

Global Summary of Talking Talons Evaluation 2009 and Recommendations

This summary provides only the most basic outcomes. For full results please consult the corresponding report.

United Way

This was the first year for data collection for the United Way program. Because of the fluctuations in the students' attendance and the inherent nature of the program it is more difficult to collect data from these students.

However, in spite of the small matched sample size it is evident that the direction of change is positive for Self Esteem, Moral Attitude, Attitude Toward Science, Locus of Control and Attitude toward School (although not statistically significant). The change was in the negative direction for Self Reported Social Skills but again, not statistically significant.

Examination of the posttest questions indicate that vast majority of the students enjoy the program, hope to have it in their classroom next year and have improved self evaluation of their own teaching skills. The students also report positive feelings about their knowledge about the animals. Actual knowledge is not measured as this program is designed to impact student attitudes more than scientific knowledge.

The simple SEM indicates that, like the regular student participants, the United Way participants bond with the animals even more than with the educator. Because the Talking Talons animals are not the typical "fuzzy creatures" utilized in most animal

therapy situations it is interesting to observe that the snakes, bats and other creatures have a positive impact upon the participants.

TUPAC

Subscales were created from the TUPAC instrument. For full information see TUPAC report.

A theoretical structural model (the Saturated Model) Internal Protective Factors, School Protective Factors, Home Protective factors and 30 day use as an outcome had an reasonable acceptable fit to the data. The sample size has still not reached the point that the CFI index is above 90 due to the change in SFS instruments and resulting smaller sample . A second and simpler model (the Pruned Model) that eliminated the non-significant paths in the Saturated Model also exhibited a close fit to the data.

This section discusses the standardized estimates of the path coefficients for the Pruned Model. Standardized path coefficients estimate how much a downstream variable would change assuming a change of one standard deviation in the upstream variable. For example School Protective Factors in the Pruned Model had a direct impact on Student Attitudes Outcomes of .21. This value means that a change of one standard deviation in School Protective Factors would produce a change of .21 standard deviations in 30 day Use. Internal Protective Factors had a direct impact of .12. This value means that a change of one standard deviation in Internal Protective Factors produces a change of .12 standard deviations in 30 day use.

According to Kline (Kline, 2005); standardized path coefficients with values of less than .10 can be interpreted as small effects, values of around .30 can be interpreted as medium effects and values above .50 can be interpreted as large effects. Therefore,

Internal Protective Factors has a small impact and School Protective factors a small/medium impact on 30 day use.

School Protective Factors and Individual Protective Factors were statistically significant predictors for 30 day Use. A change of one standard deviation in School Protective Use creates a .21 standard deviation in 30 day use. A change of one standard deviation in Internal Protective Factors creates a .12 standard deviation in 30 day use. The upstream variables accounted for 38% of the variability in 30 day use.

This model is the result of examining over a dozen other possible permutations of models involving these variables. Each latent variable was hypothesized to be the exogenous variable in turn.

Teacher Feedback

The teachers mostly rank the program very highly. They feel the program is effective, but less so for below average elementary and middle school students. This concern indicates that they feel the reading level of the information is too high. This is the fourth year these results were obtained. Changes in the reading level for lower ability children should be addressed.

Again as in the previous years, feedback on the units indicates disagreement about the effectiveness of the units that are not related to the animals directly. The units on Hawks, Falcons, Owls, Bats and Reptiles were uniformly rated highly for four years in a row. The unit on Arthropods was lower rated in general. The rest of the units had less regular responses (larger standard deviations). This is the fourth year for these results

and indicates that the consistency of delivery of the non- animal units is lower than that for the animal units.

New SFS instrument

Module A, which measures actual reduction, was not significant. The regressions and the GLM indicate extremely small effect sizes. The critical issue here is that the program is designed for prevention. The entire purpose of the program is to reach the participants BEFORE they become highly involved in the use of drugs. It is evident from the data that the participants are in this category. Most indicate little drug use at this point. A few indicate that they are using multiple drugs. One point interesting in the data is that the question about cough syrup elicited a higher positive response rate with 8% (pretest) and 11% (posttest) indicating use. The participants that indicated cough syrup use did not fit the profile of the other drug users. This bears investigation, into whether cough syrup is being abused or participants are responding about the use of over the counter cough syrups for actual coughs (which would not be prescribed).

Because the program is designed to intercept drug use and change attitudes, investigation of the attitudes about drug use and their interaction with other factors is a more reasonable approach to investigating the program.

