

Spring 3-2012

An update on practice management instruction in U.S. Dental Schools

David G. Dunning

University of Nebraska Medical Center, ddunning@unmc.edu

Wenyu Qu

Vanderbilt University

Brian M. Lange

University of Nebraska Medical Center, blange@unmc.edu

Follow this and additional works at: http://digitalcommons.unmc.edu/cod_articles



Part of the [Dentistry Commons](#)

Recommended Citation

Dunning, David G.; Qu, Wenyu; and Lange, Brian M., "An update on practice management instruction in U.S. Dental Schools" (2012).

Journal Articles: College of Dentistry. Paper 11.

http://digitalcommons.unmc.edu/cod_articles/11

This Article is brought to you for free and open access by the College of Dentistry at DigitalCommons@UNMC. It has been accepted for inclusion in Journal Articles: College of Dentistry by an authorized administrator of DigitalCommons@UNMC. For more information, please contact digitalcommons@unmc.edu.

An Update on Practice Management Instruction in U.S. Dental Schools

^a, David G. Dunning ^a, Wenyu Qu ^b

^a College of Dentistry, University of Nebraska Medical Center, Lincoln, NE, USA.

^b Molecular and Cellular Biology Major, Vanderbilt University, Nashville, TN, USA.

.....
Correspondence to:

Brian M. Lange

College of Dentistry, University of Nebraska Medical Center, 40th and Holdrege Sts., Lincoln, NE 68583-0740, USA.

Tel: +1-402-472-1274

blange@unmc.edu

.....
Received: February 15, 2011

Accepted: March 20, 2012

Published: March 24, 2012

Abstract

Over the last twenty-seven years, the evaluation of practice management in dental schools has been documented by three studies. In twenty-seven years the teaching of practice management has been influenced by changes in the definition of practice management, resources available to dental schools, technology, changes in accreditation standards and, more recently, the influence of corporations marketing to dental students.

In an effort to determine what resources dental schools are utilizing to teach practice management, fifty-seven schools were contacted, and fifty faculty members with teaching responsibilities were identified. An on-line email survey was administered and results reported at the 2011 meeting of the American Dental Education Association Section on Practice Management. At the section meeting breakout groups discussed two questions. First, identify innovative tools, methods and ideas in the area of practice management. Second, what changes may be necessary to meet recently updated accreditation standards 2-17 through 2-19. The recommendations of the breakout groups are presented in detail.

Key words: Practice management; Dental education; Service learning; Dental curriculum.

Copyright: © 2012 Lange BM, et al. This is an open-access article distributed under the terms of the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited.



doi:10.5436/j.dehy.2012.3.00056



Introduction

In 1980 the Section on Practice Administration of the American Association of Dental Schools first published curricular guidelines for practice management [1]. In 1984 the first thorough review of practice management curricula was published [2]. This was followed by revised curricular guidelines for practice management [3]. Manski et al. [4] then conducted a survey study focusing on the seven major areas identified in the 1986 curriculum guidelines. Manski et al. indicated that little had changed since the original 1984 findings, suggesting that practice administration curricula were well-developed and stable in an era of decreasing availability in curricular time. Lange et al. [5] revisited the question of practice management curricula. They found shifts in both the content of the material and the methods of teaching.

Nearly twelve years have passed since data collection was conducted regarding the practice management curricula in U.S. dental colleges [5]. Many changes have taken place in dental education since that time. Dental colleges continue to struggle with resource issues and economic challenges, to the point of "crisis" if current financial trends continue [6]. Since there is no emphasis on practice management in

the National Boards, dental deans may direct scarce resources to higher profile areas of instruction. Concomitantly, there is a growing acknowledgement of the importance of practice management instruction. The competencies for the new dentist approved by the American Dental Education Association in 2008 [7] include seven items under the "practice management" and "informatics" categories. These seven comprise 19% of 37 approved competencies. Graduating senior dental students continue to ask for more instruction in this area.

Corporations have aggressively marketed their practice management services and instructional offerings to schools or to dental students. These corporations have inculcated their influence in many dental schools, ranging from lunch and learn sessions to outsourcing of the majority of practice management instruction. The obvious problems of quality, bias, apparent endorsement and salesmanship mix together in a questionable concoction of corporate influence in the dental curriculum. This influence has grown so great that the American Dental Education Association Section on Practice Management presented program on this problem in standing-room only session in Orlando at the 2006 annual session [8]. The influence

these variables have had in the past decade (and continue to have) on practice management instruction remains unclear, particularly in light of the newly approved competencies and anecdotal impressions about increased corporation involvement in this instruction. Dental colleges need to understand how well and to what extent competencies are being taught. The purpose of this study was to answer basic research questions about the basic instructional parameters of practice management instruction in U.S. dental colleges--faculty allocation to the subject matter, other allocated monetary resources, types of instructional methods, number of courses, number of credit hours and the role of corporations in practice management instruction.

