Identifying Learning Profiles in Adolescents with Autism Spectrum Disorder and Associations with School Support Intensity and Self-Determination
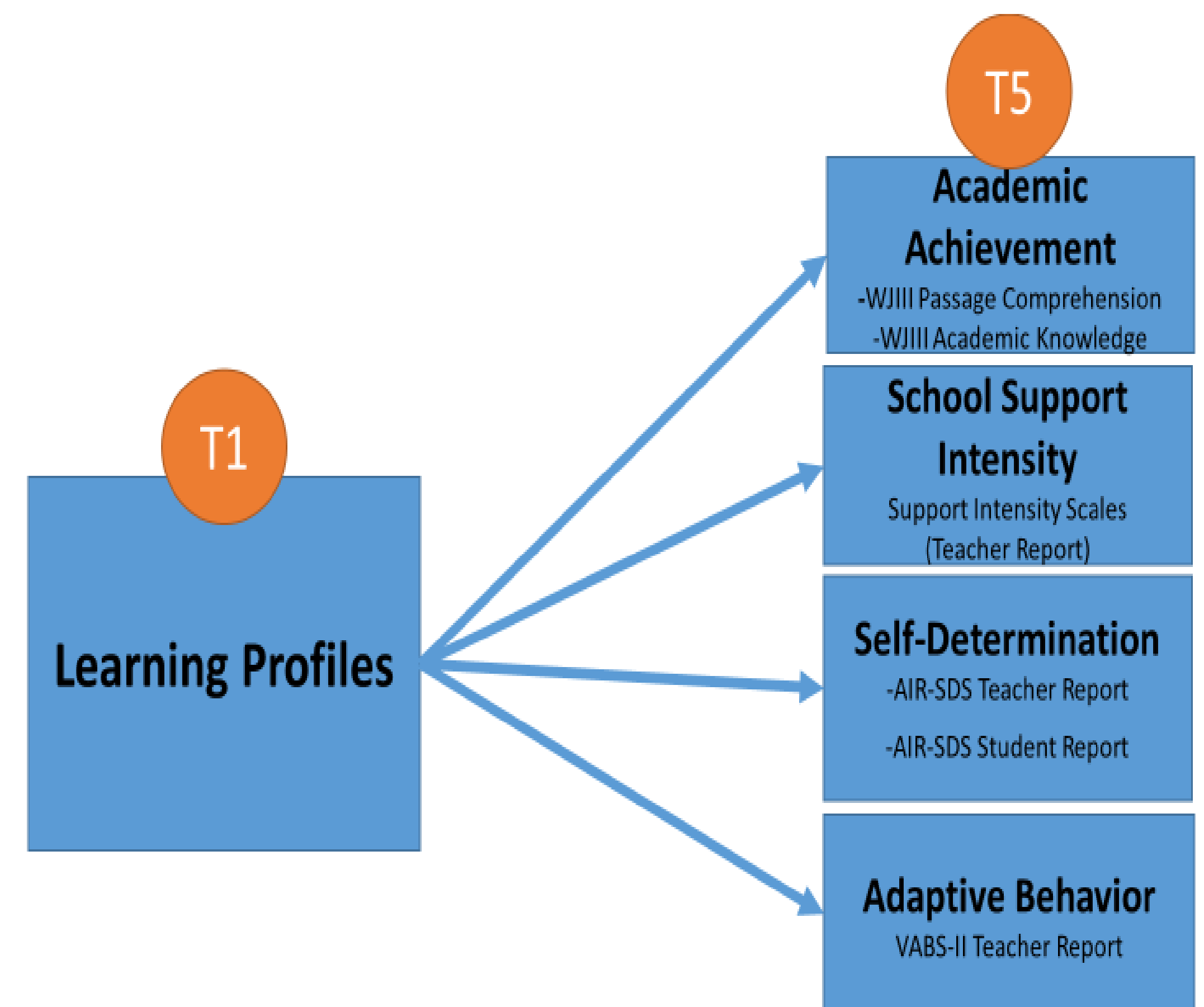
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Background

- **Individuals with ASD often experience poor post-secondary educational and vocational outcomes that are not commensurate with their cognitive abilities**.

- **School Support Intensity**. Academic achievement has been shown to be more strongly associated with social and communicative competence than with IQ for students with ASD, yet less is known about differentiating classroom support for those with different learning profiles in high school and the impact on outcomes.

