PORT TOWNSEND SCHOOL DISTRICT NO. 50

Regular School Board Meeting, 6:00 p.m.

March 23, 2015

"Discover the Power of Learning"

Mission:

In partnership with home and community, Port Townsend School District provides a learning environment where each student develops the knowledge and skills to become a creative, successful and engaged citizen.

01. Location/Time

01.01 Gael Stuart Building, Room S-11, 1610 Blaine St., 6:00 p.m.

02. Call to Order

02.01 Roll Call
02.02 Pledge of Allegiance

03. Agenda

03.01 Agenda Approval

04. Recognition

04.01 Board

05. Public Comments

06. Approval of Minutes

06.01 Minutes of the February 23, 2015 Regular Business Meeting
06.02 Minutes of the March 9, 2015 Board Retreat
06.03 Minutes of the March 9, 2015 Work/Study Meeting

07. Consent Agenda

07.01 Consent Agenda Approval

07.02 Approval of Personnel Action
- 07.020 Recommend Jeanette Parker as Learning Support Services Secretary, effective the 2015-16 school year
- 07.021 Recommend Cameron Botkin as Blue Heron Head Track Coach, effective the 2014-15 season
- 07.022 Recommend Alice Fraser as High School Assistant Track Coach, effective the 2014-15 season
- 07.023 Accept resignation/retirement of Linda Morris, Grant Street Elementary Teacher, effective the end of the 2014-15 school year
- 07.024 Accept resignation of Maggie Hubbell, Grant Street Elementary Paraeducator, effective March 13, 2015
- 07.025 Approve Tanya Rublaitus, High School Teacher, leave of absence for the 2015-16 school year
- 07.026 Approve Jean Scarboro, School Counselor, Grant Street Elementary, leave of absence for the 2015-16 school year

07.03 Approval of Financial Reports
- 07.030 Accounts Payable as of March 23, 2015
- 07.031 Payroll – February, 2015

08. Board Correspondence - None

09. Reports

09.01 High School ASB Report

09.02 Blue Heron Building Report – Brad Taylor

09.03 National Core Arts Standards – Daniel Ferland

09.04 Core 24 for the Class of 2019 – Principal Ehrhardt

09.05 Calendar of Events

09.06 Business Manager
- 09.060 Financial Summary
- 09.061 February Budget Status

10. Action Items

10.01 Approval of Policy 3207 – Prohibition of Harassment, Intimidation and Bullying

11. Unfinished Business

12. New Business

13. Policy Review

13.01 Policy 5011 – Sexual Harassment – First Review

14. Board Member Announcements/Suggestions for Future Meetings

15. Next Meeting

15.01 April 13, 2015, Work/Study Meeting, 6:00 p.m., 1610 Blaine Street, Room S-11

16. Executive Session – (if necessary)

17. Adjournment

Board Chair Holley Carlson called the meeting to order at 6:00 p.m. Present: Holley Carlson, Pam Daly, Jennifer James-Wilson, Keith White, and Nathanael O'Hara. Also present were Superintendent David Engle, staff, and community members.

Nathanael O'Hara led the Pledge of Allegiance.

Holley Carlson read the District Mission Statement.

Approval of Agenda
Keith White moved to approve the agenda. Pam Daly seconded and the motion carried 5-0.

Shining Star Awards
Superintendent Engle and High School Special Education teacher Darlene Marmol presented a Shining Star award to Amy Recker, for her outstanding work with students in Ms. Marmol's class.

Public Comments
Sonia Story spoke about the dangers of wireless radiation from electronic wireless devices in the District. The handouts presented by Ms. Story are attached to these minutes.

Approval of Minutes
The following minutes were brought for approval:

- January 26, 2015, Regular Board Meeting. Pam Daly moved to approve the minutes. Mr. White seconded and the motion carried 5-0.
- February 9, 2015, Work/Study Meeting. Mr. O'Hara moved to approve the minutes. Pam Daly seconded and the motion carried 5-0.

Consent Agenda
Ms. Daly moved to approve the consent agenda. Mr. White seconded and the motion carried 5-0. Included on the consent agenda were the following items: 1) Accounts Payable for February 23, 2015; 2) Payroll for January, 2015; 3) Recommend the following actions:

Hire:	Robert Cantley for the position of Assistant Boys' Soccer Coach, Port Townsend High School, effective the 2014-15 school year
Donation:	$1,000 from Steve Moore to Food Service to assist in upgrading kitchen equipment in the District

Board Correspondence – None

Reports
Superintendent
Superintendent Engle reported on the following:

- The agenda for Board work/study meetings for the remainder of the school year
- Board retreat planned for August to discuss strategic planning for the District

- Core 24, the initiative which would increase the number of credits necessary to graduate from high school to 24. Principal Ehrhardt will make a presentation regarding this topic at the March 23, 2015 regular board meeting.
- Discussion about concerns of wireless radiation raised by Ms. Story during public comments.
- Recognition from Governor Inslee for the District's participation in the College Bound Scholarship Program
- Board Self-Assessment. It was decided to plan a mini-retreat on March 9, 2015, from 4:30 – 5:30 p.m., before the work/study meeting at 6:00 p.m., to review the board self-assessment results.

Colin Coker, ASB (Associated Student Body) Representative arrived and reported that three wrestlers from Port Townsend competed at the State meet, with Chloe Rogers placing second; spring sports will begin on March 2; and the boys' soccer team has a new head coach and assistant coach.

Business Manager
Business Manager Sara Bonneville presented a January, 2015 budget status report, and a financial summary for all funds. ASB funds were discussed.

Action Items
Approval of Policy 1400 – Meeting Conduct, Order of Business and Quorum
Ms. Daly moved to approve Policy 1400 as presented. Mr. O'Hara seconded and the motion carried 5-0.

Approval of Policy 2145 – Suicide Prevention
Ms. James-Wilson moved to approve Policy 2145 as presented. Ms. Daly seconded and the motion carried 5-0.

Unfinished Business
March 23, 2015 Regular Business Meeting. Dr. Engle, Ms. James-Wilson and Holley Carlson will all be absent from this meeting, but it was decided to proceed with the meeting as Mr. White, Mr. O'Hara, and Ms. Daly plan to be present. Ms. Daly will conduct the meeting as Vice-Chair.
Board Self-Assessment Results. This item was postponed to the mini-retreat on March 9, 2015 at 4:30 p.m.

New Business – WSSDA (Washington State School Directors' Association) Regional Meetings
Ms. James-Wilson and Mr. White will attend the regional meeting scheduled on Saturday, March 28, 2015 at the North Kitsap School District.

Board Member Announcements
- Mr. O'Hara said he visited Blue Heron School on February 20, 2015.
- Mr. White attended the Maritime Discovery Schools presentation on February 18, 2015.
- Re-instituting a "What's Good in the District" item on Board meeting agendas was discussed.
- Ms. Daly said she had heard good comments about the new school lunch menu choices.

Executive Session

The regular meeting was adjourned at 7:32 p.m. for approximately 25 minutes to discuss the performance of a public employee. The executive session was adjourned at 7:58. The regular meeting was reconvened at 7:58 and adjourned by consensus at 7:58 p.m.

Respectfully submitted,

_____ _____

David Engle, Secretary ATTEST: Holley Carlson, Board Chair

Wireless Devices Fact Sheet

Radiation-Emitting devices such as cell phones, cordless phones, WiFi routers, cellular antennas, baby monitors, RFID chips and 'smart' transmitting utility meters, operate near the radio frequency (RF) of microwave ovens and are often unregulated by any state or federal agency.[1]

Fact 1

Human beings have innate electrical mechanisms for regulating heartbeat, allowing neurons to communicate, and to regulate many other biological functions. For this reason, electrical radio frequencies (RF), also called wireless radiation, from electronic wireless devices have the potential to interact with our biological functions.[2]

Fact 2

In May of 2011 the World Health Organization elevated exposure to wireless radiation, including WiFi, onto the Class 2 b list of Carcinogens.[3]

Fact 3

Reported symptoms from wireless radiation exposure include short-term memory loss, trouble concentrating, sleep disruption, headache, fatigue, dizziness, skin rashes, and changes in cardiac function[4]

Fact 4

Scientists have found DNA damage, abnormal behaviors and abnormal cell metabolism in mammals exposed to wireless radiation.[5]

Fact 5

Exposure to wireless radiation can be biologically addicting. Wireless radiation has been shown to increase the activity of endorphins and endogenous opioids which are the same compounds responsible for the biological addiction to opium, alcohol and morphine.[6]

Fact 6

At levels of exposure to wireless radiation well below current recommendations, children and adolescents exposed to radio frequencies showed abnormal behavior and fatigue that was significantly, positively correlated with rates of exposure. Exposure to wireless radiation is also implicated in anxiety and depression.[7]

Fact 7

Researchers have shown that exposure to wireless radiation decreases the body's ability to excrete heavy metals and they believe this is significant for children with Autism. In the same study researchers showed the efficiency of heavy metal detoxification increases dramatically when exposure to electro- magnetic radiation is eliminated.[8]

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[1] Singer, Katie, *An Electronic Silent Spring, Facing the Dangers and Creating Safe Limits*, Portal Books, Massachusetts, 2014.

[2] Gazca, Mary, *Electromagnetic Fields (EMFs) and Children*, St Catherine University, December 14, 2011.

[3] American Academy of Environmental Medicine, *Letter to the Peel School District regarding installation of WiFi systems in the school district*, 2013, accessed at www.aaemonline.org, 2-23-2015.