Three scales in the Module E had statistically significant changes. However, no control group was collected for these scales as the intention this year was to determine which of the Modules had higher reliability and matched the Talking Talons goals with more accuracy. Because a limited number of control subjects were available for the extra Modules they took only Module D.

The Caring Relationships scale had a statistically significant positive change in both the sum scale and mean scale scores. For the sum scale the pretest sum (5.76) was statistically lower than the posttest sum (6.39) ($t=-2.28$, $p=.025$). For the mean scale pretest scores (1.93) were significantly lower than posttest scores (2.14) ($t=-2.76$, $p<.01$). The reliability of this scale is good (.78-.88). Examination of the mean scores boxplot indicates this change is due to an overall positive shift rather than to outliers.

Participants in the Talking Talon's program had statistically higher (positive) Caring Relationships scores at posttest as compared to pretest.

The Meaningful Participation scale had a statistically significant positive change in both the sum scale and mean scale scores. For the sum scale the pretest sum (6.40) was statistically lower than the posttest sum (6.92) ($t=-2.20$, $p=.03$). For the mean scale pretest scores (2.14) were significantly lower than posttest scores 2.31) ($t=-2.16$, $p=.03$). The reliability of this scale is reasonable (.68-.81). Examination of the mean scores boxplot indicates this change is due to an overall positive shift rather than to outliers.

Participants in the Talking Talon's program had statistically higher (positive) Meaningful Participation in the Home scores at posttest as compared to pretest.

The Caring Relationship with Peers scale had a statistically significant positive change in both the sum scale and mean scale scores. For the sum scale the pretest sum (6.53) was statistically lower than the posttest sum (7.55) ($t=-3.85$, $p<.01$). For the mean scale pretest scores (2.16) were significantly lower than posttest scores 2.50) ($t=-3.96$, $p=.<.01$). The reliability of this scale is good (.87-.91). Examination of the mean scores boxplot indicates this change is due to an overall positive shift rather than to outliers.

Participants in the Talking Talon's program had statistically higher (positive) Caring Relationship with Peers scores at posttest as compared to pretest.

Because of the better reliability of these instruments over the previous SFS instrument we will add them to the instruments used in the following year. Module E particularly seems useful for our program.

Talking Talons SEM

Classroom Environment and Teacher feedback had to be eliminated from the SEM this year due to changes in the SFS document. Because some of the scales are pulled from the SFS we now have only one year of matching data to use with the classroom environment. However, the new SFS is proving to have better reliability than the old version, which should lead to improved model fit.

Talking Talons Factors

Every increase of one standard deviation in Talking Talons factors produced a Direct effect of .413 standard deviations in Self Value. Every increase of one standard deviation in Talking Talons factors produced a Direct effect of .385 standard deviations in Risk and Resiliency and an Indirect effect of .116 standard deviations for a total effect of .50 standard deviations. Every increase of one standard deviation in Talking Talons factors an Indirect effect of .328 standard deviations in Attitude toward Drug Use.

Students who had more positive viewpoints of the Talking Talons program had medium/ large statistically significant impact on Self Value. Students who had more positive viewpoints of the Talking Talons program had a medium direct effect

and a small indirect effect on Risk and Resiliency for a total large statistically significant impact on Risk and Resiliency. Students who had more positive viewpoints of the Talking Talons program had a medium indirect effect Student Attitude toward drug use for a total medium effect size statistically significant impact on Student Attitude toward Drug Use.

The impact of the Talking Talons factors on the final outcome of Drug Use is an indirect effect. The Talking Talons factors impact Self Value and Risk and Resiliency. In turn Risk and Resiliency then impacts Student Attitude toward Drug use.

Self Value

Every increase of one standard deviation in Self Value factors produced a Direct effect of .413 standard deviations in Risk and Resiliency. Every increase of one standard deviation in Self Value factors produced a Direct effect of .28 standard deviations in Risk and Resiliency. Every increase of one standard deviation in Self Value factors an Indirect effect of .183 standard deviations in Attitude toward Drug Use.

Students who had more positive Self Value had medium/ large statistically significant impact on Risk and Resiliency. Students who had more positive Self Value had a small/medium indirect effect Student Attitude toward Drug use. The impact of Self on the final outcome of Drug Use is an indirect effect. The Self Value impacts Risk and Resiliency. In turn Risk and Resiliency then impacts Student Attitude toward Drug use.

Risk and Resiliency

Every increase of one standard deviation in Risk and Resiliency factors produced a Direct effect of .66 standard deviations in Student Attitude Toward Drug Use.