- **Self-Determination**. While it might be expected that self-determination, or the capacity and opportunity to set and meet goals, is associated with better self-awareness, communication and adaptive behavior, little is known about adolescents' own perceptions and how they align with those of their teachers.

Study Objectives

1. **Identify unique profiles** of high school students with ASD associated with distinct behavioral and academic support needs using standardized assessments of cognitive, social communication, and academic abilities.
2. **Follow-up with subsample** two years later to investigate academic achievement, teacher report of school support intensity requirements and overall adaptive behavior functioning, student versus teacher report of self-determination.

Learning Profiles (T1) →
- **Academic Achievement** (T5)
  - WJIII Passage Comprehension
  - WJIII Academic Knowledge
- **School Support Intensity**
  - Support Intensity Scales (Teacher Report)
- **Self-Determination**
  - AIR-SDS Teacher Report
  - AIR-SDS Student Report
- **Adaptive Behavior**
  - VABS-II Teacher Report

Participants

- 60 schools across 3 different states (NC, WI, CA)
- Students (n=547)
  - 14-21 years-old: *M*=16.2 years, *SD*=1.44
  - Educational label of autism
- School staff (n=539)
  - Autism team of special education teachers, general education teachers

Demographic Data

Time 1-Time 5 Subsample

Group	N	Age M	Diploma Track % Standard	Gender % Male	Race %White	Ethnicity % Non-Hispanic
1	64	15.84	89.06	84.38	57.81	71.88
2	53	15.75	94.33	88.68	66.04	77.36
3	81	16.86	27.16**	83.95	58.02	67.90
4	45	17.10	17.78*	82.22	51.11	80.00

Note: *= Group 4 < Groups 1,2,3; **= Group 3 < Groups 1,2

Results: Time 1 Learning Profiles

Latent profile analysis was used to identify subgroups of participants using the WJIII Passage Comprehension and Academic Knowledge standard scores; VABS-II Receptive, Expressive, and Written Communication *v*-scale scores; SCQ raw scores controlling for NVIQ at baseline. Four groups were identified using fit criteria statistics.

Four Learning Profiles of Adolescents with ASD at Time 1: Full Sample

GROUP	N	LEITER-3 NVIQ	SCQ TOTAL	VABS-II RECEPTIVE V-SCORE	VABS-II EXPRESSIVE V-SCORE	VABS-II WRITTEN V-SCORE	WJIII PASSAGE COMP	WJIII ACADEMIC KNOWLEDGE
1	142	101.00	18.23	16.43	14.09	15.27	89.52	89.26
2	124	104.37	18.17	11.32	12.03	13.37	93.34	94.71
3	167	78.59	21.77	10.94	10.42	10.45	58.87	61.52
4	110	47.42	25.89	7.96	7.28	7.17	14.22	20.05

