

Study Group 1
OMDE 606
November 25, 2011
Assignment 3

Assignment 3

Cost Analysis for Dosage Calculation for Nurses

Study Group 1

Robin M. Belanger

Michael Sean Donoghue

Teresa Michelle Marcheskie

Jane Buza Menker

OMDE 606

University of Maryland University College

November 25, 2011

Study Group 1
OMDE 606
November 25, 2011
Assignment 3

Participation of Group Members

For this project Robin, Michael, Teresa, and Jane collaborated and met multiple times via conference call and one time in the chat room within the class study group. We discussed the scenario at length and determined the correct type and amount of ingredients. We each volunteered to work on different parts of the project. Jane, Robin, and Teresa were responsible for the written document. Michael developed the spreadsheet based on the scenario we created and Jane put together the voice over PowerPoint presentation. Each member contributed content and editing to the final version of all the materials. The result was a project we all worked together on as a team.

Scenario

Introduction

To help address the growth of opportunities in the field of nursing and assist the needs of students who are unable to attend courses in a typical classroom setting, a dual-mode two-year community college plans to offer an online freshman course called Dosage Calculations for Nurses. This asynchronous course will be a three-credit class, taught over a 15-week semester, requiring 150 hours of student study time. Dosage calculation is an essential nursing component for safe patient medication administration. Although this is a beginner level course, nursing students will need to apply the skills learned in the course throughout the curriculum and as practicing Registered Nurses (RNs). Since the college admits nursing students bi-annually, the college will offer the course twice a year, with a cap of 60 students permitted in each class session.

Study Group 1
OMDE 606
November 25, 2011
Assignment 3

In developing the proposal and cost analysis for this course, the study group made decisions regarding the use of technology, design, and faculty. The group decided not to use professionally produced media (DVDs, Podcasts, etc.) since students could meet the learning outcomes without the increased cost of expensive technology. The group carefully considered the design of the course because dosage calculation is a skill set that nurses will need to use throughout their career. The group felt it important to give the students an opportunity to practice their calculations with other students and wanted to incorporate a few group projects into the design of the course to help build these collaborative skills. According to Moore & Kearsley (2005), “students generally find interaction with their peers to be stimulating and motivating” (p.141). In addition, a tenured faculty member will teach the course for the first two years, and after the course update, an adjunct member will teach the course, which helps decrease costs. Bettinger & Long (2010) state that “adjuncts can be up to 80% cheaper than full-time faculty” and they also point out the “cost savings can be greater if the adjunct professors are not receiving any benefits” (p.598).

Course material

The course is a print (web-based) interactive product. A tenured nursing faculty member will develop the course materials, with the assistance of an instructional designer. It will consist of 11 modules that cover both basic and advanced calculations using the formula calculation method. Within each module, students will learn content, answer practice questions, complete case studies, use hypertext links, flash cards, hot spots, and interactive syringes and drug labels. The college will host the course on its current Learning Management System (LMS). Currently, the LMS is included in the operating budget of the college and available for both traditional and online courses. Neither online nor traditional students have to pay a fee for LMS use.

Study Group 1
OMDE 606
November 25, 2011
Assignment 3

(Conversation with Julie Shattuck, Interim Director of Distance Learning, Frederick Community College, 11/18/11). The development process will take 18 months and require 1/5 of a full-time tenured faculty member's time and 1/8 of a full-time instructional designer's time.

The course material development includes the following items:

1. Print material in a digital format for learning content and case studies for 11 modules consisting of four pages per module, totaling 44 pages per study guide. Authoring, editing, and design updates for four modules after year two of the course.
2. Hypertext links - computer based resources - in each module.
3. Interactive computer marked assignment, CMA, used for the two examinations.
4. Computer assisted learning includes the interactive syringes, flash cards, hot spots, realistic drug labels, the practice questions. These are included here since they are only for self-assessment and not evaluative. There will be three types per module.
5. Material for group projects during weeks 9 and 11. This will consist of two case studies, which students can use for practice.

We chose to use a combination of type-i and type-c learner content activity. Type-i variants were the primary choice because of the specific learner-content interactivity in the course. Type-c variants facilitate group projects since Moore & Kearsley describe them as "learner-learner" types (Moore & Kearsley, 1996, pp. 129-32).

The college will offer the course for eight years with the expectations of attracting 120 students per year. The college will update it in year two and present from year three on, in the updated form.

Student support

Study Group 1
OMDE 606
November 25, 2011
Assignment 3

Tenured nursing faculty will support students the first two years and after updates are completed, an adjunct, part-time faculty member will provide the support. Faculty will assess the 11 hand marked case studies, give feedback to students regarding results, and issues for the two examinations that are computer marked. In addition, students can reach faculty via email. Further support is available through scheduled tutoring, for a maximum of 16 hours; this consists of tenured nursing faculty for the first two years of the course with an adjunct, part-time faculty member providing tutoring from year three on.