Students who had more positive Risk and Resiliency Factors had a large statistically significant impact on Student Attitude toward Drug Use.

Variance of the Latent Variables

The magnitude of the variance for a latent variable indicates how much of the latent variable's variance is accounted for by its upstream latent variables. The amount of variance for each of the endogenous latent variables accounted for by its upstream latent predictors was 17% for Self Value, 32% for Risk and Resiliency and 43% for Student Attitudes toward Drug Use.

A theoretical structural model (the Saturated Model) had a good fit to the data. The model fit for this SEM indicates that high level of confidence in the model. The sample size is smaller than previous years because a new SFS instrument was utilized this year. Therefore the data from previous years cannot be incorporated into this model.

- A second and simpler model (the Pruned Model) that eliminated the non-significant paths in the Saturated Model also exhibited a close fit to the data
- For Talking Talons Factors had
 - A medium to large direct effect on Self Value

- A medium direct effect on Risk and Resiliency and a small indirect affect on Risk and resiliency for a total large effect size on Risk and Resiliency use
- A medium indirect effect size on Attitude toward Drug Use

- Self Value
 - A medium/ large positive direct effect on Risk and Resiliency
 - Small positive indirect affect on Student disapproval of Drug use
- Risk and Resiliency
 - A large positive direct effect on Student Attitude toward Drug Use

- Upstream variables in the Pruned Model predicted
 - 17% for Self Value
 - 32% for Risk and Resiliency
 - 43% for Student attitude toward Drug Use

The data from this year indicates that the Talking Talons program does not have direct effect on Student Attitude toward drug use but does have an indirect effect.

This model yields very useful information about the impact the Talking Talons program in changing measured outcomes.

The Talking Talons programs impact is on attitude toward drug use is not a direct impact, it works through changes in the students attitude outcomes. Thus, direct measurements of such variables do not provide significant results whereas measuring the impact **through** the latent variable of Risk and Resiliency and Self Value indicates a

medium effect size on Attitudes toward Drug Use. Because the Talking Talons program is designed to reach participants before they have become enmeshed in actual drug use the outcome of change attitudes about drug use is a more reasonable assessment of program outcomes than actual 30 day drug use. Because the impact is not direct and simplistic a more sophisticated evaluation approach needs to be utilized in order to observe the effects of the program than a direct linear relationship between the variables.

Qualitative Outcomes

This data is taken from the qualitative reports from Liz Walcher. Please see full reports for quotes by students.

Top five themes overall according to total interviews and total responses; sorted by grade and gender.

5th grade males

1. Enjoyed learning, holding and working with animals.
2. Gained more empathy for others and wildlife.
3. Developed knowledge of adverse effects of smoking and drugs.
4. Developed knowledge and higher respect for environment.
5. Gained confidence and public speaking skills.

5th grade females

1. Enjoyed learning, holding and working with the animals.
2. Developed a higher respect for environment.
3. Developed a higher respect for wildlife.
4. Developed better organizational and study skills
5. Developed a belief that science could be enjoyable

Top responses to questions sorted by grade and gender:

Focus Group Questions	Males	Females
1. What have you enjoyed the most from being in the Talking Talons program?	88% - learning, holding animals	75% - learning, holding animals

2. How have presentations helped?	38% - gained confidence	50% - + study skills
3. What has been the impact on your feelings towards science?	88% - positive like science more	88% - positive like science more
4. What is your attitude towards wildlife and the environment?	88% - positive	75% positive
5. Impact on personal choices?	50% - awareness of effects of smoking	88% - +empathy & responsibility
6. Would you recommend the program??	100% yes	100% yes

Top five themes according to total interviews and total responses; sorted by grade and gender.

6th grade males

1. Enjoyed the hands on experience of the program.
2. Gained a higher respect for environment & wildlife.
3. Gained confidence & self-esteem.
4. Enjoyed learning, holding and working with animals.
5. Gained knowledge and enjoyed sharing with others.

6th grade females

1. Enjoyed learning, holding and working with animals.
2. Developed a higher respect for environment.
3. Developed organizational and study skills.
4. Gained understanding of relationship with lifecycle and ecosystem
5. Gained a higher level of awareness of adverse effects of smoking

Top responses to questions sorted by grade and gender:

Focus Group Questions	Males	Females
1. What have you enjoyed the most from being in the Talking Talons program?	50% - learning, holding animals	100% - learning, holding animals
2. How have presentations helped?	75% - gained	100% - gained

	confidence 33% + study skills	Confidence & study skills
3. What has been the impact on your feelings towards science?	75% - positive like science more	75% - positive like science more
4. What is your attitude towards wildlife and the environment?	75% % - positive	100% positive
5. Impact on personal choices?	75% - + aware of effects of smoking	50% - + respect for environment 50% awareness of effects of smoking
6. Would you recommend the program??	100% yes	100% yes

Top five themes according to total interviews and total responses and sorted by grade and gender.