## Results: Time 1 Learning Profiles
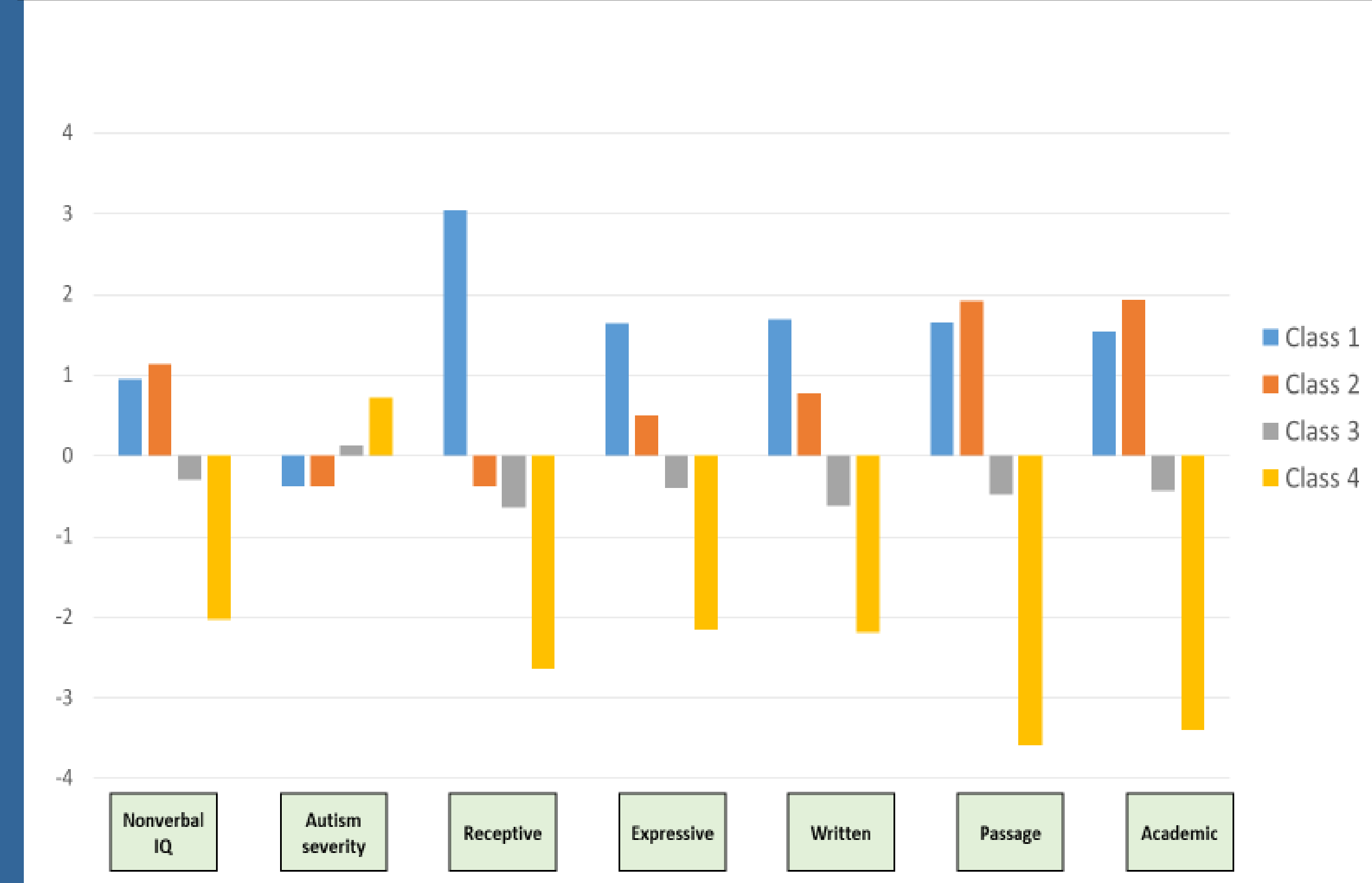
Results: Time 5 Follow-Up

Time 5 Subsample Group Means on Outcome Measures

Group	VABS-II ABC	WJIII Academic Knowledge	WJIII Passage Comp	SIS (Teacher)	AIR-SDS (Student)	AIR-SDS (Teacher)
1	89.53	89.78	91.24	2.47	3.75	3.71
2	81.64	98.19	96.60	2.68	3.81	3.51
3	77.08	65.19	65.77	3.15	3.84	3.32
4	52.60	20.38	17.29	4.24	2.95	2.38

