

## Pattern Grading Approaches – Assessment of Grade Rules and Fit as Applied to Merchandise

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Keywords: pattern grading, fit, grade rules

### Introduction and Purpose

Over the past decades, as the population has changed in sizing, company fit structures have changed to accompany this growth. Company grades rule charts have shifted to generally accommodate a population that is growing larger, both bigger and taller (Smith & Norris, 2004). In addition to this fit shift, there is continued discussion over the use of vanity sizing strategies of contemporary apparel manufacturers. Whether companies are exercising accurate conveyance of anthropometric population growth, or vanity sizing, these changes filter down through the design and production processes of a company. Hence, while teaching grading in fashion design and production classes, a clear understanding of the meaning of grade rules is critical to success in the fitting functions of pattern-making. For production managers, application of accurate grade rules translates to sales in the extended size ranges, thus impacting the bottom line of a company. The purpose of the study was to include students in the active learning process to 1) gain greater appreciation for the translation of grade rules to apparel in various size categories, 2) compare and contrast grade rule use by various companies, and 3) evaluate similarities or differences between companies and grading strategies.

### Methodology

The study was conducted in the spring of 2013. Six companies were selected for study and 12 students participated in data gathering. Two junior brands, two contemporary brands and two misses brands were selected for study. The goal was to select a line with a broad size range, to gather grade rule differences into the outer sizes of a range. A grid was designed for data gathering and distributed to the students. Students were assigned to teams of two and each team was assigned three company lines for which to gather data. Students were given a pre-data-gathering briefing where they were instructed how to make garment selections, how to measure, and how to conduct themselves during the data gathering. Students were instructed to identify one simply styled pant, blouse, and skirt for each of the three companies. They had to select garments where the store had every size hanging on the rack for that garment. Students were to bring the grid, a tape measure and writing instrument with them to the retailer. Each student was instructed to bring three garments of consecutive sizes to the changing room at a time, take a photograph of the garment, and conduct a set of measurements on the garments. Complete measurements were taken on the middle size garment and comparisons (plus or minus measurements) were made from the middle size to the larger and smaller size to reduce measurement points. Students were to complete measurements on all garments for each label,

with a total of 24 measurement points across the three garments. Data was then gathered and input into a final excel grid. Each student team (6 total) assessed three garments for each of three brands (9 total), representing one junior, one contemporary and one misses label, providing a total of 54 garments assessed.

### Analysis and Results

Assumptions and limitations of the study included the use of students to gather data and thus, the possibility of human error. However, data sets appeared fairly clean and reasonably accurate using an expert patternmaker assessment. Grade rule grids were completed for each company for each garment using the data gathered. Data were input into grids from each of three student groups for each garment type. Visual assessment conveyed fairly consistent grading between sizes for similar garment types, by company. Several notable differences were revealed through data analysis. Results revealed that grade rules applied to the junior and contemporary brands were consistent through the smaller sizes (1/2 to 9/10). Differences were found in the grade rules applied to the larger sizes (11/12 to 15/16). Additionally, one of the misses brand size charts revealed slight differences across the board when compared to the Junior and Contemporary brands. The brand presented a broader range, (1 to 1 ½” circumference differences across an eight size range) when compared to other category brands. In assessing the learning outcomes for the students involved in the data gathering, students responded to having a greater appreciation for grading. They noted an understanding of differences in grade rules for small to large sizes, and also from one apparel category to another.

### Conclusions and Implications

Findings from the data revealed both similarities and differences between companies and product type in grade rule applications. Further data gathering is needed and should include grade rules for Women’s and plus size categories. Ultimately, grade rule charts can be used to offer students a level of proficiency and knowledge in the pattern-making and grading process as they enter the industry. Additionally, data can be compiled to assess broader-based, industry-wide patterns in grading. Recommendations for future research include gaining data for additional companies in each category and broadening category type. Ultimately, student learning through the process was successful in conveying accurate industry procedures prior to industry entry.

### References

Smith, S. A, & Norris, B. J. (2004). Changes in the body size of UK and US children over the past three decades. *Ergonomics*, 47.11, 1195-1207.