[4] Hardell, L and Sage, C., *Biological effects from electromagnetic field exposure and public exposure standards*, Biomed Pharmacother. 2008 Feb;62(2):104-9

[5] Lai, Henry, Paper presented at the "Workshop on Possible Biological and Health Effects of RF Electromagnetic Fields", Mobile Phone and Health Symposium, Oct 25-28, 1998, University of Vienna, Vienna, Austria.

[6] M. Paz de la Puent and A. Balmori, "Addiction to cell phones: Are there neurophysiologic mechanisms involved?', Proyecto, Vol. 61, 8-12, March 2007 (in English at emfacts.com)

[7] See footnotes 1 and 2 above

[8] T. Mariea and G. Carlo Wireless Radiation in the Etiology and Treatment of Autism: Clinical Observations and Mechanisms,", J Aust Coll Nutr and Env Med, Vol 26, No. 2, August 2007.

American Academy of Environmental Medicine

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www.aaemonline.org

August 30, 2013

Office of the Secretary
Federal Communications Commission
445 12th Street, SW
Washington, D.C. 20554

Re: ET Docket No. 13-84

Dear Federal Communications Commission Commissioners:

The American Academy of Environmental Medicine is writing to request that the FCC review radiofrequency (RF) exposure limits (reference is made to the FCC's NOI sections 48, 51, 52, 53, 56, 60, 65 and 69), recognize non-thermal effects of RF exposure (NOI sections 66 and 69), and lower limits of RF exposure to protect the public from the adverse health effects of radiofrequency emissions (NOI sections 48, 52, 54, 65 and 71).

Founded in 1965 as a non-profit medical association, the AAEM is an international association of physicians and scientists who study and treat the effects of the environment on human health. With an elite membership of highly trained physicians and clinicians, AAEM is committed to education, public awareness and research regarding Environmental Medicine.

It became clear to AAEM physicians that by the mid 1990's patients were experiencing adverse health reactions and disease as a result of exposure to electromagnetic fields. In the last five years with the advent of wireless devices, there has been an exponential increase in the number of patients with radiofrequency induced disease and hypersensitivity.

Numerous peer reviewed, published studies correlate radiofrequency exposure with a wide range of health conditions and diseases. (NOI sections 54, 59, 60 and 65) These include neurological and neurodegenerative diseases such as Parkinson's Disease, ALS, paresthesias, dizziness, headaches and sleep disruption as well as cardiac, gastrointestinal and immune disease, cancer, developmental and reproductive disorders, and electromagnetic sensitivity. The World Health Organization has classified RF emissions as a group 2 B carcinogen. This research is reviewed and cited in the following attached documents: *AAEM Electromagnetic and Radiofrequency Fields Effect on Human Health* and *AAEM Recommendations Regarding Electromagnetic and Radiofrequency Exposure*.

The scientific literature proves that non-thermal adverse effects of RF exposure exist and negatively impact health and physiology. New guidelines based on measurements of non-thermal effects and lowering limits of exposure are needed and critical to protect public health.

In fact, electromagnetic sensitivity and the health effects of low level RF exposure have already been acknowledged by the federal government. In 2002, the Architectural and Transportation Barriers Compliance Board stated:

> *"The Board recognizes...electromagnetic sensitivities may be considered disabilities under the ADA if they so severely impair the neurological, respiratory or other functions on an individual that it substantially limits one or more of the individual's major life activities"*

Additionally, in 2005, the National Institute of Building Sciences, an organization established by the U.S. Congress in 1974, issued an Indoor Environmental Quality Report which concluded:

> *"For people who are electromagnetically sensitive, the presence of cell phones and towers, portable telephones, computers,... wireless devices, security and scanning equipment, microwave ovens, electric ranges and numerous other electrical appliances can make a building inaccessible."*

By recognizing electromagnetic sensitivity, the federal government and affiliated organizations are clearly acknowledging the existence of non-thermal effects. The AAEM urges the FCC to recognize that non-thermal effects of RF exposure exist and cause symptoms and disease. (NOI sections 66 and 69) The AAEM also requests that the FCC base guidelines of RF exposure on measurements of non-thermal effects and lower the limits of RF exposure to protect the health of the public. (NOI sections 48, 52, 54, 65 and 71)

Sincerely ,

Amy L. Dean, DO, FAAEM, DABEM, DAOBIM
President

American Academy of Environmental Medicine

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www.aaemonline.org

April 22, 2013

To: Tony Pontes
Director of Education
Peel District School Board

From: The American Academy of Environmental Medicine
www.aaemonline.org

The American Academy of Environmental Medicine (AAEM) strongly supports the use of wired Internet connections.

The AAEM comprises Medical Doctors, Osteopaths, and PhD researchers focusing on the effects of environmental agents on human health. For forty years the Academy has trained Physicians to treat the most difficult patients who are often overlooked by our medical system, because the cause of their illness, rather than being caused by an infection or traditionally understood cause, is related to more basic underlying causes such as chemical, toxic metal, food or radiation exposures.

In May 2011 the World Health Organization elevated exposure to wireless radiation, including WiFi, onto the Class 2b list of Carcinogens.

There is consistent emerging science that shows people, especially children who are more vulnerable due to developing brains and thinner skulls, are affected by the increasing exposure to wireless radiation.

In September 2010, the Journal of the American Society for Reproductive Medicine-Fertility and Sterility, reported that only four hours of exposure to a standard laptop using WiFi caused DNA damage to human sperm.

In December 2012 the American Academy of Pediatrics- representing 60,000 pediatricians, wrote to Congress requesting it update the safety levels of microwave radiation exposure especially for children and pregnant women.

In 2010 Canada's Parliamentary Standing Committee on Health heard three days of testimony from international scientists explaining why our national safety guideline (Safety Code 6) is out of date for the increasing exposure to wireless radiation in daily life. This guideline must not be enforced as the minimum standard for places where children spend long periods of time.

In a school setting, children are exposed to WiFi for an unprecedented period of time for their entire childhood. Some of these signals will be much more powerful

than is received at home, due to the need for the signals to go through walls, and serve multiple computers simultaneously. At home families may chose to turn it off, or avoid wireless completely. The school signals are dozens of times more powerful than standard café and restaurant systems.

To install this widespread wireless internet access system in Peel District schools risks a widespread public health hazard that the medical system is not yet prepared to address. Statistics show that you can expect to see an immediate reaction in 3% and delayed effects in 30%, including teachers.

It is better to exercise caution and substitute with a safe alternate such as a wired connection, which is not classified as a possible carcinogen. While more research is being conducted children must be protected. Wired technology is not only safer, it is also stronger and more secure.

While the debate ensues about the dangers of WiFi, cell phone towers and cell phones, it is the doctors who must deal with the inevitable health effects. Until we can determine why some develop symptoms and others do not, and some are debilitated for indeterminate amounts of time, we implore you to not take this risk, with the health of so many children whose parents have entrusted you to keep them as safe as possible while at school.

Respectfully,

The Executive Committee of the American Academy of Environmental Medicine

Cc: Janet McDougald,
Chair, Peel District School Board.

Board Vice-Chair Pam Daly called the meeting to order at 4:30 p.m. Present: Pam Daly, Keith White, Jennifer James-Wilson. Excused: Holley Carlson. Also present was Superintendent David Engle.

Agenda Approval

It was noted that the date and time under 01.01 should be corrected to "March 9, 2015, 4:30 – 5:30 p.m." Jennifer James-Wilson moved to approve the agenda as corrected. Keith White seconded and the motion carried 3-0.

Board member Nathanael O'Hara joined the meeting.

Review Board Self-Assessment Results

Superintendent Engle pointed out that board members Nathanael O'Hara and Keith White are fairly new to the board, which may affect the assessment results. Dr. Engle suggested as each member reads through the data presented, pick out two or three items to explore as possible board goals. Self-assessment results from the previous year were compared to the current assessment. Dr. Engle pointed out that the community support of the district and board was reflected by the 71% approval rate of the recent levy.

The board discussed the benchmarks of success included in the board self-assessment.

Ms. James-Wilson suggested posting the WSSDA (Washington State School Directors' Association) matrix of roles and responsibilities of the board and superintendent on the website.

The District Strategic Plan was discussed, and will be the topic of the summer board retreat in August.

Ms. James-Wilson moved to extend the meeting for an additional 10 minutes to conclude the board's assessment. Mr. White seconded and the motion carried 4-0.

Superintendent Engle summarized Questions 24 and 25 regarding high expectations for all students and improving student achievement, and Questions 28-30 concerning the District Strategic Plan; these questions will be used as board goals.

Dr. Engle shared an excerpt from the book The Human Side of School Change, by Robert Evans.

Adjournment

The meeting was adjourned by consensus at 5:40 p.m.

Respectfully submitted,

_____ Attest:_____

David Engle, Secretary Pam Daly, Vice-Chair

Board Vice-Chair Pam Daly called the meeting to order at 6:00 p.m. Present: Pam Daly, Nathanael O'Hara, Jennifer James-Wilson, Keith White. Excused: Holley Carlson. Also present were Superintendent Engle, staff, and community members.

Jennifer James-Wilson led the Pledge of Allegiance.

Agenda Approval

Jennifer James-Wilson moved to approve the agenda. Nathanael O'Hara seconded and the motion carried 4-0.

