

Running head: INFERENCE STATISTICS

Practical Application Paper: Inferential Statistics

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Satisfying the needs of feeling competent and the need to belong is not enough for people to maintain a passion for their work (Sagor, 2003). Clearly, this suggests teachers in any school have the basic need to feel important and inspired. Without this, low morale becomes an issue within a school leading to an unmotivated and unproductive staff. In turn, this often affects students, both emotionally and performance wise.

Identifying low teacher morale within a school is usually the first stage of improving morale. This often comes by way of observations and evidence collected at the school. Due to high teacher absences, the four researchers at Cool Beans Elementary School started collecting data on a possible relationship between years of teaching experience and number of days absent from school. A trend has been identified; beginning teachers and veteran teachers appear to be more absent than their colleagues who are in the middle of their teaching career. Researchers did not identify a relationship between gender and the number of days absent from school. We need to know what is the cause of this high absenteeism?

Administrative Support

Educators know that a healthy school environment and high teacher morale are closely related. A school with high morale has a sense of community, a feeling that everyone cares and is involved in the success of students. Teachers who feel needed and wanted have a higher morale and can relate better to students. On the other hand, in schools where there is a lack of administrative support for teachers, whether real or perceived, educators may feel frustrated, alienated, and powerless. Understanding the importance of administrative support, the researchers of this study intend to ask all 61 staff members, 43 females and 18 males, the following question: Do you believe the administration of Cool Beans Elementary School

is 100% supportive of their faculty and staff? Due to a small percentage of males in the school, the researchers decided not to include gender in their data. Confidentiality and anonymity is essential for the study to maintain a positive reputation. One person was absent the day of the question. The chi-squared X^2 indicates that with an obtained value of 8.06, and a degree of freedom of 1, the result is significant at just less than a * p value of 0.01 (see Table 1). It would be appropriate to say that there is a significant difference in the number of staff members who feel that the administration is supportive compared to the number who feel that they are not supportive.

Continuing Education

The researchers of this study feel that one approach to improving teacher morale can be achieved through teachers' professional development, including continuing education, attending in-service trainings, and maintaining membership in professional educators associations. In order for potential growth, the school's culture must advocate open exploration. Fifty teachers are assessed within various age groups (see Table 2). A school committed to improvement must recognize excellence and establish procedures for sharing expertise. Continuing education as a part of professional development is not only required for the school district, but the researchers feel that it has significant potential towards improving morale. How many teachers at Cool Beans Elementary School are continuing their professional development and are prepared to face the challenges of state mandates, increased bureaucracy, school-related stress, and changing curriculum requirements? Data shown in Table 3, Table 4, and Table 5, identify, indeed, those teachers who are continuing their professional development. All teachers are expected to continue their education and attend in-service trainings, although many do not as shown in Table 3 and Table 4, and teachers may not commit to a professional

educators' association, perhaps due to cost, travel constraints, or family commitments (see Table 5).

In respect to science teaching, teachers are required to engage students in “hearts-on, hands-on, and heads-on science” (Merrett, 1990, p. 85), thus making the science curriculum interesting and engaging. How are teachers to know the difference of old-tested methods and new strategies in presenting practical activities that enable students “to plan and conduct investigations, process and interpret observations and findings, and evaluate such processes,” (Merrett, 1990, p. 86) if they do not welcome professional development.

Old teaching styles don't challenge the system, but new strategies that have been recently developed and published, available through continuing education programs, are noteworthy and “make learning about science a creative venture requiring the assessment of evidence” (Merrett, 1990, p.86). Primary and middle school teachers, in general, benefit most from professional development programs that are subject-related, enabling teachers to get current on subject-content, and then specializing at their grade level. Cost, however, is a factor, and a potential solution would be to “offer a percentage of professional development funds directly to teachers and match government money to teachers' own contributions” (Hallgarten, 2000, p. 17).

