![Lee Pesky Learning Center logo]

Evaluation of the American Institutes of Research Self-Determination Scale With a Student Sample
April 1, 2024

Summary

Self-Regulated Learner Framework

All of Lee Pesky Learning Center's services are delivered through a self-regulated learner framework. The framework focuses on building students' skills to become more connected, self-aware, self-determined, strategic, and resilient. Overwhelming scientific evidence shows that these skills are just as critical as academic skills to school success and life-long learning.

Students who demonstrate strong self-regulation are better able to focus, attend, and navigate the social, emotional, and behavioral requirements at school and other environments. Self-regulation is also a strong predictor of later school success. However, for a significant number of students, self-regulation can be compromised if they do not receive adequate support.

To support self-regulated learning, efficient, effective, and reliable assessment tools are needed.

Self-Determination Scale

The American Institutes of Research has designed an instrument to measure self-regulation. The AIR Self-Determination Scale consists of 24 items, each item rated on a 5-point Likert-type scale: 1 (*Never*), 2 (*Almost Never*), 3 (*Sometimes*), 4 (*Almost Always*), and 5 (*Always*). Higher scores indicate greater self-determination.

Six items contribute to each of the following four factors:
- Factor 1: Things I Do (6 items)
- Factor 2: How I Feel (6 items)
- Factor 3: What Happens At School (6 items)
- Factor 4: What Happens At Home (6 items)

Additional factors are:
- Capacity Factor (Factors 1 and 2 combined)
- Opportunity Factor (Factors 3 and 4 combined)
- Total Self-Determination Factor (all factors combined)

Each factor score is calculated as the mean of relevant item ratings, ranging from 1 to 5.

During 2022 – 2024, Lee Pesky Learning Center conducted an evaluation of the scale for two clinical uses: (1) to better understand self-determination of entering students/clients and (2) to measure change in individuals' self-determination over time.

An additional benefit of the project was to help validate the AIR Self-Determination Scale with a population of students facing academic and/or attention challenges.

Participants

The scale was administered to students across four time points from 2022 to 2024, starting with 84 students at Time 1. Attrition was 38% at Time 2 ($n = 55$), 48% at Time 3 ($n = 44$), and 63% at Time 4 ($n = 31$).

Participant demographic characteristics at Time 1 are presented in Table 1.

Participants were 57% male, 42% female, and 1% nonbinary. Race groups were: White (86%), African American (1%), and mixed (1%); 12% did not report race. Ethnic groups were: White (82%), African American (1%), Asian (2%), American Indian/Alaska Native (2%), and mixed (1%); 12% did not report ethnicity. Grade levels ranged from preschool to 12+.

Results

Item Response Patterns

Histograms by item at Time 1 are presented in Figure 1, demonstrating considerable variability in response patterns.

Descriptive Statistics

Mean (*SD*) values for items and factors at all time points are presented in Table 2. Students generally responded in the "Sometimes" to "Always" range, indicating moderate to high self-determination.

Grade Differences

Figure 2 presents Total Self-Determination Factor mean scores by grade. There was little variability across grade levels.

Stability Over Time

In paired-samples *t* tests, factor scores did not significantly change across time, with two exceptions:

1. Factor 4 (What Happens at Home) Time 1 vs. Time 4 (*Means* = 3.51 vs. 3.97, respectively; $n = 31$ complete cases; $t(df = 30) = 3.41$; $p = .023$)

2. Opportunity Factor (Factors 3 and 4 combined) Time 1 vs. Time 4 (*Means* = 3.28 vs. 3.63, respectively; n = 31 complete cases; $t(df = 30) = 2.23$; $p = .034$)

Internal Consistency Reliability

Table 3 presents internal consistency (Cronbach's α) results for all factors at all time points. Reliability ranged from acceptable to excellent (.78 to .93).

Conclusions

- The AIR Self-Determination Scale is generally stable over time, with good internal consistency reliability, with preK-12+ students.

- This scale is helpful in measuring student self-determination.

