

For the Office-based Teacher of Family Medicine

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Feature Editor

Editor's Note: I welcome your comments about this feature, which is also published on the STFM Web site at www.stfm.org. I also encourage all predoctoral directors to make copies of this feature and distribute it to their preceptors (with the appropriate *Family Medicine* citation). **Send your submissions to jdelzell@kumc.edu.** John Delzell, Jr, MD, MSPH, University of Kansas Medical Center, Department of Family Medicine, 3901 Rainbow Blvd, MS 4010, 1059 Delp, Kansas City, KS, 66160. 913-588-1996. Submissions should be no longer than three–four double-spaced pages. References can be used but are not required. Count each table or figure as one page of text.

Using the Five Microskills With Different Learning Preferences

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In 1992, Neher et al first proposed the Five Microskills of Teaching as a structured approach for teaching clinical skills.¹ Subsequent research has shown it to be an effective teaching tool,²⁻⁵ and the Society of Teachers of Family Medicine (STFM) now includes the Microskills model as a standard component in its Faculty Development Series.⁶

As useful as the Five Microskills has proven to be, applying what we know about learning preferences may suggest ways to further enhance the efficacy of this model. Describing visual, auditory, and tactile learning preferences with their applicable teaching strategies allows us to suggest ways to adapt the Microskills model for different learners in the clinical arena.

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Characteristics of Visual, Auditory, and Tactile Learners^{7,8}

Learning is a sensory process that involves a combination of seeing, hearing, and doing. Visual learners learn best by seeing. While they can easily imagine people, places, and documents, they may need to take copious notes and can sometimes have trouble concentrating in a noisy environment.

Auditory learners learn best by hearing. They prefer listening to tapes, would rather make an oral report as opposed to a written one, and are good at following verbal directions. Processing what they read can be difficult; however, repeating aloud what they read helps to reinforce the learning.

Tactile learners learn best by doing. They prefer doing projects to reports and often use their hands and gesture when talking. They can appear disorganized and they do not learn well if they must sit still.

While considerations of learning preferences have generally been used to help students become more successful learners, teachers can also use this knowledge to maximize learning in the clinical setting. The next section identifies ways that teachers can incorporate teaching strategies to address learner preferences.

Strategies to Facilitate Learning For Visual Learners

Provide the learner a quiet workspace. Give learners the option of drawing the sequence of events via a flow chart or concept map. Medical algorithms are great examples of simple concept maps because they provide a visual representation of relationships. See www.aafp.org/afp/20000115/357.html#all04⁹ for an example depicting the management of acne. Use charts, graphs, and tables while teaching to illustrate key points. Visual representation can help to organize and summarize material. Suggest that

learners write down key points to enhance memory. Have learners use visual reinforcers such as www.medicalmnemonics.com/cgi-bin/showpic.cfm?mnemonic_id=5,¹⁰ an illustration of lumbrical action.

For Auditory Learners

Suggest that they use mnemonics to remember concepts. Have learners read guidelines and references aloud to reinforce the learning. Suggest that learners form study groups to discuss what they have learned with their peers. Consider forming a peer study group if your program has a significant number of auditory learners. Allow learners the option of audiotaping a presentation to review later. Consider using a podcast or other mp3-based resources.

For Tactile Learners

Allow the option of movement (eg, pacing, squeezing a tennis ball, etc) during the teaching encounter.

Use a whiteboard or chalkboard. Use colored markers (or have the learners do this) to emphasize relationships. Suggest that learners read “whole to part.” For example, skim first, look at summaries/abstracts/questions, and then go back. Suggest that learners locate guidelines/references relevant to the topic and report back on their findings.

Application to the Microskills Model

So far, we have identified the general characteristics of learning preferences and how they can be incorporated into general teaching. Using these strategies may increase the probability that effective learning will actually occur. The next step is to take the concepts of learning preferences and apply them to the Five Microskills Model of clinical teaching.

While the prospect of structuring a clinical encounter that accommo-

dates different learning preferences at first seems daunting, it is really not. As Table 1 indicates, similar strategies can actually facilitate different learner types. For example, writing on a whiteboard might help the visual learner “see” the process or concept while also giving the tactile learner the opportunity to be actively engaged, thereby theoretically enhancing learning for both of these types of learners. Likewise, the tactile learners might benefit from looking up a citation while the auditory learner might be most helped by reading it aloud, so working in teams can be encouraged. Additionally, as Vaughn and Baker¹¹ note, it is important to help learners move outside their own learning comfort zones. While the visual learner might prefer a quiet setting, this is usually not possible given the reality of a fast-paced, crowded preceptor room. For their own survival, all learners must “learn how to learn” in settings that

Table 1

Application of Learning Preferences to the Five Microskills Model

<i>Microskills Step</i>	<i>Strategy</i>	<i>Learner Type</i>
1. Get a commitment (“What do you think it is?”)	Suggest learners write ideas down before the precepting encounter	Visual
	Allow time to formulate the response	Auditory
	Allow options for physical movement	Tactile
2. Probe for supporting evidence (“Why do you think this is the case?”)	Suggest algorithms to provide mapping options	Visual
	Have preceptor/resident/student use a whiteboard	Visual/tactile
	Feed responses back to the learner using reflective listening	Auditory
3. Teach general rules (“When this happens, do x.”)	Use charts/graphs/tables Use mnemonics	Visual Visual or auditory (depends on type)
	Have learners read references/guidelines aloud	Auditory
	Suggest learners read “whole to part”	Tactile
	Use color-coded markers on a whiteboard	Tactile
4. Reinforce what was right (“Specifically, you did x well”)	Have learners write down key points, preferably in a resource book or PDA	Visual/tactile
	Suggest learners give a mini-lecture or conference at a later date	Auditory
	Break down the process into component parts	Tactile
5. Correct mistakes (“Next time this happens, do x”)	Elicit questions/ideas	Auditory
	Have learners read the references/guideline aloud	Auditory
	Suggest learners give a mini-lecture/conference at a later date	Auditory
	“Map” it using a chart	Visual
	Have learners find the reference, guideline, or citation	Tactile

are less than optimal for their own preferred style. By incorporating a variety of teaching strategies, the preceptor can encourage the learner to experiment with different learning strategies, which may help him or her to become a more flexible and adaptive learner. Using a variety of teaching strategies allow the preceptor to provide valuable pedagogical guidance in addition to teaching clinical skills.

As an aside, it is important for clinical faculty to remember that, just as there are learning preferences, there are also teaching preferences. One's preferred teaching style often derives primarily from individual inclination coupled with past experiences as a learner. Incorporating different strategies into teaching, while initially uncomfortable and awkward, may ultimately make it easier for both learners and teachers to move beyond their preferred styles.

Conclusions

An awareness of learning preference suggests practical ways to enhance clinical teaching. By incorporating simple strategies, clinical instructors may improve the efficacy of clinical teaching encounters. Future research on the use of these strategies in precepting is needed to identify ways that learning preferences may further refine and improve clinical teaching and learning.

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