Stress is a primary cause of low teacher morale in schools. Although some stress is considered “the spice of life” (Borg, 1990, p. 103), most stress disables teachers who endure physical and mental symptoms, and creates an atmosphere of distrust and frustration, that leads to absenteeism, and eventually attrition.

Borg (1990) suggests that there are five categories of teacher stress and associated dissatisfactions: (a) training and career development, (b) the nature of work, (c) the working environment, (d) school organization, and (e) school community.

Seventy-four percent of teachers at school are stressed, as shown in Figure 1.

A summary of prominent complaints by teachers include: inadequate training, excessive workload, disruptive and non-cooperative students, lack of resources, role confusion, lack of support and concern from parents, and state-mandated test requirements. Reported signs of teacher stress are visible in Figure 2. Such teacher stress expresses itself in depression or anxiety, physical symptoms such as headaches and ulcers, deterioration in interpersonal relationships and social withdrawal, irritability and disturbed sleep, all leading to exhaustion (Borg, 1990). Coping methods unfortunately include teacher absenteeism, which is most notable of new teachers.

Recognizing that stress is a dominant factor, administrators can provide incentives for teachers to improve their practice and continue their training. For example, an idea of faculty development might be “Faculty Development Days” (Brown, 2005), which offers faculty the opportunity to develop and present workshops to colleagues on educational themes. It is a sense of professionalism that is encouraged, and community spirit to embrace the educational culture and promote leadership.

There are varying degrees of professional development. Schools in general require Continuing Education Units (CEUs) to maintain licensure, however, in-service trainings are just as valuable in redirecting teachers to take ownership and to change from being “curriculum delivery agencies into educational centers” (Day, Flores & Viana, 2007, p. 251).

An assessment in Table 7 shows that there is a statistically significant relationship of teachers' increase in morale as a result of continuance of their professional development.

If teachers' concepts of quality schools and programs for children are to be realized, then "professional development should become a universal right and responsibility expressed through a set time commitment" (Hallgarten, 2000, p. 17). Professional development should be realistic and of high quality to "enable teachers to become guiding lights in the lifelong learning vision" (p. 17).

Teacher and staff interaction

How a school staff and its teachers get along can also be a significant factor in morale in a school. If there is good teacher interaction and administrative support, teacher stress would be reduced and teachers would not be afraid or reluctant to help fellow teachers and would be more willing to continue their professional development, to improve the school environment and to be a positive influence on student behavior and study habits, while also creating a family atmosphere.

The researchers at Cool Beans Elementary School have discussed and reviewed ways in which improved interaction amongst teachers and staff can have a positive influence in eradicating absenteeism. Through continued professional development, teacher morale improves and absenteeism decreases. At Cool Beans Elementary School, we as a research team have determined what the problem is and we wish to explore ways to fix the problem and offer solutions. Our role as teachers is to have a convincing impact at school and to create a positive experience for our students.

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Table 1

Administrative Support at Cool Beans Elementary School

Do you believe the administration of Cool Beans Elementary School is 100% supportive of their faculty and staff?

	Yes	No
Observed	19	41
Expected	30	30

Note. n=60. One absence the day of the question.

chi-squared $X^2 = 8.06$; $df = 1$; * $p < 0.01$

$$X^2 = \sum \frac{(f_o - f_e)^2}{f_e}$$

$$X^2 = \frac{(19 - 30)^2}{30} + \frac{(41 - 30)^2}{30}$$

$$X^2 = \frac{121}{30} + \frac{121}{30}$$

$$X^2 = 4.03 + 4.03$$

$$X^2 = 8.06 \quad df = 1 \quad * p < 0.01$$

Table 2

Ages of Teachers at Cool Beans Elementary School

Cool Beans Elementary School Teachers				
	age 20-29	age 30-39	age 40-49	age 50-59
Number of teachers per age group	8	17	18	7

Note. n=50.