- This scale is less useful for showing growth in student self-determination over time—as might be expected, given that the tool was not designed for monitoring progress.

- In future practice, this scale may be used, with a high degree of confidence, as an initial screener with this student population.

- Future evaluation of the tool is needed to further establish internal validity and address external validity of the scale.

Tables and Figures

Table 1. *Demographic Characteristics of the Student Sample at Time 1 (N = 84)*

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	n (%)
Gender	
Male	48 (57.1%)
Female	35 (41.7%)
Nonbinary	1 (1.2%)
Race	
White	72 (85.7%)
Black, African American	1 (1.2%)
Mixed Race	1 (1.2%)
Not Reported	10 (11.9%)
Ethnicity	
White	69 (82.1%)
Black, African American	1 (1.2%)
Asian	1 (1.5%)
American Indian/Alaska Native	2 (2.4%)
Mixed Ethnicity	1 (1.2%)
Not Reported	10 (11.9%)
Grade Level	
K	2 (2.4%)
1	1 (1.2%)
2	7 (8.3%)
3	6 (7.1%)
4	10 (11.9%)
5	13 (15.5%)
6	12 (14.3%)
7	7 (8.3%)
8	5 (6.0%)
9	8 (9.5%)
10	5 (6.0%)
11	0 (0%)
12+	8 (9.6%)

Table 2. *Item and Factor Descriptive Statistics (N =84 at Time 1)**

	Time 1 *Mean (SD)* N = 84	Time 2 *Mean (SD)* n = 55	Time 3 *Mean (SD)* n = 44	Time 4 *Mean (SD)* n = 31
Factor 1: Things I Do	3.31 (0.91)	3.38 (0.85)	3.42 (0.85)	3.39 (0.81)
1. I know what I need, what I like, and what I'm good at.	3.98 (0.92)	4.04 (0.79)	4.32 (0.71)	4.39 (0.76)
2. I set goals to get what I want or need. I think about what I am good at when I do this.	3.23 (1.21)	3.38 (1.23)	3.39 (1.15)	3.29 (1.13)
3. I figure out how to meet my goals. I make plans and decide what I should do.	3.29 (1.22)	3.25 (1.29)	3.30 (1.11)	3.35 (1.14)
4. I begin working on my plans to meet my goals as soon as possible.	3.13 (1.27)	3.16 (1.23)	3.25 (1.24)	3.23 (1.31)
5. I check how I'm doing when I'm working on my plan. If I need to, I ask others what they think of how I'm doing.	3.00 (1.37)	3.04 (1.37)	3.02 (1.21)	2.94 (1.39)
6. If my plan doesn't work, I try another one to meet my goals.	3.25 (1.36)	3.40 (1.27)	3.23 (1.26)	3.16 (1.21)
Factor 2: How I Feel	3.54 (0.90)	3.52 (0.91)	3.59 (0.85)	3.51 (0.83)
1. I feel good about what I like, what I want, and what I need to do.	4.01 (0.99)	4.07 (0.88)	4.05 (1.01)	4.00 (1.00)
2. I believe that I can set goals to get what I want.	3.74 (1.14)	3.64 (1.25)	3.91 (1.03)	3.74 (1.21)
3. I like to make plans to meet my goals.	3.39 (1.35)	3.38 (1.35)	3.48 (1.27)	3.42 (1.36)
4. I like to begin working on my plans right away.	3.18 (1.27)	3.24 (1.33)	3.16 (1.31)	3.35 (1.23)
5. I like to check on how well I'm doing in meeting my goals.	3.30 (1.34)	3.27 (1.35)	3.39 (1.30)	3.26 (1.26)
6. I'm willing to try another way if it helps me to meet my goals.	3.60 (1.13)	3.55 (1.30)	3.57 (1.23)	3.26 (1.18)