Methods

Between June of 2010 and January of 2011, the administrator overseeing curriculum in all 57 dental colleges were phoned to identify the key faculty person charged with teaching/coordinating the practice management curriculum. New dental schools lacking a full contingent of students/faculty were purposely excluded from the sample. Contact information was obtained using the American Dental Education Association's Institutional Directory [9]. These phone calls resulted in

contact information for approximately 50 faculty members from the 57 dental colleges. In January and February of 2011, email surveys (see questions and results below) were administered to all 50 of these faculty members. At least two email invitations to participate were sent. As necessary, follow-up calls were made to administer the survey over the phone, resulting in 33 useable surveys. This represented 58% (33 of 57) of the dental colleges in the United States.

Results

The following survey in quotation marks was developed to obtain data. Results are listed next to each corresponding question. In order to clarify, we define practice management as the body of knowledge and skills that prepare dental students to understand and utilize perspectives from business management, finance, economics, marketing, law, technology and behavioral science in order to manage a dental practice.

1. How many faculty full-time equivalents (FTEs) does your dental school devote specifically and exclusively to practice management instruction? You may answer in a fraction such as .3 as needed. *Mean = .55, Range .1 - 2.5*
2. Are monetary resources available for practice management program develop-

ment (for guest speakers, purchase of software, etc.)?

Yes = 10 (30%) No = 23 (70%)

If Yes, how much funding per year?

Mean = \$13,800, Range \$3,000-\$50,000

3. Please check each of the methods of instruction you use to teach practice management competencies.

- Classroom exams = 23 (70%)
- Written assignments/cases/papers/ projects = 29 (88%)
- Take-home exams = 3 (9%)
- Dental management simulation = 17 (52%)
- On-line learning modules = 7 (21%)

4. Number of courses in practice management? Mean = 2.3, Range = 1 - 8

Number of total course credit hours?
Mean = 5.5

5. Check each of the following through which students demonstrate competency

- Individually = 19 (58%)
- In small groups = 3 (9%)
- Both individually and in small groups = 15 (45%)

6. Is your dental school

Private = 17 (52%), Private with some state funding = 2 (6%), Public = 14 (42%)

7. Is practice management also taught in

Yes in Clinic = 18 (55%), No in Clinic = 11 (33%), Not sure in Clinic = 4 (12%)
Yes in Service Learning = 14 (42%), No in

Service Learning = 11 (33%),

Not Sure in Service Learning = 8 (24%)

8. What is your assessment of how your current achievement in practice management in the area of accreditation standards?

- Do not meet accreditation standards in practice management = 0 (0%)
- Minimally meet accreditation standards in practice management = 5 (15%)
- Clearly meet accreditation standards in practice management = 11 (33%)
- Exceed accreditation standards in practice management = 17 (52%)

9. What percentage of your practice management instruction is taught by corporations/brokers/practice management consultants? 27%

10. To what extent do dental school faculty or other university faculty directly oversee/monitor any instruction done by corporations/brokers/practice management consultants?

None = 2 (6%), Some = 2 (6%), Most = 4 (12%), All = 23 (70%)

Discussion

Identifying faculty who taught practice management in U.S. dental schools became much more problematic than anticipated. A few schools were unable to identify faculty, likely indicating that little if any practice management was being

taught. On average, 1.7 emails/phone calls were made in order to successfully obtain responses. 3.1 contacts were made on average for those who did not respond. The turnover rate was high at 10% for the faculty originally identified months earlier as tasked with teaching practice management. We cannot account for the high level of turnover, other than perhaps the general trend of "graying" of dental faculty nation-wide and the related likelihood of retirement.

Several data points are worthy of mention. The full-time-equivalency average of .55 faculty was nearly exactly the same as the .54 reported in 1999. The reported mean contact (instructional) hours of instruction has dropped from 88 in 1984 to 70 in 1998 to 59 in 2011. Some of the lower contact hours can be accounted for because ethics instruction was excluded from the definition of practice management in 2011 and included in 1999. Ethics instruction was excluded in the 1984 study on practice management. There is some inconsistency in the current study because fewer contact hours were reported and yet respondents identified increased course credit hours of instruction (5.5) in 2011 compared to an equivalent of 4.7 in 1999.