Recognition

Board: Ms. Daly said she attended the OCEAN play, *Romeo and Juliet*, and thought the performance was wonderful. Ms. James-Wilson reported that the high school orchestra received second place at the Northwest Orchestra Festival held on March 5-6, 2015. It was noted that high school student Kylee Gardner was a regional winner in Olympic ESD (Educational Services District) art show and will be moving on to the state-level competition, and the high school Robotics team won third place at their competition.

Public Comments

- Sonia Story spoke about how primary-reflex movements may help children with learning difficulties.
- Lily Corley spoke in support of perhaps making community classes available for training in primary-reflex movements.

Board correspondence: The board reviewed an email from Sonia Story following up on her previous email regarding wi-fi and cell phone radiation exposure in the District.

Reports

High School ASB Report: No ASB representative was in attendance.

ReCyclery Update

Kees Kolff reported on projects planned by the ReCyclery for this year:

- Bike shelter at Blue Heron School
- Smaller bike shelter at Chimacum Creek Primary School
- Mountain bike skills park at the Mountain View property
- Bike-a-thon in May, 2015 to help raise money for projects
- Bike education class for students at Blue Heron starting April 6, 2015

Mr. Kolff also explained that May, 2015 is National Bike Month, and a dedication of the shelter at Blue Heron is planned for May 1, 2015. A short video was shown about these projects and how to support the work.

CTE (Career Technical Education) Project Update

Tanya Rublaitus, CTE Director, presented the following reports:

- Mark Welch's Video Production class is now working on a MDS (Maritime Discovery Schools) library with videos and still photos to be used in community outreach programs and on school websites.

- Hospitality and Tourism Class is planning an overnight trip in May, 2015, possibly to Great Wolf Lodge, to study how that organization operates.
- Ten students are participating in work-based learning this school year. Students are at least 16 years old, are released 1-2 periods a day to attend paid jobs in the community, work an average of 10 hours per week, and for every 180 hours worked, they earn one-half occupational or elective credit.
- Through the Computer Applications class, students can earn a Microsoft Office specialist certification in Office programs.
- Field trip for seven students from the CTE Business class and the Culinary Arts class to Whatcom and Bellingham Community Colleges on Monday, March 16, 2015.
- Tim Behrenfeld reported on the Robotics, Engineering and Manufacturing class at the high school, which gives students experience with CAD (Computer Aided Design) and CAM (Computer Aided Manufacturing) programs.
- Kelley Watson reported on the Maritime Studies class, which teaches marine trades and vessel operation. Currently a total of 33 students are enrolled in two periods.

CTE funding and Common Core Standards were discussed.

WSSDA(Washington State School Directors' Association) Legislative Conference Report
Ms. Daly and Mr. White attended this conference and said that fully funding state education was the biggest topic. Ms. Daly presented a list of hot topics (attached to minutes). Discussion followed. The possibility of taking student representatives to this conference in future years was considered.

New Business
Superintendent Engle read a proclamation from Governor Inslee proclaiming March 16-22, 2015 as School Retirees Appreciation Week (attached to minutes.)

Policy Review
Policy 3207 – Prohibition of Harassment, Intimidation and Bullying
Dr. Engle said during the recent State Comprehensive Program Review some of the district's policies were found to be in need of updating, including Policy 3207.

Board Member Announcements: Ms. James-Wilson said the High School Orchestra concert is scheduled for Wednesday, March 11, at 7:00 p.m. Dr. Engle said there will be a joint Policy Review and Tech Committee meeting on Thursday, March 12, 3:30 p.m.

Executive Session: The regular meeting was adjourned at 7:54 p.m. for approximately ten minutes to an executive session to discuss the performance of a public employee. The executive session was adjourned at 8:04 p.m.
Adjournment: The regular meeting was reconvened at 8:04 p.m. and adjourned by consensus.

Respectfully submitted,

_____ ATTEST:_____
David Engle, Secretary Pam Daly, Board Vice-Chair

Local school district contacts:

Name: _____

Title: _____

District: _____

Phone: _____

Name: _____

Title: _____

District: _____

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Name: _____

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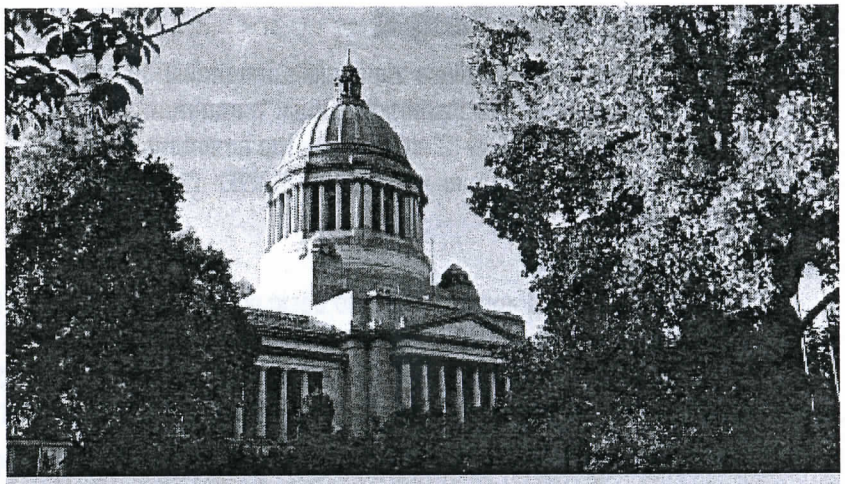

2015 WSSDA / WASA / WASBO LEGISLATIVE CONFERENCE

DAY ON THE HILL • OLYMPIA, WA • March 2, 2015

HOT TOPICS

Information for Legislators

WSSDA Washington State School Directors Association

wasa LEADERSHIP | TRUST | ADVOCACY

WASBO Washington Association of SCHOOL BUSINESS OFFICIALS

PRESENTED BY

The Washington State School Directors' Association
The Washington Association of School Administrators
and The Washington Association of School Business Officials

2015–17 Operating Budget

WSSDA, WASA, and WASBO believe the Legislature should be held accountable for complying with its constitutional "paramount duty" to provide ample funding for all K–12 children by implementing the new basic education finance system as adopted in HB 2261 (2009) and HB 2776 (2010).

We urge the Legislature to:

- Provide a substantial enhancement to basic education in the 2015–17 budget to demonstrate steady progress towards compliance with the constitution and to get the state back on schedule to amply fund education and all provisions of both HB 2261 and HB 2776 by 2018;
- Ensure enhanced funding for basic education is provided with enough flexibility to allow local school districts to make decisions that best meet the needs of their local communities;
- Enhance state revenues in order to provide ample funding for K–12 education with "regular and dependable" sources of funding and also prevent drastic reductions of other parts of the state budget that support programs students need to be successful in school and in life; and
- Publicly debate and adopt a complete plan—and a phase-in schedule—for "fully funding each of the components of basic education" to comply with the Supreme Court's orders and to provide school districts with a clear understanding of the state's future funding intentions.

2015–17 Capital Budget

WSSDA, WASA, and WASBO thank the Legislature for its historical prioritization of K–12 construction, which assists in providing students with the necessary school facilities to learn and at the same time grows the state's economy by providing jobs across the state.

We urge the Legislature to continue prioritizing K–12 construction and request they provide sufficient resources in the 2015–17 Capital Budget to "fully fund" the School Construction Assistance Program. Additionally, we ask the Legislature to enhance the state's investment in K–12 construction assistance by increasing the funding formulas for the Construction Cost Allowance and Student Space Allocation to ensure funding more closely reflects actual construction costs and educational space needs.

Mandates and Reforms

WSSDA, WASA, and WASBO call upon the Legislature to:

- Resist the urge to create new policies or amend existing reforms; and
- Fully fund programs and services that are currently required by law.

Hot Policy Bills

WSSDA, WASA, and WASBO support the following bills:

School Construction Assistance Program Funding

- **SB 5859**, Sen. Pedersen – Changes state construction funding formula drivers to a 3-year rolling average of the actual costs of construction and to the national of classroom space per student.

Substitute Teacher Shortages

- **SB 5148**, Sen. Parlette – Allows early retirees to work as substitute teachers and continue receiving pensions, with no cap on hours.
- **SB 5941**, Sen. Rivers – Creates certification for adjunct college and university professors, with at least a master's degree, to substitute, without obtaining an emergency substitute certification.

Public Records Act Relief

- **SHB 1086**, Rep. Moeller – Allows agencies and local governments, including school districts, to assess a fee for the actual cost of providing public records if the request is primarily for commercial purposes.
- **SHB 1684**, Rep. Takko – Establishes a charge for transmitting records that have been requested electronically under the Public Records Act.

Growth Management Act Task Force

- **SHB 1420**, Rep. Wilcox – As amended, creates a Legislative Task Force to discuss siting schools outside of designated Urban Growth Areas under the Growth Management Act. The Task Force must offer recommendations to the Legislature by December 1, 2015.

The State of Washington

Proclamation

WHEREAS, the Washington State School Retirees' Association (WSSRA) recognizes all retired school employees; and

WHEREAS, the WSSRA educates and assists retirees in meeting the special challenges retirement brings, and works to improve their general welfare; and

WHEREAS, the WSSRA aids in advancing education by supporting high educational standards; and

WHEREAS, the WSSRA promotes group and individual involvement in charitable projects and activities, sponsors scholarships, and maintains interest and participates in educational and community activities; and

WHEREAS, the WSSRA supports and encourages retired educators to remain active in the education profession through volunteer activities associated with learning;

NOW, THEREFORE, I, Jay Inslee, Governor of the state of Washington, do hereby proclaim March 16-22, 2015 as

School Retirees Appreciation Week

in Washington, and I urge all people in our state to join me in this special observance.