	Time 1 Mean (SD) N = 84	Time 2 Mean (SD) N = 55	Time 3 Mean (SD) N = 44	Time 4 Mean (SD) N = 31
Factor 3: What Happens At School	3.28 (1.00)	3.46 (1.06)	3.24 (1.07)	3.28 (1.03)
1. People at school listen to me when I talk about what I want, what I need, or what I'm good at.	3.39 (1.22)	3.64 (1.13)	3.43 (1.32)	3.61 (1.12)
2. People at school let me know that I can set my own goals to get what I want or need.	3.19 (1.40)	3.31 (1.44)	2.91 (1.48)	3.00 (1.48)
3. At school, I have learned how to make plans to meet my goals and to feel good about them.	3.38 (1.30)	3.40 (1.31)	3.32 (1.24)	3.13 (1.28)
4. People at school encourage me to start working on my plans right away.	3.23 (1.47)	3.33 (1.47)	3.00 (1.56)	3.13 (1.43)
5. I have someone at school who can tell me if I am meeting my goals.	3.33 (1.36)	3.64 (1.54)	3.41 (1.52)	3.55 (1.46)
6. People at my school understand when I have to change my plan to meet my goals. They offer advice and encourage me when I'm doing this.	3.14 (1.42)	3.44 (1.36)	3.36 (1.45)	3.26 (1.44)

	Time 1 *Mean (SD)* *N* = 84	Time 2 *Mean (SD)* *N* = 55	Time 3 *Mean (SD)* *N* = 44	Time 4 *Mean (SD)* *N* = 31
Factor 4: What Happens At Home	3.89 (1.02)	3.86 (0.92)	3.88 (0.98)	3.97 (0.86)
1. I have someone at home who can tell me if I am meeting my goals.	3.81 (1.38)	3.84 (1.24)	3.84 (1.46)	4.26 (1.21)
2. People at home listen to me when I talk about what I want, what I need, or what I'm good at.	4.24 (0.95)	4.20 (1.01)	4.32 (0.96)	4.19 (1.05)
3. At home, I have learned how to make plans to meet my goals and to feel good about them	3.69 (1.20)	3.71 (1.20)	3.61 (1.19)	3.81 (1.17)
4. People at home let me know that I can set my own goals to get what I want or need.	3.98 (1.21)	3.91 (1.32)	3.91 (1.33)	4.10 (1.19)
5. People at home encourage me to start working on my plans right away.	3.74 (1.35)	3.62 (1.41)	3.73 (1.35)	3.42 (1.23)
6. People at home understand when I have to change my plan to meet my goals. They offer advice and encourage me when I'm doing this.	3.92 (1.33)	3.91 (1.25)	3.89 (1.40)	4.06 (1.12)
Capacity Factor (Factors 1 and 2)	3.42 (0.86)	3.45 (0.84)	3.50 (0.79)	3.45 (0.77)
Opportunity Factor (Factors 3 and 4)	3.59 (0.87)	3.66 (0.90)	3.56 (0.91)	3.63 (0.87)
Total Self-Determination Factor	3.51 (0.79)	3.56 (0.80)	3.52 (0.55)	3.54 (0.74)