Monetary resources available to augment the practice management program

have dropped from 36% of schools in 1999 to 15% in 2011, though those still receiving resources in 2011 had increased support (\$13,800 vs. \$5,477 in 1999). Many dental schools are under incredible financial stress, and this fact likely explains the finding of a lower percentage of programs receiving additional financial support.

The most popular method of instruction to assess competencies is written assignments/cases/papers/projects at 80%, followed by exams (70%) and dental management simulation (52%). The use of management simulations appears to be on the rise because the reported percentages in 1984 and 1999 were at only 6 and 7% respectively. Still, we suspect that the current 52% reported percentage for management simulation use also includes "group practice" type arrangements in clinics which are mentioned later. Only about 8-10 dental schools currently utilize the most popular management simulation program, also discussed later.

While most faculty members utilize individual assessment at 58%, many also utilize both individual and group assessment to measure competency (45%). The use of cooperative learning strategies in small groups appears to have significantly increased given that only 13 and 17% of curriculum time was devoted to that instructional strategy in 1984 and 1999.

Given that 52% of the respondents taught in private dental colleges and that the majority of dental schools are public, the sample is biased from private school input. Most respondents reported that practice management is also taught in the clinic (55%), though the rest were either not sure or indicated "No." This may be a missed opportunity to link what is taught in the classroom to "wet-handed" clinical dentistry. Fifty-seven percent indicated that practice management is not taught in service learning or were not sure. This again may point to a missed opportunity to bridge classroom concepts to clinical experiences in service learning.

Amazingly, 52% of respondents said that their practice management program exceeds accreditation standards in practice management. A similar question was not asked in previous studies. We surmise that those who participated in the study have developed the strongest programs in practice management because of the high percentage rating their programs as exceeding accreditation standards. About 27% of practice management instruction is provided nation-wide by corporations/consultants, with most or all of this instruction thankfully being supervised by faculty (82%). This question was not asked in previous studies. While corporations have a marked presence in the cur-

riculum, most instruction is still being provided by faculty. When corporations do teach practice management, the trend is to have faculty oversight of the instruction which should tend to mitigate bias in the classroom. In point of fact, students probably benefit to being exposed to such corporate influence since, as practitioners, they will be bombarded by corporate sales people. If the instruction is provided in a learning environment supervised by knowledgeable faculty, students can learn to ask corporate representatives appropriate questions and, as the old proverb has it, to separate the wheat from the chaff.

There continues to be uncertainty and ambiguity regarding the definition of "practice management." Some people view practice management in its broadest sense, encompassing professionalism, ethics and risk management. Others adopt a more restrictive definition as stated earlier in the survey. Even after hearing the stricter definition of practice management, several interviewees still included instruction in the broader definition (such as professionalism and ethics instruction) when reporting about practice management curriculum in their dental schools. No doubt this resulted in some increase in certain data points such as the number of courses and hours of instruction. After reviewing the key findings above at the 2011 Practice

Management Section Program entitled, "How Much of a Practice Management Curriculum is Needed?" five small groups discussed two important questions related to practice management instruction. Below is a summary from the break-out groups with some additional commentary. Question #1: Identify innovative teaching tools, methods and ideas in the area of practice management.

1. Simulate a dental practice experience in a pediatric/dental auxiliary rotation, including estimating overhead, production, and collections. These learning experiences help students acquire a foundation for understanding the critical numbers in dental practice.

2. Utilize the University of Texas Health Sciences Center at San Antonio Dental School on-line/classroom combination curriculum. It focuses on personal finance in the first two years and practice management in the last two years of dental school. For more information, contact Dr. Scott Stafford, Practice Dynamics Division, Department of General Dentistry [10].

3. Faculty may consider use of Dr. David Willis' dental management simulation [11-13]. The simulation options include a basic, simpler version in which individual students learn basic concepts in practice management. A more advanced

"Strategic Challenge" version is also available in which students manage practices in teams, generate a strategic plan, a practice philosophy and make over 20 management decisions over the course of 12 or more simulated business quarters. Students track progress by analyzing detail quarterly results, including profit and loss statements. Financial analysis ratios can also be computed by students using on-line spread sheets to track practice performance against recommended criteria or ranges. Students complete a strategic plan assessment as a capstone learning experience.