7th grade males

1. Enjoyed learning, holding and working with the animals.
2. Developed a higher respect for animals.
3. Developed an higher level of awareness for adverse effects of smoking/drug use.
4. Understood connection with lifecycle and ecosystem.
5. Developed a higher level of empathy for others

7th grade females

1. Developed a higher respect for environment.
2. Enjoyed learning, holding and working with the animals.
3. Enjoyed the interactive aspect of the program.
4. Developed a higher level of awareness of adverse effects of smoking/drug use.
5. Understood connection with lifecycle and ecosystem.

Top responses to questions sorted by grade and gender:

Focus Group Questions	Males	Females
1. What have you enjoyed the most from being in the Talking Talons program?	85% - learning, holding animals	81% - learning, holding animals
2. How have presentations helped?	43% - gained confidence 43% +study skills	50% + organizational and study skills

	(memorize, etc.)	
3. What has been the impact on your feelings towards science?	88% - positive like science more	81% - positive like science more
4. What is your attitude towards wildlife and the environment?	75% - positive	75% positive
5. Impact on personal choices?	63% - + awareness of smoking/drug use effects	50% + awareness of smoking/drug use effects
6. Would you recommend the program??	100% yes	100% yes

Top five themes according to total interviews and total responses; sorted by grade and gender.

High school males

1. Enjoyed learning, holding and working with the animals.
2. Learned leadership/presentation skills.
3. Gained a higher level of confidence/self esteem, loss of fear.
4. Developed more awareness of adverse effects of smoking/drug use
5. Learned new knowledge.

High school females

1. Developed organizational and study skills.
2. Enjoyed the interactive aspect of the program.
3. Enjoyed learning, holding and working with the animals.
4. Gained confidence and self-esteem.
5. Developed more awareness of adverse effects of smoking/drug use.

Top responses to questions sorted by grade and gender:

Focus Group Questions	Males	Females
1. What have you enjoyed the most from being in the Talking Talons program?	66% - learning, holding animals	100% - learning, holding animals
2. How have presentations helped?	66% gained leadership/presentation skills	33% gained more confidence, higher self esteem, loss of fear
3. What has been the	66% - positive	33% - positive

impact on your feelings towards science?	like science more	like science more
4. What is your attitude towards wildlife and the environment?	66% more positive	100% - more positive
5. Impact on personal choices?	50% - + tell others about the program, 50% awareness of adverse effects of smoking/drug use	33% - + empathy, 33% +respect for environment, 33% + awareness of smoking/drug use
6. Would you recommend the program?	100% yes	100% yes

Recommendations

- For four years in a row the teachers have indicated that the program is less effective for low ability elementary school and middle school teachers. However, during the retreat we spoke to the teachers specifically about this issue and they pointed out that although the knowledge retained may be lower, the self esteem gained by the lower level participants was greater. The teachers felt strongly that the program is very effective for the less quantifiable attitudes for the lower level students regardless of the knowledge obtained.
- Units on animals again ranked much higher than other units. Teacher feedback indicates that Talking Talons should bring animals even for the units that do not specifically utilize them in the program.
- The United Way quizzes did not yield as much information as those for the regular classroom. Some modifications of this data collection need to be made to deal with

the issues (low reading level, difficulty paying attention etc) of these students. The concern about the testing for United Way students was echoed in the teacher feedback. The United Way teachers were overwhelmingly positive about the overall program and requested that it continue for next year. They commented that the students paid more attention, were better behaved and had better attendance on Talking Talon's days. The qualitative feedback from the teachers for this program was critical. The United Way SEM, however, found that these students have the same positive response to the animals as the regular classroom students.

- The new SFS is much better, it has better reliability. The subsections chosen for the SFS also had better reliability and positive outcomes were found for some of the scales. This is the first year that an OSAP instrument has yielded useful data. Next year the middle school SFS will be used for all the OSAP groups and the K6 will be discontinued. Permission has already been granted from PIRE to switch to the new SFS.
- As the SFS was changed, data collection must begin again for our structural equation model. However, the model used this year yielded some very useful information. Data collection will continue in order to acquire a larger data set.