*Paired-samples *t* tests indicate that factor means did not significantly change after Time 1 (all two-sided *p* > .05), with two exceptions:
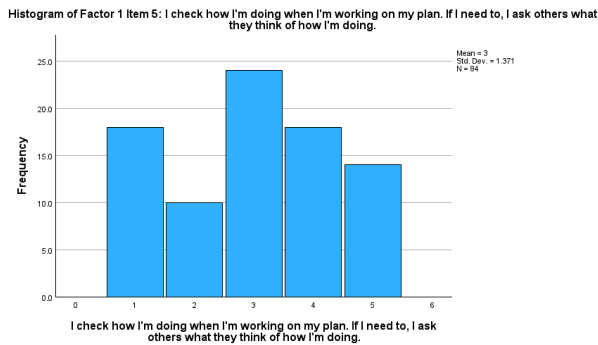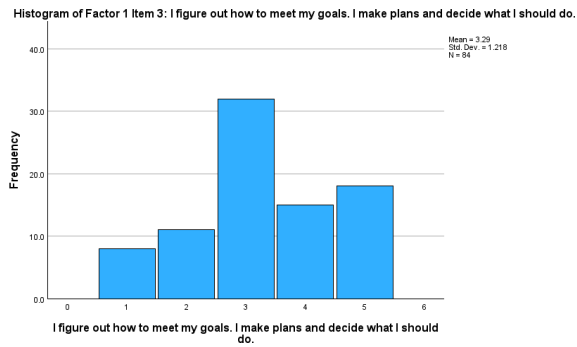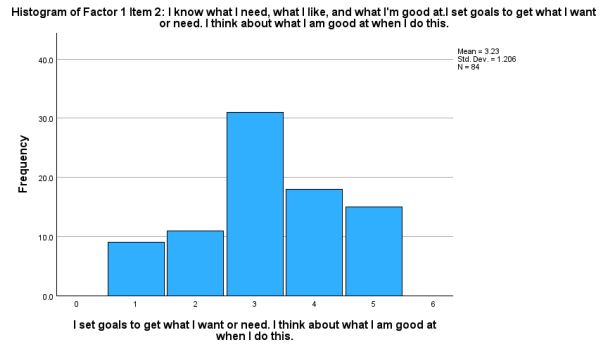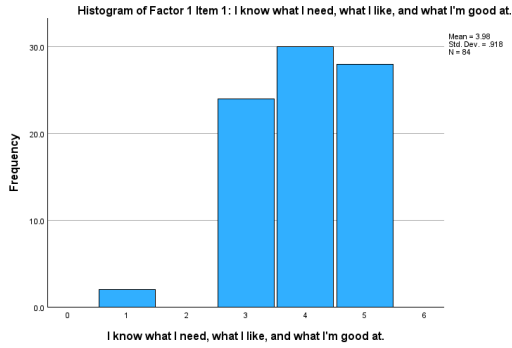1. Factor 4 Time 1 vs. Time 4 (*Means* = 3.51 vs. 3.97, respectively, for *n* = 31 complete cases; *t*(*df* = 30) = 3.41; *p* = .023)
2. Opportunity Factor Time 1 vs. Time 4 (*Means* = 3.28 vs. 3.63, respectively, for *n* = 31 complete cases; *t*(*df* = 30) = 2.23; *p* = .034)

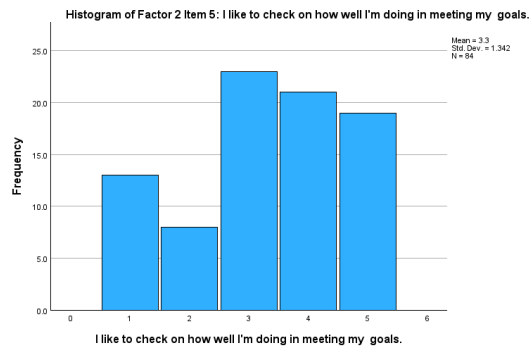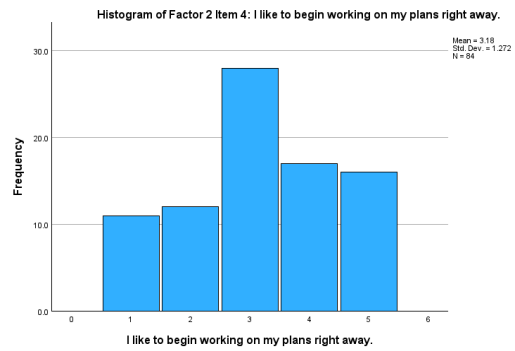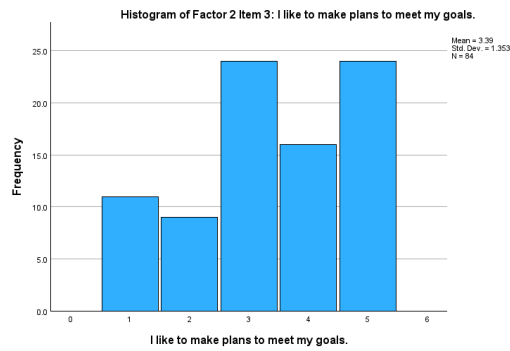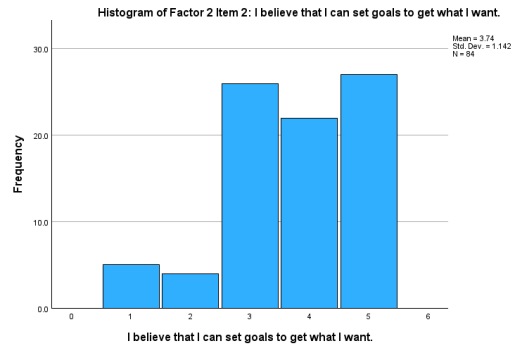**Table 3.** *Internal Consistency Reliability for Factors*