4. Assign business plan projects to students in teams to focus on small, rural communities. Students must complete a number of specific steps including: land purchase, office design and associated costs, loan terms and conditions, operating costs and rationales for these steps.

5. Use cases in a variety of subject/skill areas such as human resources, leadership, practice purchase.

6. Faculty members who teach practice management may join the Community of Interest of the Section on Practice Management. This on-line community includes over 50 instructional materials such as cases, handouts and power point presentations. Interested faculty may contact Dr. Dave Dunning at the University of

Nebraska (ddunning@unmc.edu) to join this growing community.

6. While admittedly not innovative, using quizzes and exams consisting of multiple choices, true-false and fill-in-the blank question is a relatively efficient method of measuring individual knowledge and competency. Dental schools with large class sizes might especially find this approach helpful.

7. Have students evaluate associateship contracts and/or purchase agreements from a business standpoint with the understanding that outside experts should be consulted (attorneys, lenders, accountants). A sample assignment for associateship is available in the aforementioned Community of Interest.

8. Have students visit dental practices /clinics and analyze existing systems and other variables (collection policy/financial policy, appointing scheduling, recall systems, staffing, clinical design, leadership, teamwork, etc.). A sample of such an assignment used for extramural programs is also available in the Community of interest.

9. A dental hygiene program which requires students to build systems such as a perio recall/recare system and to track clinical efficiency/productivity. These learning experiences help students acquire financial literacy.

10. Recruit and mentor outside experts as guest speakers/teachers in order to address topical areas for which faculty may not have the necessary knowledge/expertise. Examples might include legal issues in practice taught by attorneys with practice management experience and personal finance investing taught by certified individuals with positive reputations in working with dentists.

Question #2, What changes may be necessary to meet recently updated accreditation standards 2-17 and 2-19 in practice management? These new standards read as follows [14]:

- 2-17 Graduates must be competent in applying legal and regulatory concepts related to the provision and/or support of oral health care services.
- 2-18 Graduates must be competent in applying the basic principles and philosophies of practice management, models of oral health care delivery, and how to function successfully as the leader of the oral health care team.
- 2-19 Graduates must be competent in communicating and collaborating with other members of the health care team to facilitate the provision of health care.

Intent

Students should understand the roles of members of the health care team and have

educational experiences, particularly clinical experiences that involve working with other healthcare professional students and practitioners. Students should have educational experiences in which they coordinate patient care within the health care system relevant to dentistry."

1. The new standard, 2-19, may require some dental colleges to provide additional learning experiences/assessments.

2. At a minimum, dental colleges will have to document and measure experiences in the healthcare delivery team, perhaps in a competency framework—for example, tracking the number of successful medical consultations for patients with other healthcare providers and performing actual or simulated "hygiene checks".

Question #3--Additional Comments

1. There appears to be continued growth in "corporate dental practice." Examples include Heartland Dental and Pacific Dental Services.

2. There also appears to be an increased interest in graduates to pursue long-term careers as non-owners/associates or as partial-owners of dental practices particularly in light of the growing corporate dental practice model.

3. In view of points 1 and 2 immediately above, dental colleges may need to add or shift instructional time to concen-

trate on organizational behavior in addition to or rather than entrepreneurship/ownership. For example, more instruction in the areas of teamwork, communication networks and supervisor-employee relationships may become more important over time.

4. There is some ongoing ambiguity regarding what disciplines, topics and skill areas are encompassed by "practice management." For example, should ethics and professionalism be a part of practice management?

5. Using resource materials as a foundation for or to augment classroom instruction may lend some legitimacy to practice management courses. Examples include: *Dental Practice Transition: A Practical Guide to Management* edited by Drs. Dunning and Lange [15]; and the American Dental Association's series of books on specific topics (examples include: *Associateships, Valuing a Practice, Practice Options and Transitions* [16-19]. The ADA donated these and other similar books to every dental college in the U.S. about three years ago. These kinds of resources may be assigned as readings and exams may be created to test knowledge of the material.

6. Teachers of practice management share a common and seemingly everlasting lament—namely, as a group pre-

doctoral students do not seem very interested in learning about practice management while in school, and yet later express considerable concern upon and after graduation that not enough instruction was provided. One reason for this trend is that the demands of graduation are so heavily skewed towards clinical (technical) skills that it may be difficult for students to grasp the importance of practice management instruction, let alone devote the time and effort to necessary to learn practice management more deeply.