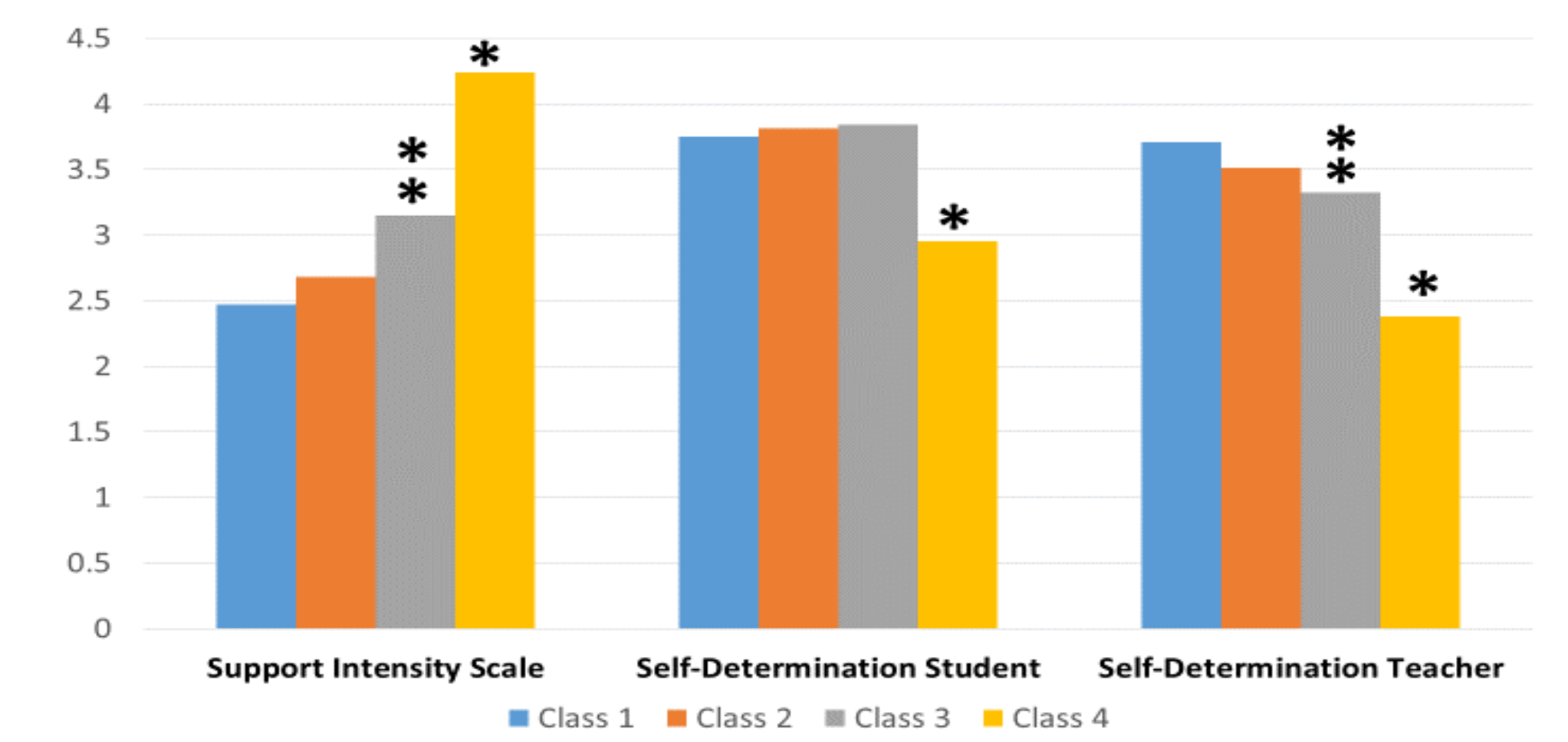**Group Differences on Adaptive and Academic Outcomes**
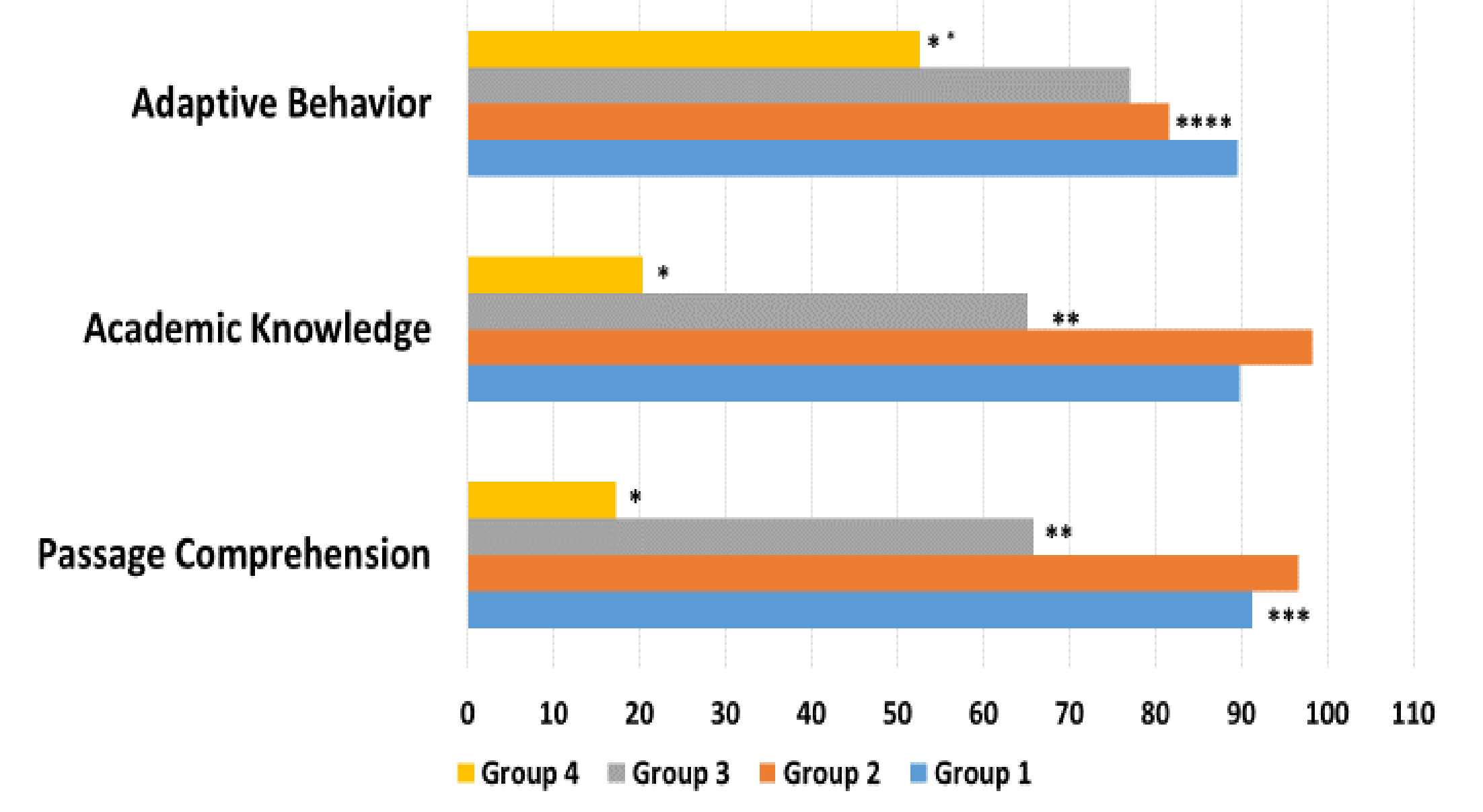
Note: *= Group 4 < Groups 1,2,3; **= Group 3 < Groups 1,2; ***= Group 1< Group 2; ****=Group 2 < Group 1