	Time 1 Cronbach's α $N = 84$	Time 2 Cronbach's α $n = 55$	Time 3 Cronbach's α $n = 44$	Time 4 Cronbach's α $n = 31$
Factor 1: Things I Do 6 items	.83	.80	.84	.78
Factor 2: How I Feel 6 items	.84	.82	.80	.78
Factor 3: What Happens at School 6 items	.83	.86	.85	.84
Factor 4: What Happens at Home 6 items	.90	.83	.80	.83
Capacity Factor (Factors 1 and 2) 12 items	.91	.90	.89	.87
Opportunity Factor (Factors 3 and 4) 12 items	.89	.90	.89	.90
Total Self-Determination Factor 24 items	.93	.93	.92	.92

Figure 1. *Histograms by Item at Time 1*

A. *Factor 1 (Things I Do) Items*

Histogram of Factor 1 Item 1: I know what I need, what I like, and what I'm good at.

Histogram of Factor 1 Item 2: I know what I need, what I like, and what I'm good at.I set goals to get what I want or need. I think about what I am good at when I do this.

Histogram of Factor 1 Item 3: I figure out how to meet my goals. I make plans and decide what I should do.

Histogram of Factor 1 Item 4: I begin working on my plans to meet my goals as soon as possible.

Histogram of Factor 1 Item 5: I check how I'm doing when I'm working on my plan. If I need to, I ask others what they think of how I'm doing.

Histogram of Factor 1 Item 6: If my plan doesn't work, I try another one to meet my goals.

B. *Factor 2 (How I Feel) Items*

Histogram of Factor 2 Item 1: I feel good about what I like, what I want, and what I need to do.

Mean = 4.01
Std. Dev. = .988
N = 84

Histogram of Factor 2 Item 2: I believe that I can set goals to get what I want.

Mean = 3.74
Std. Dev. = 1.142
N = 84

Histogram of Factor 2 Item 3: I like to make plans to meet my goals.

Mean = 3.39
Std. Dev. = 1.353
N = 84

Histogram of Factor 2 Item 4: I like to begin working on my plans right away.

Mean = 3.18
Std. Dev. = 1.272
N = 84

Histogram of Factor 2 Item 5: I like to check on how well I'm doing in meeting my goals.

Mean = 3.3
Std. Dev. = 1.342
N = 84

Histogram of Factor 2 Item 6: I'm willing to try another way if it helps me to meet my goals.

Mean = 3.6
Std. Dev. = 1.131
N = 84

C. Factor 3 (What Happens At School) Items

Histogram of Factor 3 Item 1: People at school listen to me when I talk about what I want, what I need, or what I'm good at.

Mean = 3.39
Std. Dev. = 1.222
N = 84
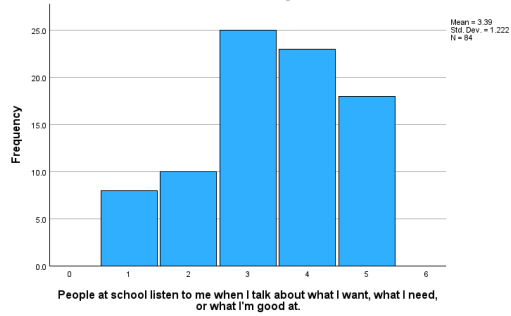
Histogram of Factor 3 Item 2: People at school let me know that I can set my own goals to get what I want or need.