Students sometimes also receive inconsistent or uninformed advice from informal sources such as relatives, spouses or even other faculty, especially about associateships and practice valuation/purchase. Students may lend more credibility to such sources than appropriate, not knowing enough to realize that this advice may be faulty or incomplete. This process can thus further exacerbate the perceived lack of importance of formal practice management instruction.

Importantly, according to the American Dental Education Association's Official Guide to Dental Schools [20], seven dental schools offer joint DDS/DMD and MBA programs. Further, recent attention has been devoted by Dunning et al. [21] to adding business courses and behavioral science courses as pre-requisites for ad-

mission to dental school in order to enhance practice management instruction.

Over the past three decades many dental schools have also instituted "group practices" in which, typically, general dentists coordinate/supervise students in the last year or two of dental school in an effort to teach principles of practice management in the clinical context. The University of Missouri-Kansas City advertised in May of 2011 [22] for a position of an "Endowed Chair in Practice Management" to "develop a curriculum that will focus on exposing students to the realities of running a dental practice, such as how to finance a practice, manage debit, handle personnel matters, and set realistic financial goals" and "to manage the day-to-day operations of the dental school's proposed Innovation Clinic, which will operate just like a small dental practice." These innovative curriculum endeavors tend to require considerable faculty teaching resources, and so consideration needs to be given to providing a balanced teaching load for faculty within the context of requirements for promotion and tenure in specific dental schools.

Limitations of this research update on practice management should be acknowledged. Perhaps most importantly, we were able to interview faculty representatives from about half of the dental schools,

in part because several dental schools did not at the time questioned (January - February of 2011) have faculty assigned to teach practice management and/or would not provide this information. Consequently, the findings from the interviews may be skewed, most likely in the direction of less rather than more practice management instruction being offered. It is our estimation and opinion based in part on the data gathered in this study and on anecdotal discussions with colleagues from around the nation that approximately half of the U.S. dental schools currently offer viable courses/curricula in practice management to include some level of individual/group assessment such as exams and/or other methods of evaluation.

Conclusion

As one might expect practice management curriculum is ever evolving. Practice management curriculum is under pressure, pressure from changes imposed by the dental schools' accrediting body, as it should be in order to maintain standards of excellence for students making the transition from academia to the practice of dentistry. Practice management curriculum is also under pressure from dental schools stretched for resources and faculty time. Practice management is also under

pressure from corporations wanting to sell their services to new graduates. In some cases corporations offer to provide practice management curriculum time. If a dental school lacks a mission/definition statement for its practice management curriculum, it will find the above pressures formidable. With a mission statement of practice management schools can develop goals that define how they will prepare students to enter the practice of dentistry and meet accreditation standards.

As noted above some schools face financial and faculty issues. However, advances in technology as well as more emphasis being placed on service learning have created two opportunities to expand. Practice management curriculum, as described previously in this paper, can be augmented by on-line practice management simulations as a vital tool in teaching practice management. With the increased push for more service learning for dental students, rotation experiences can be structured to include any number of practice management scenarios that students could analyze while on rotation. Students rotating to off-site clinics, whether public or private, can review business principles and systems and any number of practice management topics that will apply to them upon graduation.

Service learning may also afford dental schools a revenue stream to help replace lost clinical income while students are on rotation. Indeed, a well planned rotation need decrease clinical revenue and could instead serve as source to generate new sources of revenue.

Upon graduation, many students report they did not get enough practice management while in school. A rigorous layering of practice management learning experiences during rotations could help soften student criticism about practice management. Students on rotation tend to want real world dental experience and the more dentistry the better. However, rigorous assignments requiring students to thoroughly study and analyze business principles and systems will help students develop a deeper understanding of practice management during service learning experiences.

List of abbreviations

There is no abbreviation.

Conflicts of interests

The lead and second author co-edited a book recommended as a resource to teach practice management. The second author also has editorial involvement with *Dental Hypotheses*.

Acknowledgments

The authors appreciate the helpful comments from the reviewer of this manuscript. The authors are also indebted to the faculty who participated in this study and to the participants in the small group break-out sessions at the 2011 American Dental Education Annual Session program on practice management.