Academic achievement consistent with NVIQ and stable across time in all 4 groups.

Results: Time 5 Follow-Up

Time 5 Subsample Group Differences on Supports Intensity Scale and Self-Determination

Note: *= Group 4 < Groups 1,2,3; **= Group 3 < Groups 1,2

Conclusions

Group 1
- Average academic achievement, low ASD symptom severity and highest adaptive communication scores at time 1.
- Highest overall adaptive behavior Time 5.
- Learning profile aligns with teacher report of lower support intensity needs and higher student and teacher self-determination reports.

Group 2
- Similar academic achievement and ASD symptom severity to Group 1, but poorer adaptive communication skills at Time 1.
- Significantly poorer overall adaptive behavior than Group 1 at Time 5.
- Learning profile does not align with teacher report of lower support intensity needs or higher levels of self-determination.
- *This group may need greater adaptive and communicative support than they are receiving for improved long-term outcomes.*

Group 3
- Below average academic achievement, higher ASD symptom severity and poorer adaptive communication skills than Groups 1 & 2.
- Overall adaptive behavior at Time 5 similar to Group 2.
- Learning profile aligns with teacher report of higher support intensity and poorer self-determination than Groups 1 & 2.
- *Student report of high self-determination does not align with learning profile or teacher reports.*

Group 4
- Far below average academic achievement, highest ASD symptom severity, poorest adaptive communication skills at Time 1.
- Significantly lowest adaptive functioning at Time 5.
- Learning profile aligns with teacher report of highest support intensity and lowest self-determination self- and teacher report.

About CSESA

The Center on Secondary Education for Students with Autism Spectrum Disorder (CSESA) was a 5-year research and development project that focused on developing, adapting, and studying a comprehensive school- and community-based education program for high school students on the autism spectrum.

Acknowledgments