectiveness of innovative techniques in enhancing educational experiences in the field of rheumatology.

Conclusion

In the evolving landscape of medical education, adopting innovative techniques is essential to meeting the diverse and dynamic needs of learners. The workshop at the GRAPPA 2024 annual meeting and trainee symposium highlighted the power of setting clear learning objectives, the potential of AI to transform education, and that deploying effective teaching methods can enhance engagement and comprehension. By incorporating structured programs, creating safe environments for bidirectional learning, and using technology to navigate information, medical educators can revolutionize the educational experience. These approaches not only address current educational challenges but also pave the way for the future of medical education, advancing clinical competence and enhancing patient care outcomes. Ultimately, these approaches provide GRAPPA members with the opportunity to be at the forefront of shaping the next generation of healthcare educators.

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ETHICS AND PATIENT CONSENT

Institutional review board approval and patient consent were not required.

PEER REVIEW

As part of the supplement series GRAPPA 2024, this report was reviewed internally and approved by the Guest Editors for integrity, accuracy, and consistency with scientific and ethical standards.

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