Signed this 31st day of December, 2014

Governor Jay Inslee

Articles

Effects of replicating primary-reflex movements on specific reading difficulties in children: a randomised, double-blind, controlled trial

M McPhillips, BSc, Prof PG Hepper, PhD, G Mulhern, PhD

DOI: http://dx.doi.org/10.1016/S0140-6736(99)02179-0

Article Info

Summary Full Text Tables and Figures References

Summary

Background

Children with specific reading difficulties have problems that extend beyond the range of underlying language-related deficits (eg, they have difficulties with balance and motor control). We investigated the role of persistent primary reflexes (which are closely linked in the earliest months of life to the balance system) in disrupting the development of reading skills.

Methods

We assessed the efficacy of an intervention programme based on replicating the movements generated by the primary-reflex system during fetal and neonatal life. A randomised, individually matched, double-blind, placebo-controlled design was used and children (aged 8–11 years) with persistent primary reflexes and a poor standard of reading were enrolled into one of three treatment groups: experimental (children were given a specific movement sequence); placebo-control (children were given non-specific movements); and control (no movements).

Findings

From an initial sample of 98 children, 60 children, 20 in each group were matched on age, sex, verbal intelligence quotient (IQ), reading ability, and persistent asymmetrical tonic neck reflex. For asymmetrical tonic neck-reflex levels there was a significant (group by time) interaction ($p<0·001$). The experimental group showed a significant decrease in the level of persistent reflex over the course of the study (mean change -1·8 [95% CI -2·4 to -1·2], $p<0·001$), whereas the changes in the placebo-control and control groups were not significant (-0·2 [-0·9 to 0·6] and -0·4 [-0·9 to 0·2]).

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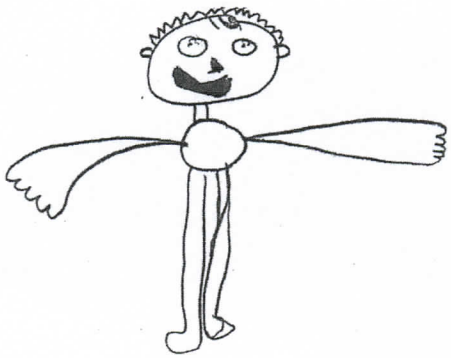
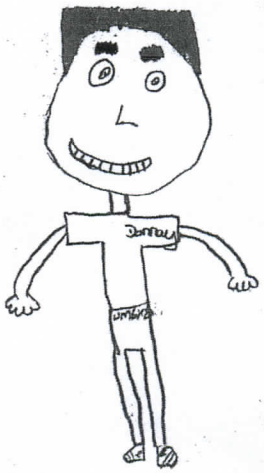


Child 3. 1st Assessment



Child 3. 2nd Assessment

Dear Sally,

Your Movement has helped me a lot with My hand writen and in the play ground.

My hand writen use to be argul it's a lot better now as you can see. the main thing about my hand writen was My neack muscels it was hard to pop my neack up.

In the play ground we all use to be bumping into every one and we use to get told of for it, but now when I play rescue I'mnever getting told of now.

Movement is fun and exciting every time we do a new movement. Its helped me a lot

Thank you

Child 3

THE MARITIME ROBOTICS DESIGN, ENGINEERING, & MANUFACTURING CLASS

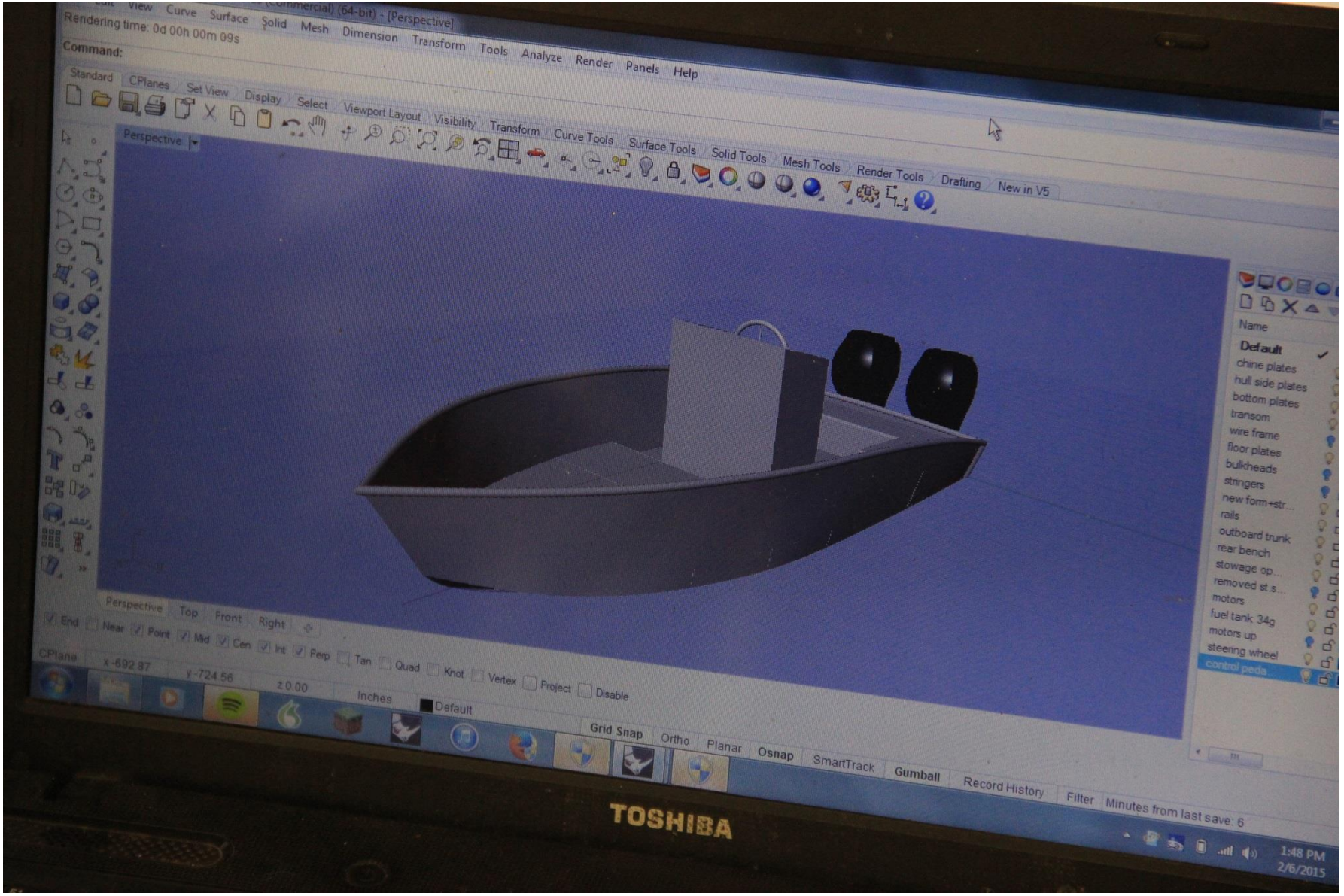
The purpose of this class:

- Give Port Townsend High School students an opportunity to experience CAD, CAM, and basic programming.
- Bring in community member volunteers (experts) who will have more involvement with class instruction, planning and curriculum development.
- Give students a “real world” customer/product design challenge

This Year's Project

- Students are producing an ASV for the Port Townsend Marine Science Center to aid in the study of the sea star wasting disease.

- Measure sea stars
- Identify species
- Obtain depth
- Obtain water temperature
- Obtain exact, real-time location
- Create photo mosaic of seafloor bottom
- Operate autonomously with RC override
- Operate to a maximum of 10 foot of depth
- Operate in a maximum current of 2 knots


Rendering time: 0d 00h 00m 09s
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Perspective
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chine plates
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bottom plates
transom
wire frame
floor plates
bulkheads
stringers
rails
outboard trunk
rear bench
motors
fuel tank 34g
motors up
steering wheel
TOSHIBA
1:48 PM
2/6/2015

Committee Partners

- ***TURN POINT DESIGN, Inc.***

Brandon Davis

- **Beth Juran**
- Marketech International, Inc.

- Atlas Technologies
- Jed Bothell

- Phil Pilgrim
- Buenosystems. Inc.

- Gary McLuen
- McLuen Designs

What Next?

- Acquisition of laser cutter with installation


www.epiloglaser.com
zing
LASER
MADE IN USA

What Next?

- Acquisition of laser cutter with installation
- Acquisition of Triple axis 3D Shopbot Spindle Router.


ShopBot
Desktop

What Next?

- Acquisition of laser cutter with installation
- Acquisition of Triple axis 3D Shopbot Spindle Router
- Clean up G-20
- Open G-19 to G-20
- Access to outside
- Purchase Tools
- Move existing tools from wood shop to new shop

February 27, 2015

Port Townsend Schools

[redacted]

Port Townsend, Washington

98368

Dear. Dr. David Engle,

I would like to resign from my teaching position at Grant Street Elementary School as of June 30, 2015. I am retiring after 29 years of teaching for the Port Townsend School District and one year and three months for the Bellingham School District.

Thank you for the pleasure of teaching so many of the young children of Port Townsend.

