P1.36 USING SINGLE-STATION STATISTICAL WEATHER PREDICTION SOFTWARE TO INSTRUCT ON FORECASTING METHODS

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1. INTRODUCTION

During the Spring 2003 semester, the Synoptic Meteorology II (SM2) course at the University of Missouri-Columbia (UMC) was asked to use statistical weather forecasting software as an additional tool to use in their daily weather forecasting routine for the UMC campus. The introduction of this software constituted a technological innovation of a kind, allowing students to see a broader range of numerical weather prediction techniques. Although they understood and appreciated this single-station approach as somewhat obsolete, the software was quite helpful in opening a dialogue on such topics as the origins of model output statistics and what information powers various forecasting techniques.

2. RESULTS

Those students who signed a consent form sat for a pre-test and a post-test on forecasting methods and their origins and completed a post-project survey. Of 17 students enrolled in SM2, 12 completed all of the aforementioned requirements. Prior to lecturing on forecasting methods, a 12-point pre-test was administered wherein students were surveyed on rudimentary aspects of forecasting methods. Due to the small sample size, there was no control group; all students received the same exam, instruction, etc. Instead, emphasis was placed on the post-project survey.

The pre-test average was 6.6/12. After lecturing on forecasting methods, introducing the statistical weather forecasting software and allowing students to use the program and its product for six weeks, the subjects were retested. The post-test, identical to the pre-test, revealed an average score of 11.3/12, an increase of 4.7 points; the smallest score increase was 3 points, the largest was 7.

Several broad themes emerged from the post-project survey. First, students realized that useful forecasts rarely extended beyond 24 hours. Secondly (and consequentially), they learned that the quality of a numerical forecast is only as good as the data that is offered to the system as input. Finally, students came to appreciate the software as a form of numerical prediction model, viewing it as a kind of bridge between crude climatological or persistence models and sophisticated, 3-D, primitive equation, full-physics models.

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