Table 3

Teachers Currently Continuing Their Education

Are you enrolled in continuing education (CEUs)				
	age 20-29	age 30-39	age 40-49	age 50-59
Observed	4	2	12	2
Expected	8	17	18	7

Note. n=50. We expect all teachers to continue their education.

Table 4

Teachers Attending In-Service Trainings

Are you attending in-service trainings?				
	age 20-29	age 30-39	age 40-49	age 50-59
Observed	2	15	18	4
Expected	8	17	18	7

Note. n=50. We expect all teachers to attend in-service trainings, but due to low teacher morale, many teachers do not attend.

Table 5

Teachers who are Members of a Professional Educators' Association

Are you a member of a professional educators' association?				
	age	age	age	age
	20-29	30-39	40-49	50-59
Observed	0	1	5	7
Expected	8	17	18	7

Note. n=50. We expect all teachers to be members, however, only 13 teachers are members, possibly due to cost, travel constraints or family commitments.

Table 7

Teachers with Positive Morale

Do you feel that you have positive teacher morale as you continue your professional development?		
	Yes	No
Observed	42	8
Expected	45	5

Note. n=50. Null hypothesis = no change in teacher morale as teachers continue their professional development. Alternative hypothesis = an increase in teacher morale as teachers continue their professional development.

chi-squared $X^2 = 2.0$; $df = 1$; * $p = 0.16$; suggests that there is a statistically significant relationship of increased teacher morale as a result of continuance of professional development, thus discluding the null hypothesis and accepting the alternative hypothesis.

$$X^2 = \sum \frac{(f_o - f_e)^2}{f_e}$$

$$X^2 = \frac{(42 - 45)^2}{45} + \frac{(8 - 5)^2}{5}$$

$$X^2 = \frac{9}{45} + \frac{9}{5}$$

$$X^2 = 0.20 + 1.80$$

$$X^2 = 2.00 \quad df = 1 \quad * p = 0.16$$

Figure Captions

Figure 1. Percentage of teachers who are stressed at school.

Figure 2. Number of teachers who report signs of stress.