Mean = 3.19
Std. Dev. = 1.401
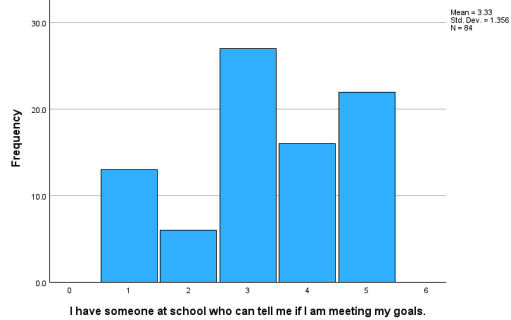N = 84
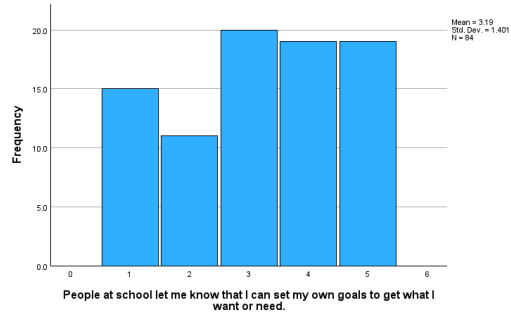
Histogram of Factor 3 Item 3: At school, I have learned how to make plans to meet my goals and to feel good about them.

Mean = 3.38
Std. Dev. = 1.298
N = 84
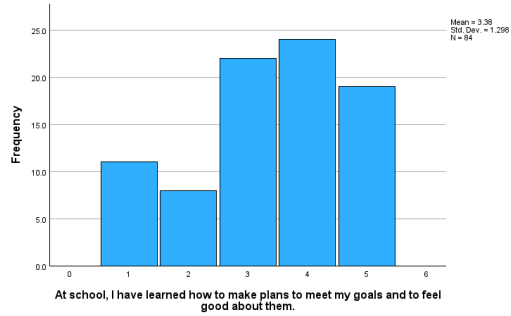
Histogram of Factor 3 Item 4: People at school encourage me to start working on my plans right away.

Mean = 3.23
Std. Dev. = 1.467
N = 84
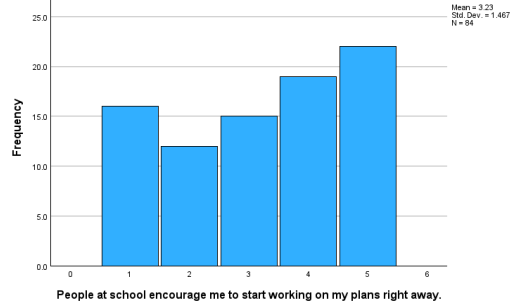
Histogram of Factor 3 Item 5: I have someone at school who can tell me if I am meeting my goals.
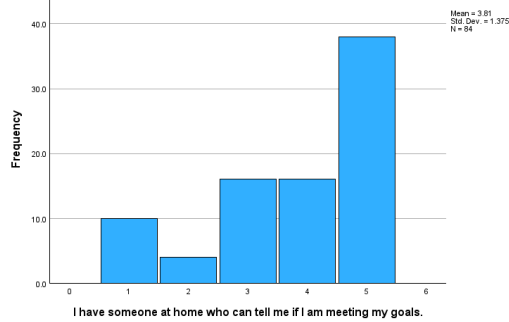
Mean = 3.33
Std. Dev. = 1.356
N = 84

Histogram of Factor 3 Item 6: People at my school understand when I have to change my plan to meet my goals. They offer advice and encourage me when I'm doing this.