Sincerely yours,

Linda E. Morris

Linda E. Morris

[redacted]
Port Townsend, WA 98368
March 11, 2015

Mr. David Engle, Superintendent
Port Townsend School District
1610 Blaine Street
Port Townsend, WA 98368

Dear David:

It has been an amazing 18 years for me as the business teacher and vocational director at Port Townsend High School! I have grown so much, both personally and professionally, and am extremely grateful to the district for its support of my professional endeavors.

I am requesting a one-year leave of absence for the 2015-2016 school year. During that time, I plan to enter the business world and work in the field in which I teach to gain more practical and hands-on experience. I think it is extremely important for CTE teachers to go back into their field periodically and make sure what they are teaching in their classrooms is relevant and current.

Thank you for your thoughtful consideration of my request.

Sincerely,

Tanya Rublaitus.

Tanya Rublaitus

c Carrie Ehrhardt, Principal
Laurie McGinnis, Human Resources

GRANT STREET ELEMENTARY

PORT TOWNSEND SCHOOL DISTRICT NO. 50
1637 Grant Street, Port Townsend, WA 98368
Main Office 360. 379.4535, Fax 360.379.4261 Mary S. Sepler, Principal

Dear Dr. Engle,

03/11/2015

I am writing to request a leave of absence from my .6 School Counselor position at Grant Street Elementary for the 2015/2016 school year. [redacted]. I would like the option of returning to my current position, or a similar position, for the 2016/2017 school year. I love working at Grant Street Elementary and in the Port Townsend school district.

Thank you so much for your consideration.

Sincerely,

Jean Scarboro, School Counselor
Grant Street Elementary
360-349-4888
jscarboro@ptschools.org

cc: Mary Sepler, Laurie McGinnis

To: Laurie McGinnes, Director of Personnel
From: Patrick Kane, Director of Special Services PKane
RE: Jeanette Parker
Date: 3-11-15

Jeanette Parker was interviewed for the secretarial position for Special Services and Assessment. She was interviewed along with three other candidates. The interviewing team determined that Jeanette was the best candidate to be hired for the position. She accepted the job. The interviewing team: Patrick Kane, Emily Gustafson, Ruth Baldwin, Dawn Young, Laurie McGinnes and Vickie Lowrie.

3-4-15

Maggie Hubbell

I am resigning as EA as of March 13th. I originally gave my two weeks on Feb 20th. I have extended to help with the meeting, but I really don't see things changing enough to make me a functional person on this team. Philosophies are just too different.

Thank you for everything.

Maggie Hubbell

BLUE HERON SCHOOL

3939 San Juan Avenue
Port Townsend, WA 98368
Phone: (360) 379-4540
Fax: (360) 379-4548

Dr. Diane Lashinsky, Principal
Grades 4 - 8
www.ptschools.org/blueheron

To:

Port Townsend District 50
1500 Van Ness
Port Townsend, WA 98368

From:

Scott Wilson
Athletic Director
Port Townsend School District 50
1500 Van Ness
Port Townsend, WA 98368

RE: Cameron Botkin: Middle School Head Track, Blue Heron

Date: March 6, 2015

Dr. Engle and Members of the School Board,

After reviewing her application and conducting the subsequent interview, I, Scott Wilson, recommend Cameron Botkin for the position of head track coach at Blue Heron Middle School.

Cameron has a solid coaching background and is known for developing positive relationships with kids. I am excited for her help with our devotion to what is best for kids under our Culture of Excellence.

Sincerely,

Scott Wilson
Athletic Director, Port Townsend School District

CC: Lysa Falge, Assistant Athletic Director

Port Townsend High School

1500 Van Ness, Port Townsend, WA 98368
Phone: 360.379.4520 Fax: 360.379.4505

Carrie Ehrhardt, Principal Scott R Wilson, Assistant Principal
Athletic Director

To:

Port Townsend District 50
1500 Van Ness
Port Townsend, WA 98368

From:

Scott Wilson
Athletic Director
Port Townsend School District 50
1500 Van Ness
Port Townsend, WA 98368

RE: Alice Fraser: Assistant Track, PTHS

Date: March 6, 2015

Dr. Engle and Members of the School Board,

After reviewing her application and conducting the subsequent interview, I, Scott Wilson, recommend Alice Fraser for the position of assistant track coach at Port Townsend High School.

Alice is already a vital member of our coaching staff as our Cross Country coach and has contributed a great deal of time and effort to do what is best for kids. I look forward to Alice's help with our track program.

Sincerely,

Scott Wilson

The following vouchers, as audited and certified by the Auditing Officer as required by RCW 42.24.080, and those expense reimbursement claims certified as required by RCW 42.24.090, are approved for payment. Those payments have been recorded on this listing which has been made available to the board.

As of March 23, 2015, the board, by a _____ vote, approves payments, totaling $7,009.93. The payments are further identified in this document.

Total by Payment Type for Cash Account, ASSOCIATED STUDENT BODY:
Warrant Numbers 10020 through 10027, totaling $7,009.93

Secretary _____ Board Member _____

Board Member _____ Board Member _____

Board Member _____ Board Member _____

Check Nbr	Vendor Name	Check Date	Check Amount
10020	BANK OF AMERICA VISA	02/27/2015	1,314.52
10021	DAIRY FRESH FARMS INC	02/27/2015	36.96
10022	GOOD SPORTS	02/27/2015	22.90
10023	Hammer, Kirsten	02/27/2015	844.11
10024	HOLLY'S FLOWERS	02/27/2015	87.20
10025	N OLYMPIC BASKETBALL OFFICIALS	02/27/2015	4,645.39
10026	Rublaitus, Tanya K	02/27/2015	20.00
10027	SAFEWAY	02/27/2015	38.85
8	Computer Check(s) For a Total of		7,009.93

The following vouchers, as audited and certified by the Auditing Officer as required by RCW 42.24.080, and those expense reimbursement claims certified as required by RCW 42.24.090, are approved for payment. Those payments have been recorded on this listing which has been made available to the board.

As of March 23, 2015, the board, by a _____ vote, approves payments, totaling $8,495.89. The payments are further identified in this document.

Total by Payment Type for Cash Account, ASSOCIATED STUDENT BODY:
Warrant Numbers 10028 through 10038, totaling $8,495.89

Secretary _____ Board Member _____

Board Member _____ Board Member _____

Board Member _____ Board Member _____

Check Nbr	Vendor Name	Check Date	Check Amount
10028	ASB IMPREST FUND	03/16/2015	2,968.30
10029	CLALLAM COUNTY PARKS DEPT	03/16/2015	40.00
10030	COSTCO	03/16/2015	35.95
10031	GOOD SPORTS	03/16/2015	75.21
10032	GOPHER SPORTS EQUIPMENT	03/16/2015	115.65
10033	McMather, Gina	03/16/2015	2,370.00
10034	PENINSULA WRESTLING ASSOC	03/16/2015	1,482.03
10035	PENINSULA AWARDS & TROPHIES	03/16/2015	204.63
10036	Russell, Julie Ann	03/16/2015	21.73
10037	SAFEWAY	03/16/2015	149.70
10038	THE SPORT HAUS	03/16/2015	1,032.69

11 Computer Check(s) For a Total of 8,495.89

The following vouchers, as audited and certified by the Auditing Officer as required by RCW 42.24.080, and those expense reimbursement claims certified as required by RCW 42.24.090, are approved for payment. Those payments have been recorded on this listing which has been made available to the board.

As of March 23, 2015, the board, by a _____ vote, approves payments, totaling $1,138.15. The payments are further identified in this document.

Total by Payment Type for Cash Account, CAPITAL PROJECTS:
Warrant Numbers 3222 through 3222, totaling $1,138.15

Secretary _____ Board Member _____

Board Member _____ Board Member _____

Board Member _____ Board Member _____

Check Nbr	Vendor Name	Check Date	Check Amount
3222	KING COUNTY DIRECTORS	03/16/2015	1,138.15
1	Computer Check(s) For a Total of		1,138.15

The following vouchers, as audited and certified by the Auditing Officer as required by RCW 42.24.080, and those expense reimbursement claims certified as required by RCW 42.24.090, are approved for payment. Those payments have been recorded on this listing which has been made available to the board.

As of March 23, 2015, the board, by a _____ vote, approves payments, totaling $63,552.85. The payments are further identified in this document.