Authors' contributions

- Main idea: by all authors.
- Literature search: by all authors.
- Data interpretation: by BL and DD.
- Manuscript preparation: by all authors.
- Data collection: by all authors.
- Funds Collection: a subscription to Qualtrics web-based survey--by DD and BL through the use of a professional consultation fund created by placing students in associateship positions in the 1990s.

References

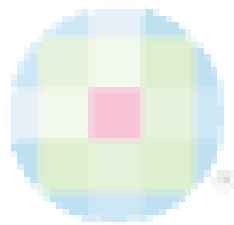
1. Shard HA. American Association of Dental Schools, curricular guidelines for practice management. *Dent Educ* 1980;844:550-3.
2. Abbott LJ, Forman G, Bauer LB. Practice management instruction in north american dental schools. *Dent Educ* 1983-1984;448:674-8.
3. American Association of Dental Schools. Curricular guidelines for practice administration. *Dent Educ* 1986;50:236-40.

4. Manski RJ, DiAngelis AJ, Williams JN, Cunningham, MA. Status of practice administration curricula. *Dent Educ* 1992;56:346-8.
5. Lange BM, Dunning DG, Stewart DCL, Hardage JL. The current state of practice administration curriculum in U.S. dental schools. *Dent Educ* 1999;63:834-8.
6. Bailit HL, Beazoglou TJ, Formicola AJ, Tedesco L, Brown LJ, Weaver RG. U.S. state-supported dental Schools: financial projections and implications. *Dent Educ* 2008;72(2_suppl):98-109.
7. Competencies for the new general dentist. *Dent Educ* 2008;72:823-26.
8. Corporate America Goes to Dental College, Section on Practice Management Program, American Dental Education Annual Session, Orlando, FL, 2006.
9. American Dental Education Association. Directory of Institutional Members and Association Officers: 2009 – 2010. American Dental Education Association: Washington, DC, 2009:1-156.
10. Dr. Stafford may be contacted via email at: StaffordS@uthscsa.edu. Division of Practice Dynamics Placement Service [Accessed March 12, 2012]. Available from: http://generaldentistry.uthscsa.edu/Placement/Placement_OppType.aspx
11. Dental Practice Management Simulations [Accessed March 12, 2012]. Available from: <http://www.dentalsimulations.com/>
12. Willis DO. The Dental Practice: A Management Simulation. Privately published: Louisville, KY, 2011:1-1 – 10-1.
13. Willis DO. Using competencies to improve dental practice management education. *Dent Educ* 2009;73:1144-52.
14. Accreditation Standards for Dental Education Programs, Commission on Dental Accreditation, American Dental Association, 2010;25 [Accessed March 12, 2012]. Available from: <http://www.ada.org/115.aspx>
15. Dunning DG, Lange BM. Dental Practice Transition: A Practical Guide to Management. Ames, Iowa: Wiley-Blackwell, 2008:v-450.
16. American Dental Association. Associateships: A Guide for Owners and Prospective Associates, Edition revised by Berning R and Domer LR. Chicago, IL: American Dental Association, 2005:i-116.
17. American Dental Association. Valuing a Practice: A Guide for Dentists. Edition revised by Dr. Larry Dormer and Mr. Randall Berning. Chicago, IL: American Dental Association, 2006:i-131.
18. American Dental Association. Practice Options for the New Dentist. Chicago, IL: American Dental Association, 1999:i-208.
19. American Dental Association. Transitions: Navigating Sales, Associateships & Partnerships in Your Dental Practice, Edition by Hill R. Chicago, IL: American Dental Association, 2008:i-116.
20. American Dental Education Association. Official Guide to Dental Schools 2010. American Dental Education Association. Washington, DC, 2010: Chapter 3:43-44.
21. Dunning DG, Lange BM, Madden RD, Tacha K. Prerequisites in behavioral science

and business: opportunities for dental education. *Dent Educ* 2011;75:77-81.

22. UMKC establishes endowed chair in practice management. *American Dental Education Association, Bulletin of Dental Education*: 2011;44(5) [Accessed March 12, 2012]. Available from:

http://info.adea.org/BDE/Publications/Volume_44/Issue_5/Around_the_Dental_Education_Community/



Citation : Lang BM, Dunning DG, Qu W. An update on practice management instruction in U.S. dental schools. *Dent Hypotheses* 2012; 3: 39-52. doi: 10.5436 /j.dehy.2012.3.00056.

This journal utilizes the LOCKSS system to create a distributed archiving system among participating libraries and permits those libraries to create permanent archives of the journal for purposes of preservation and restoration.