Mean = 3.14
Std. Dev. = 1.415
N = 84
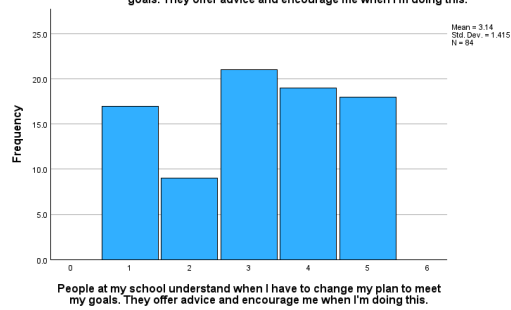
D. Factor 4 (What Happens At Home) Items

Histogram of Factor 4 Item 1: I have someone at home who can tell me if I am meeting my goals.

Mean = 3.81
Std. Dev. = 1.375
N = 84
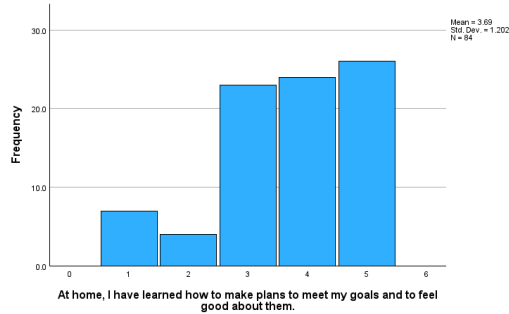
I have someone at home who can tell me if I am meeting my goals.

Histogram of Factor 4 Item 2: People at home listen to me when I talk about what I want, what I need, or what I'm good at.

Mean = 4.24
Std. Dev. = .952
N = 84

People at home listen to me when I talk about what I want, what I need, or what I'm good at.
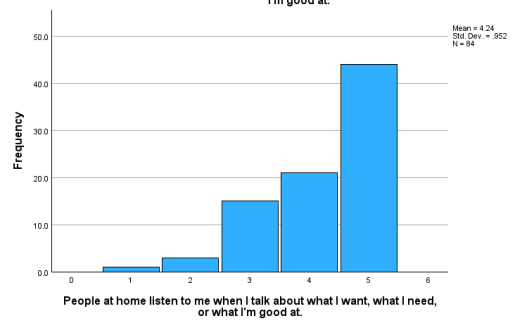
Histogram of Factor 4 Item 3: At home, I have learned how to make plans to meet my goals and to feel good about them.

Mean = 3.69
Std. Dev. = 1.202
N = 84

At home, I have learned how to make plans to meet my goals and to feel good about them.

Histogram of Factor 4 Item 4: People at home listen to me when I talk about what I want, what I need, or what I'm good at.

Mean = 4.24
Std. Dev. = .952
N = 84

People at home listen to me when I talk about what I want, what I need, or what I'm good at.
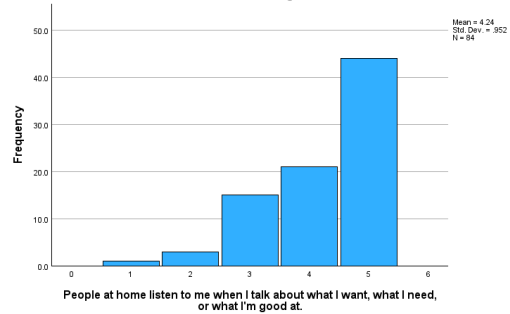
Histogram of Factor 4 Item 5: People at home encourage me to start working on my plans right away.