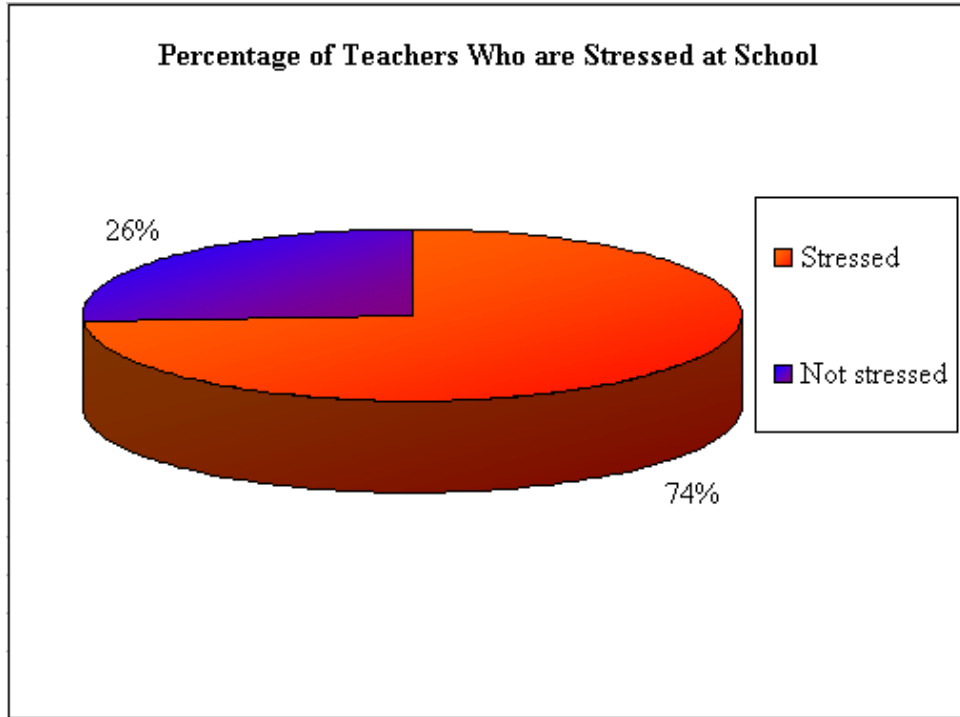


Figure 1

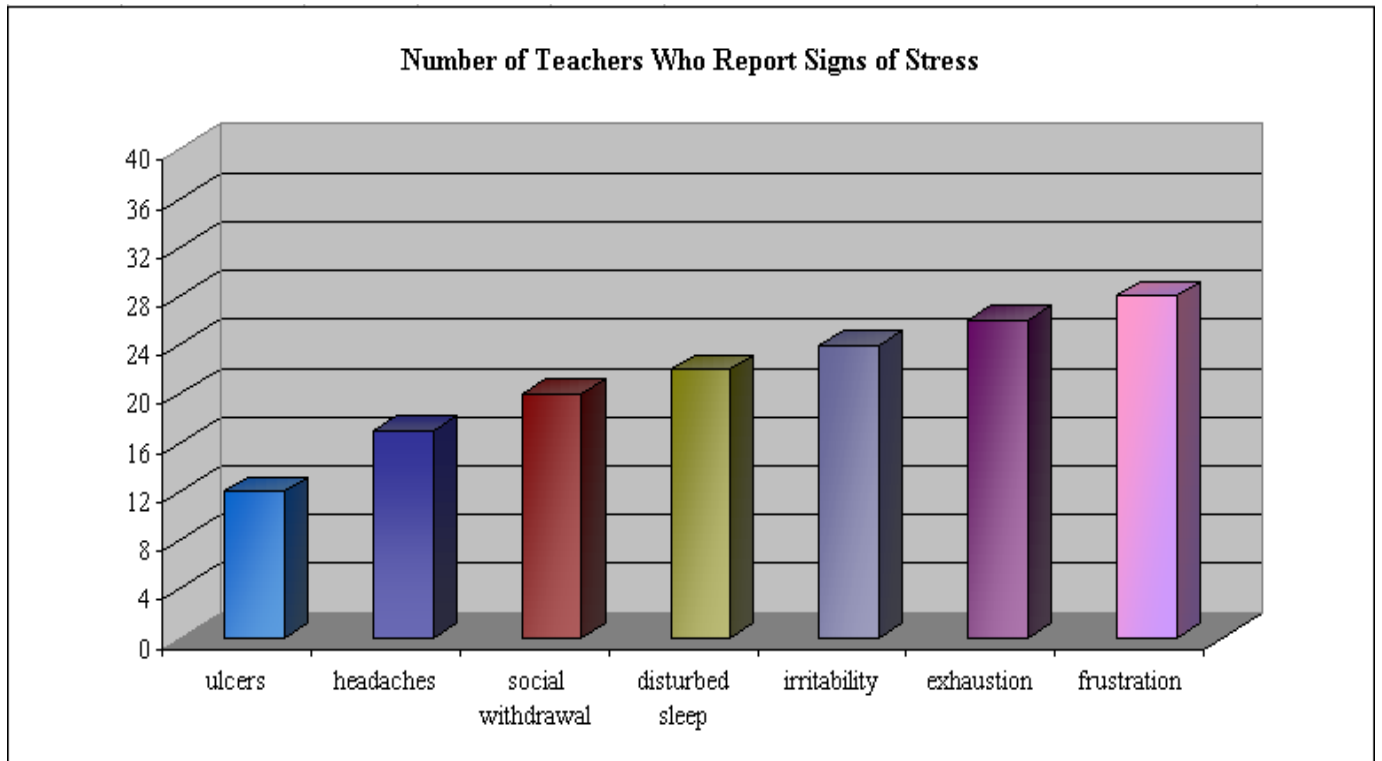


Figure 2