Total by Payment Type for Cash Account, GENERAL FUND:
Warrant Numbers 58569 through 58619, totaling $63,552.85

Secretary _____ Board Member _____

Board Member _____ Board Member _____

Board Member _____ Board Member _____

Check Nbr	Vendor Name	Check Date	Check Amount
58569	A+ EQUIPMENT RENTALS	02/27/2015	7.24
58570	AMSAN OLYMPIC SUPPLY	02/27/2015	1,163.78
58571	ARROW LUMBER & HARDWARE	02/27/2015	51.54
58572	ARTHUR J. GALLAGHER RISK MGMT	02/27/2015	192.50
58573	ASCD	02/27/2015	89.00
58574	B & H PHOTO VIDEO	02/27/2015	306.60
58575	BANK OF AMERICA VISA	02/27/2015	6,271.67
58576	Bonneville, Sara L	02/27/2015	52.33
58577	CANON FINANCIAL SERVICES INC	02/27/2015	207.07
58578	CAROLINA BIOLOGICAL SPLY	02/27/2015	189.30
58579	Cartwright, Lisa K	02/27/2015	205.82
58580	Chao, Jeanne	02/27/2015	74.98
58581	COON PLUMBING	02/27/2015	153.96
58582	Ehrhardt, Carrie L	02/27/2015	21.85
58583	Engle, David S	02/27/2015	17.85
58584	ESD 114	02/27/2015	15,462.21
58585	FOOD CO-OP	02/27/2015	23.56
58586	Gitelman, Joan H	02/27/2015	206.36
58587	Hageman, Brandi R	02/27/2015	49.45
58588	Healy-Raymond, Ann Elizabeth	02/27/2015	230.00
58589	JT EDUCATIONAL CONSULTANTS INC	02/27/2015	700.00
58590	JW PEPPER & SON INC	02/27/2015	57.22
58591	KARSCHNEY CONSULTING	02/27/2015	3,900.00
58592	KING COUNTY DIRECTORS	02/27/2015	288.02
58593	KROGER - QFC CUSTOMER CHARGES	02/27/2015	130.17
58594	LEADER	02/27/2015	46.00
58595	LES SCHWAB	02/27/2015	803.35
58596	Manning, Jennifer Dawn	02/27/2015	27.37
58597	Miller, James Keith	02/27/2015	186.14
58598	MILLER, KATE	02/27/2015	627.13
58599	Mills, Roger Lees	02/27/2015	15.00
58600	Molotsky, Daniel Robert	02/27/2015	78.19
58601	MUSIC & ARTS CENTER	02/27/2015	165.41

Check Nbr	Vendor Name	Check Date	Check Amount
58602	NORTH OLYMPIC MUSIC EDUCATORS	02/27/2015	125.00
58603	OLYMPIC PENINSULA CONSULTANTS	02/27/2015	150.00
58604	ONSITE ENVIRONMENTAL INC	02/27/2015	40.00
58605	PENINSULA PEST CONTROL	02/27/2015	370.60
58606	PLATT	02/27/2015	21.80
58607	POLLACK, JORDAN D	02/27/2015	350.00
58608	POSTAGE BY PHONE RESERVE ACCOU	02/27/2015	1,025.00
58609	PUBLIC UTILITY DISTRICT	02/27/2015	27,137.42
58610	REVOLVING FUND	02/27/2015	443.70
58611	SOL DUC HOT SPRINGS RESORT	02/27/2015	645.38
58612	SOS PRINTING	02/27/2015	21.34
58613	STATE AUDITOR	02/27/2015	575.90
58614	TACOMA COMM COLLEGE	02/27/2015	198.26
58615	Taylor, Brad James	02/27/2015	125.35
58616	Webster, William Thomas	02/27/2015	31.20
58617	WESTBAY AUTO PARTS	02/27/2015	65.64
58618	Wilson, Scott Randall	02/27/2015	103.25
58619	ZEE MEDICAL	02/27/2015	121.94

51 Computer Check(s) For a Total of 63,552.85

The following vouchers, as audited and certified by the Auditing Officer as required by RCW 42.24.080, and those expense reimbursement claims certified as required by RCW 42.24.090, are approved for payment. Those payments have been recorded on this listing which has been made available to the board.

As of March 23, 2015, the board, by a _____ vote, approves payments, totaling $157,125.93. The payments are further identified in this document.

Total by Payment Type for Cash Account, GENERAL FUND:
Warrant Numbers 58620 through 58692, totaling $157,125.93

Secretary _____ Board Member _____

Board Member _____ Board Member _____

Board Member _____ Board Member _____

Check Nbr	Vendor Name	Check Date	Check Amount
58620	AMSAN OLYMPIC SUPPLY	03/16/2015	582.27
58621	Behrenfeld, Kirsten Mary	03/16/2015	57.50
58622	Behrenfeld, Timothy Jon	03/16/2015	740.03
58623	BUTLER, ROBERTA L	03/16/2015	3,570.00
58624	CAROLINA BIOLOGICAL SPLY	03/16/2015	137.07
58625	Cartwright, Lisa K	03/16/2015	220.45
58626	CDW GOVERNMENT	03/16/2015	1,834.80
58627	CENEX FLEETCARD	03/16/2015	2,087.82
58628	Chambers, Luci J	03/16/2015	71.53
58629	CHIMACUM SCH DIST#49-CO-OP TRA	03/16/2015	15,047.49
58630	CITY OF PT TOWNSEND	03/16/2015	5,064.00
58631	Clarke, Kimberly A	03/16/2015	305.00
58632	Clark, Lisa M	03/16/2015	8.72
58633	COSTCO	03/16/2015	181.45
58634	DAIRY FRESH FARMS INC	03/16/2015	1,647.59
58635	DATABASE SECURE RECORDS DESTRC	03/16/2015	41.63
58636	DIGITAL INSURANCE INC	03/16/2015	500.00
58637	DM DISPOSAL CO INC	03/16/2015	5,319.10
58638	EDENSAW WOODS	03/16/2015	947.21
58639	Engle, David S	03/16/2015	110.25
58640	ESD 114	03/16/2015	30,477.81
58641	FOLLETT EDUCATIONAL SERVICES	03/16/2015	226.27
58642	FOOD CO-OP	03/16/2015	140.08
58643	FOOD SERVICES OF AMERICA	03/16/2015	9,879.47
58644	Goff, Robert Galen	03/16/2015	11.38
58645	GREENTREE COMMUNICATIONS	03/16/2015	94.57
58646	Halton, Sara C	03/16/2015	126.00
58647	HEALTH CARE AUTHORITY	03/16/2015	161.42
58648	HENERY HARDWARE	03/16/2015	1,062.38
58649	JAMESTOWN NETWORKS	03/16/2015	900.00
58650	JEFFERSON COUNTY AUDITOR	03/16/2015	11,159.32
58651	JIVE COMMUNICATIONS, INC.	03/16/2015	5,455.17
58652	JW PEPPER & SON INC	03/16/2015	137.19

Check Nbr	Vendor Name	Check Date	Check Amount
58653	Kane, Patrick J	03/16/2015	52.90
58654	KARSCHNEY CONSULTING	03/16/2015	3,900.00
58655	KING COUNTY DIRECTORS	03/16/2015	1,529.71
58656	KROGER - QFC CUSTOMER CHARGES	03/16/2015	149.58
58657	Kruse, Jennifer Kathleen	03/16/2015	95.62
58658	LANCE, PHILIPPA	03/16/2015	6,555.00
58659	LEADER	03/16/2015	93.00
58660	Love, Melissa Jane	03/16/2015	38.14
58661	Marmol, Darlene	03/16/2015	41.40
58662	MASCO PETROLEUM	03/16/2015	3,108.36
58663	MILLER, KATE	03/16/2015	542.47
58664	NETCHEMIA	03/16/2015	1,654.00
58665	NORTHWEST MARITIME CENTER	03/16/2015	875.00
58666	OFFICE DEPOT	03/16/2015	89.15
58667	OLYMPIC SPRINGS	03/16/2015	64.52
58668	OLYMPIC PENINSULA CONSULTANTS	03/16/2015	1,231.50
58669	OSPI	03/16/2015	1,167.78
58670	PACIFIC OFFICE EQUIPMENT	03/16/2015	2,666.15
58671	PANE D/AMORE	03/16/2015	49.00
58672	PENINSULA PEST CONTROL	03/16/2015	310.65
58673	PLATT	03/16/2015	270.82
58674	PUGET SOUND JNT PURCHASING COO	03/16/2015	300.00
58675	Rublaitus, Tanya K	03/16/2015	40.25
58676	SAFEWAY	03/16/2015	111.71
58677	SAXTON BRADLEY INC	03/16/2015	13,864.80
58678	SCHOLASTIC INC	03/16/2015	283.56
58679	SERVPRO OF CLALLAM AND JEFFERS	03/16/2015	11,631.76
58680	SHAUGHNESSY MARINA DBA	03/16/2015	555.50
58681	Shively, Leslie L	03/16/2015	128.16
58682	SOUND EXPERIENCE	03/16/2015	3,000.00
58683	SOUND PUBLISHING INC	03/16/2015	123.75
58684	Stengel, Dorothy H	03/16/2015	182.47
58685	TERRY'S LOCK & SAFE INC	03/16/2015	56.68
58686	TIGER DIRECT INC	03/16/2015	3,215.00
58687	UNIVERSITY OF TORONTO PRESS	03/16/2015	155.36
58688	UPS STORE	03/16/2015	20.64
58689	WASH STATE FERRIES	03/16/2015	539.90
58690	WESTBAY AUTO PARTS	03/16/2015	5.50
58691	Wilson, Scott Randall	03/16/2015	97.17
58692	WSSDA	03/16/2015	24.00

73 Computer Check(s) For a Total of 157,125.93

PORT TOWNSEND SCHOOL DISTRICT NO. 50

Payroll for the month of February, 2015

We, the undersigned, do hereby certify that the foregoing payroll is just, true and correct; that the persons whose names appear hereon actually performed services as stated for the time shown, and that the amounts are actually due and unpaid,

_____
Clerk of District

Approved gross in the sum of $ 658,544.53 Employee Gross

243,832.96 Employer Contribution

_____ Payroll Adjustment*

902,377.49 Total Distribution

DIRECTORS:

_____ _____

_____ _____

_____ _____

*Provision is made for the adjusting of employee and employer benefits as necessary.