Assessment

The faculty will assess the student based on the 11 case studies and 2 examinations.

Analysis

The group decided on web based print medium and copyright by using the benchmark costs for print medium found in conference topic area four – Print and Correspondence (Huelsmann, 2011). We took the total cost, divided by 48 used in the example, and multiplied it by the 44 pages we are using in our project. The group decided to use adjunct faculty as tutors because they have more experience and are more professional than a regular tutor. This is important since drug dosage is a serious subject, where nurses have patients' lives in their hands. The group used a mid-range salary for author of the web-based printed material and made it a straight fee since it is a onetime cost. Tuition expenses and marking of assignment expenses vary from years one through two and three through eight because the salary for the faculty changes during that time. Student income incorporates technological and instructional materials, capital, and student activity fees. The group incorporated the Blackboard fees, which are no different for an online class as opposed to a face-to-face class, into the annual presentation costs.

Study Group 1
OMDE 606
November 25, 2011
Assignment 3

The group The group annualized both the Fixed Costs of Development (FD) over eight years of the course and the Fixed Costs of Maintenance (FM) over six years using the market value of 3.5% for the interest rate on tab B, in the excel spreadsheet.

Fixed and Variable Costs

All items under A and B are fixed costs and all costs under C are variable costs, lines 21 through 24 are semi-variable.

Aggregate Fixed Cost of Development (FD) and Aggregate Fixed Costs of Maintenance

FD = \$116,327 = total fixed costs of development

FM = \$38,000 = total costs of maintenance

F = FD + FM = \$38,000 + \$116,327 = \$154,327

Variable Costs per Student (V)

V = \$497

Depreciation rate based on the lifetime of the presentation of the project

Depreciation rate FD, 8 years = \$14,541

Depreciation rate FM, 6 years = \$6,333

Annualization of Fixed Costs of Development and the Fixed Costs of Maintenance

Annualized rate FD, 8 years at 3.5% = \$16,923

Annualized rate FM, 6 years at 3.5% = \$7,131

Study Group 1
OMDE 606
November 25, 2011
Assignment 3

Total costs (TC) using annualized figure of fixed costs and N = 960 $TC = F + VxN$

$$TC(N) = \$154,327 + \$497 * N$$

For N = 960

$$TC(960) = \$154,327 + \$497 * 960 = \$631,418$$

Average Costs

$AC = F/N + V$ – using the annualized figure for costs and N = 960

$$AC(N) = (\$154,327/N) + \$497$$

For N = 960

$$AC(960) = (\$154,327/960) + \$497 = \$658$$

Break-even Point

Calculated using $TC = F + VxN$ and $I = SFxN$. Income = Student Fee x Number of Students the

Break Even Point is $N = F / (SF - V)$

$$\$178,172 / (\$744 - \$497) = 720.$$

Conclusion

After careful deliberation, the group decided to design a dosage calculation course for nurses. In order to do this the best way possible, the group spent the majority of its time discussing costing after deciding on faculty and materials. With the complete facilitation of the class online, all ingredients will be web-based. In order to lower costs, the group decided to use adjunct faculty for years three through eight and use the interactive media that the college already had in place. After the group put all costs, fees, and income into place, the finished

Study Group 1

OMDE 606

November 25, 2011

Assignment 3

product had a breakeven point of 720 at the end of year six. The group's collaboration on this project allowed all members to understand, in-depth, the vast amount of information, planning, and modifying needed to create, design, and cost a course for students.

Study Group 1
OMDE 606
November 25, 2011
Assignment 3

References

- Bettinger, E. P., & Long, B. (2010). Does cheaper mean better? Impact of using adjunct instructors on student outcomes. *Review Of Economics & Statistics*, 92(3), 598-613.
- Huelsmann, T. 2011, OMDE 606, Costs & Economics of Distance Education & E-Learning, Module 4 – Costing educational technologies. Retrieved November, 2011.
- Lester, J. (2011). Use of adjunct faculty in delivery of distance education in ALA-Accredited LIS Master's Programs in the U.S. and Canada. *Journal Of Education For Library & Information Science*, 52(3), 212-237.
- Moore, M., and Kearsley, G. (1996). *Distance education: a systems view*. Belmont, CA: Wadsworth Publishing Company.
- Moore, M. G., & Kearsley, G. (2005). *Distance education: a systems view of online learning*. Belmont, CA: Wadsworth. (Second Edition).
- Shattuck, J. 2011. *Conversation*.