Mean = 3.74
Std. Dev. = 1.354
N = 84

People at home encourage me to start working on my plans right away.
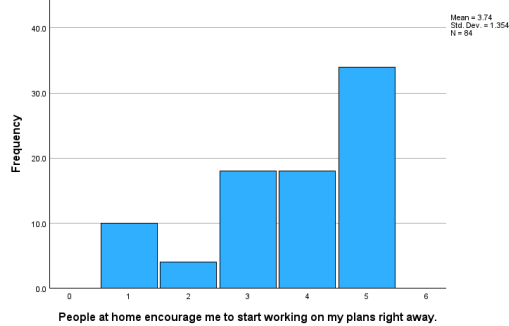
Histogram of Factor 4 Item 6: People at home understand when I have to change my plan to meet my goals. They offer advice and encourage me when I'm doing this.
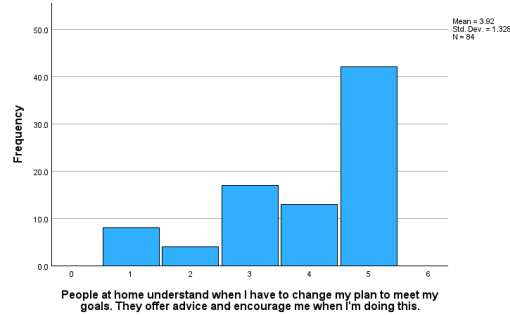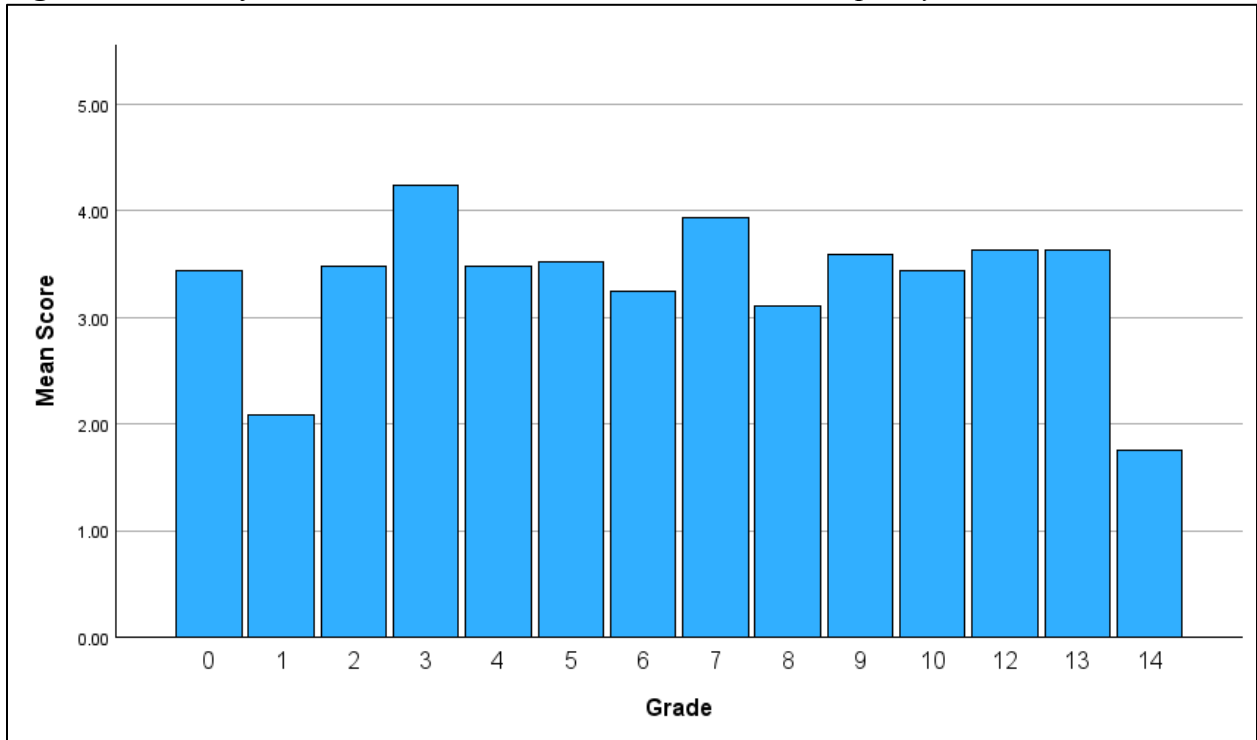
Mean = 3.92
Std. Dev. = 1.328
N = 84

People at home understand when I have to change my plan to meet my goals. They offer advice and encourage me when I'm doing this.

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Figure 2. *Total Self-Determination Factor Mean Score at Time 1 Split by Grade*