School Facilities and Organization
INFORMATION AND CONDITION OF SCHOOLS
Building Summary Report 2014-2015

MAIN BUILDING - BLUE HERON MIDDLE SCHOOL, PORT TOWNSEND SCHOOL DISTRICT

Building Details

BUILDING PROFILE TYPE	Middle/Junior High School - Single Story
NUMBER OF FLOORS	1
BUILDING BOARD ACCEPTANCE DATE	10/2/1995
BUILDING CHARACTERISTICS	Occupied
CERTIFIED BY BCA	Yes
SCAP REQUIREMENTS	Asset Preservation Program (APP)
CONDITION RATING	**88.29% Good**

Building Inventory

YEAR	DISTRICT ASSIGNED AREA	DISTRICT ASSIGNED AREA USE	GROSS BUILDING SQ FT	GROSS INSTRUCTIONAL SQ FT	STATE ASSISTED SQ FT	ORIGINAL OCCUPANCY DATE	ORIGINAL BOARD ACCEPTANCE DATE
1995	Main Building	Locker Room, Central Kitchen, Maintenance and Operations, Science, Library, Administrative, Music, Cafeteria, Classroom, Gymnasium, Commons	60,124	60,124	0	9/4/1995	10/2/1995
		Building Totals	**60,124**	**60,124**	**0**		

Building Components

SUB-ASSEMBLY	COMPONENT	COMPONENT CODE	MAINTENANCE PRIORITY	CONDITION RATING
Foundations	Standard Foundation	A1010		90.00% Good
Slabs on Grade	Standard Slabs on Grade	A4010		90.00% Good
Water and Gas Mitigation	Building Subdrainage	A6010		90.00% Good
Superstructure	Roof Construction	B1020		90.00% Good
Exterior Vertical Enclosures	Exterior Walls	B2010		90.00% Good
	Exterior Windows	B2020		90.00% Good

MAIN BUILDING - BLUE HERON MIDDLE SCHOOL, PORT TOWNSEND SCHOOL DISTRICT

Building Components

SUB-ASSEMBLY	COMPONENT	COMPONENT CODE	MAINTENANCE PRIORITY	CONDITION RATING
Exterior Vertical Enclosures	Exterior Doors and Grilles	B2050		90.00% Good
	Exterior Louvers and Vents	B2070		90.00% Good
Exterior Horizontal Enclosures	Roofing	B3010		90.00% Good
	Additional Comments:	Roof cleaned & minor repairs made in 2014. Roof replacement planned for 2020.		
	Corrective Actions:			
	Roof Appurtenances	B3020		90.00% Good
	Horizontal Openings	B3060		90.00% Good
	Overhead Exterior Enclosures	B3080		90.00% Good
Interior Construction	Interior Partitions	C1010		62.00% Fair
	Deficiencies:	Other		
	Causes:	Other		
	Deficiency Comments:	Some partitions don't work.		
	Corrective Actions:	Repair		
	Interior Windows	C1020		90.00% Good
	Interior Doors	C1030		90.00% Good
	Interior Grilles and Gates	C1040		90.00% Good
	Suspended Ceiling Construction	C1070		90.00% Good
Interior Finishes	Wall Finishes	C2010		90.00% Good
	Corrective Actions:	Paint		
	Interior Fabrications	C2020		90.00% Good
	Flooring	C2030		90.00% Good

MAIN BUILDING - BLUE HERON MIDDLE SCHOOL, PORT TOWNSEND SCHOOL DISTRICT

Building Components

SUB-ASSEMBLY	COMPONENT	COMPONENT CODE	MAINTENANCE PRIORITY	CONDITION RATING
Interior Finishes	**Deficiencies:**	Deterioration, Settlement		
	Causes:	Irregular Surface		
	Additional Comments:	New carpet installed in hallways.		
	Location Comments:	Hallway VCT installed 6 yrs ago has gaps at joints.		
	Deficiency Comments:	Settlement/moisure has cracked some VCT in approximately 2% of building.		
	Corrective Actions:	Replace tiles.		
	Ceiling Finishes	C2050		62.00% Fair
	Deficiencies:	Other		
	Causes:	Cracking, Peeling, Flaking, Surface Appearance		
	Deficiency Comments:	Stains and some warping on a few ceiling tiles.		
	Corrective Actions:	Paint and patch where needed. Replace stained tiles.		
Plumbing	Domestic Water Distribution	D2010		90.00% Good
	Deficiencies:	Lack of Insulation, Other		
	Causes:	Other		
	Additional Comments:	One new water heater installed 2014.		
	Corrective Actions:	One water heater approaching useful life.		
	Sanitary Drainage	D2020		90.00% Good
	Building Support Plumbing Systems	D2030		90.00% Good
HVAC	Facility Fuel Systems	D3010		90.00% Good
	Heating Systems	D3020		90.00% Good
	Facility HVAC Distribution Systems	D3050		90.00% Good

MAIN BUILDING - BLUE HERON MIDDLE SCHOOL, PORT TOWNSEND SCHOOL DISTRICT

Building Components

SUB-ASSEMBLY	COMPONENT	COMPONENT CODE	MAINTENANCE PRIORITY	CONDITION RATING
HVAC	**Additional Comments:**	Typical condition for age of system.		
	Ventilation	D3060		90.00% Good
	Additional Comments:	Typical condition for age of system.		
Fire Protection	Fire Suppression	D4010		90.00% Good
	Fire Protection Specialties	D4030		90.00% Good
Electrical	Facility Power Generation	D5010		90.00% Good
	Electrical Services and Distribution	D5020		90.00% Good
	General Purpose Electrical Power	D5030		90.00% Good
	Lighting	D5040		90.00% Good
Communications	Data Communications	D6010		100.00% Excellent
	Voice Communications	D6020		100.00% Excellent
	Additional Comments:	New Voipe system installed in 2015.		
	Audio-Visual Communications	D6030		90.00% Good
	Distributed Communications and Monitoring	D6060		90.00% Good
	Additional Comments:	New Voipe system installed in 2015. Speaker upgrades in process.		
Electronic Safety and Security	Access Control and Intrusion Detection	D7010		62.00% Fair
	Deficiencies:	Equipment Obsolescence		
	Causes:	Other		
	Corrective Actions:	Very little coverage		
	Electronic Surveillance	D7030		90.00% Good
	Deficiencies:	Other		

MAIN BUILDING - BLUE HERON MIDDLE SCHOOL, PORT TOWNSEND SCHOOL DISTRICT

Building Components

SUB-ASSEMBLY	COMPONENT	COMPONENT CODE	MAINTENANCE PRIORITY	CONDITION RATING
Electronic Safety and Security	**Causes:**	Blind Zones		
	Additional Comments:	There are only two security cameras in the school. Both have recently been installed 2014/2015.		
	Corrective Actions:	Very little coverage		
	Detection and Alarm	D7050		62.00% Fair
	Deficiencies:	Equipment Obsolescence		
	Causes:	Other		
	Corrective Actions:	Very little coverage		
Integrated Automation	Integrated Automation Facility Controls	D8010		100.00% Excellent
Equipment	Commercial Equipment	E1030		90.00% Good
	Institutional Equipment	E1040		90.00% Good
	Entertainment and Recreational Equipment	E1070		62.00% Fair
	Deficiencies:	Other		
	Causes:	Other		
	Deficiency Comments:	Some systems out of date due to age of system & normal wear & tear.		
	Other Equipment	E1090		90.00% Good
Furnishings	Fixed Furnishings	E2010		90.00% Good
	Additional Comments:	Typical wear & tear for the age of the building.		
	Movable Furnishings	E2050		90.00% Good
	Additional Comments:	Typical wear & tear on furniture for age of building.		

SOEP Das Sozio-oekonomische Panel

591 2013

SOEPpapers
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How learning a musical instrument affects the development of skills

Adrian Hille and Jürgen Schupp

DIW SOEP

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How learning a musical instrument affects the development of skills[☆]

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Abstract

Despite numerous studies on skill development, we know little about the causal effects of music training on cognitive and non-cognitive skills. This study examines how long-term music training during childhood and youth affects the development of cognitive skills, school grades, personality, time use and ambition using representative data from the German Socio-Economic Panel (SOEP). Our findings suggest that adolescents with music training have better cognitive skills and school grades and are more conscientious, open and ambitious. These effects do not differ by socio-economic status. Music improves cognitive and non-cognitive skills more than twice as much as sports, theater or dance. In order to address the non-random selection into music training, we take into account detailed information on parents, which may determine both the decision to pursue music lessons and educational outcomes: socio-economic background, personality, involvement with the child's school, and taste for the arts. In addition, we control for the predicted probability to give up music before age 17 as well as the adolescent's secondary school type. We provide evidence that our results are robust to both reverse causality and the existence of partly treated individuals in the control group.

JEL classification: I21, J24, Z11

Keywords: Music, cognitive and non-cognitive skills, educational achievement, SOEP

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September 25, 2013

1. Introduction

Publicly subsidized projects offering extracurricular music lessons are increasingly popular among policy makers. Having originated in Venezuela with the famous *El Sistema* (FundaMusical, 2013), such projects exist in many countries today. In Germany, the Federal Ministry of Education has launched *Kultur macht stark* (Culture makes you strong), a new initiative with 50 million euros of funding per year (BMBF, 2012). On the regional level, the government of North Rhine-Westphalia provides annual support to the project *Jedem Kind ein Instrument* (An instrument for every child) in the amount of 10 million euros (MSW, 2007). As stated in their official descriptions, these projects aim to improve educational opportunities, in particular for disadvantaged children and youth (e.g. BMBF, 2013).

The aim of reducing inequalities in educational opportunity through social policies promoting music education implicitly relies on the assumption that music fosters the development of cognitive and non-cognitive skills. The importance of these skills for educational and labor market success has been widely recognized (e.g. Almlund et al., 2011; Heckman and Kautz, 2012; Heckman et al., 2006; Heineck and Anger, 2010). According to findings on the "technology of skill formation", skills developed at younger ages promote later skill attainment (Cunha and Heckman, 2007; Cunha et al., 2010). In particular, the productivity of investments in subsequent stages increases as a result of previously acquired skills. Moreover, sociologists highlight that cultural capital – the familiarity with the codes and modes of conduct of particular social environments – influences success in education and the labor market (Bourdieu and Passeron, 1990; Lareau and Weininger, 2003; Lareau, 2011) and works as a mechanism for the reproduction of social inequality.

Numerous studies argue that music affects a variety of indicators of skill development (a summary can be found in Rickard et al., 2012). They argue that music induces brain reactions that stimulate the development of cognitive skills (Schellenberg, 2011). Moreover, both cognitive skills and school grades may be improved through the influence of music education on personality traits such as conscientiousness, openness, and perceived control (Schumacher, 2009). A positive effect on the latter may also lead the musically trained to be more ambitious. Lareau (2011) highlights the fact that music practice, similar to other extracurricular activities, enhances educational success by sending positive signals to school teachers and by fostering children's acquisition of some elements of cultural capital. In addition, when carried out in a group, music education can promote the development of social skills as well as the sense of belonging to a group. Finally, music – like other extracurricular activities – consumes time, which is then no longer available for other potentially beneficial or harmful activities (Felfe et al., 2011). Of course, extracurricular activities other than music can influence some of these outcomes similarly or even more effectively. Part of the challenge is to distinguish their differential effect.

The assumed positive effects of music training, which even motivate social policy-makers, stand in contrast to a lack of causal research on this topic. Observational studies on the effects of music education face the difficulty that the decision to learn a musical instrument is not made randomly. Causal studies must distinguish the effect of music from outcome differences related to observed and unobserved background characteristics. So far, only a small number of

experimental studies are able to identify true causal effects. For example, Schellenberg (2004) finds that music lessons enhance general intelligence of children, but do not affect their social skills. However, his study participants received music lessons for one year only.

This paper examines the effects of learning a musical instrument during childhood and adolescence on the development of cognitive and non-cognitive skills. We investigate the effect of long-term music training by restricting the treatment group to those who have received music lesson outside of school at least from age 8 to 17. Outcomes are measured at age 17 and include cognitive skills, school marks, personality traits (conscientiousness, openness, agreeableness, and perceived control), time use, ambition and optimism about future success.

We address the non-random selection into music practice by controlling for a large number of parental background characteristics: Parental income and education, household composition, the parents' personality and school involvement as well as the parents' taste for the arts. We take these variables into account using propensity score matching. In additional robustness checks, we also control for the predicted probability to give up music practice before age 17 as well as the type of secondary school which the adolescent attends.

Our findings suggest that learning a musical instrument during childhood and adolescence increases cognitive skills by one fourth and school grades by one sixth of a standard deviation. Moreover, adolescents with music training are more conscientious, open and ambitious. Differences by socio-economic status are small. The effects of music are much larger than those of alternative activities such as sports, theater and dance. For example, the effect of music on cognitive skills is more than twice as large as the effect of sports, an activity which has been found an important input for skill development (Barron et al., 2000; Felfe et al., 2011; Pfeifer and Cornelissen, 2010; Stevenson, 2010). Our estimates on the effects of sports are consistent with previous findings.

With this paper, we make six contributions to the literature. First, our study approaches causality better than previous observational studies. While we cannot entirely exclude the possibility that unobserved confounders drive our results, we account for more background characteristics than others have done before. Moreover, we take into account adolescents' secondary school type as well as their probability to give up music before age 17, which we can predict within a subsample. Our results are also robust to reverse causality and the existence of partly treated individuals in the control group.

Second, we use representative data for Germany to investigate our research question. This makes our results more generalizable than the experimental work which has been carried out so far. In particular, we are the first to use the German Socio-Economic Panel (SOEP) to study this question, which contains parental background information even from when the adolescent was still a child.

Third, our study examines the effects of music on more outcomes than previous studies have looked at. In addition to cognitive an non-cognitive skills, we observe school marks, time use and ambition.

Fourth, contrary to previous observational and experimental studies in this field, we examine the effects of long-term exposure to music. We investigate the development of skills among adolescents who have taken instrumental music lessons at least from age 8 to 17.

Fifth, we examine the heterogeneity of the effect with respect to socio-economic status. So-

cial policies promoting music education can only be effective if their treatment not only affects those from higher socio-economic backgrounds, who are likely to be involved in education-oriented leisure activities in any case. Indeed, we find that the effects of our treatment do not differ by socio-economic status.

Finally, we compare the effect of music to the effect of alternative leisure activities such as sports and dance. In most previous studies on leisure activities, such distinctions are not explicitely made. We find that the effect of music is much stronger than that of sports or dance.

Next, we describe why learning a musical instrument might influence educational opportunities. After a short summary of data and methodology, we present our findings. The study concludes with a discussion on the caveats of a causal interpretation of our results.

2. Hypotheses and previous literature

Numerous studies suggest that learning a musical instrument affects a variety of outcomes related to educational achievement (e.g., as summarized in Rickard et al., 2012). While most of these studies do not detect causal effects, they describe the mechanisms by which music could affect these outcomes. Discussing these mechanisms allows us to develop the hypotheses that will guide our empirical estimations.

The positive effect of music training on cognitive skills is the only effect which can be supported by previous causal evidence. In his experimental study, Schellenberg (2004) randomly assigned 132 children to three treatment groups. Each of them received piano, voice, or theater lessons for a year. Compared to both the theater and the control group, children receiving piano or voice lessons increased their IQ considerably. While Schellenberg's study participants are not a representative sample of all children, random allocation to treatments justifies a causal interpretation of his findings. Still, the question of what mechanism drives this effect remains open. Schellenberg (2011) considers three channels by which music potentially improves cognitive development. On the one hand, it might affect subdomains of cognitive functioning such as auditory temporal processing or visual memory. Alternatively, Schellenberg (2011) suggests that music training might affect intelligence by stimulating the executive function. The executive function represents judgment and problem-solving capacities, which are particularly malleable during childhood and correlated with IQ. However, his study does not confirm the executive function as a mediator of the effect of music on intelligence. As a third mechanism, Schellenberg (2011) considers that music may improve intelligence through its effect on non-cognitive skills or personality. In particular, studying a musical instrument requires regular training and thereby forces students to be self-disciplined, persistent, and involved (Covay and Carbonaro, 2010). As a consequence, this may improve conscientiousness, a dimension of the Big Five personality traits.

Other personality traits are likely to be affected by music as well. For example, we expect an effect on openness – another dimension of Big Five – given that children are regularly exposed to different types of music in music lessons than they usually listen to.[1]

[1]Some psychologists argue that personality is genetically determined and cannot be modified (Pervin et al.,

According to Schumacher (2009), learning a musical instrument improves the ability to judge one's understanding and progress. Musical performance in front of an audience allows the musician to verify whether or not she was able to interpret the piece correctly. Moreover, music lessons can teach children to judge their ability to learn as well as their progress in learning. Schumacher (2009) calls this ability a positive self-concept. Similarly, Covay and Carbonaro (2010) point out that learning a musical instrument teaches a child to handle success and failure. A possible way to measure these potential improvements is to examine how music affects perceived control. Perceived control indicates the extent to which someone believes that she or he can influence their own destiny.[2] If music training increases perceived control by improving the individual's judgement of his or her ability, success, and progress (Schumacher, 2009), we also expect these children to be more ambitious.

Intelligence, perceived control, and ambition are not the only reasons why adolescents with music training may be more successful in their educational achievement. Learning a musical instrument is also likely to send a positive signal to school teachers and potential employers (Spence, 1973). If a teacher knows about a student's after-school musical activities, that teacher may consider the student more competent than she or he actually is. This could lead the teacher to reward the perceived rather than proven competence with a better mark than actually appropriate. Indeed, in her qualitative study of children from different social backgrounds, Lareau (2011) reports that teachers listen more carefully to children talking about their organized free-time activities than to children talking about a game they played with neighbor children on the street. Such signaling effects are likely to translate into better marks, especially in more subjectively graded fields such as languages as well as in oral examinations, in contrast to in mathematics and written examinations (Andersen and Hansen, 2012). Similarly, being enrolled in music or other extracurricular activities provides a measurable advantage in job applications (Rivera, 2011).[3]

In addition to improvements in cognitive skills, the development of personality traits as

2005), but the personalities of children have been shown to be less stable than those of adults. Heckman and Kautz (2012) discuss the stability of personality traits and argue that conscientiousness tends to rise over the life cycle, citing examples of early childhood interventions in which personality was modified successfully, such as the Perry preschool project. Heckman and Kautz (2012) highlight that the long-lasting positive effect of these programs was attained through the program's positive impact on personality. Non-cognitive skills have proven to be particularly malleable at younger ages (Specht et al., 2011; Cobb-Clark and Schurer, 2012; Donnellan and Lucas, 2008). Hence, interventions like practicing a musical instrument may potentially also contribute to child development. Contrary to the Big Five personality measures, perceived control can be considered as modifiable over time (Cobb-Clark and Schurer, 2012).

[2]While the development of a positive self-concept might increase one's perceived control, learning a musical instrument might also be correlated with lower perceived control. Children learning a musical instrument often come from families in which parents intervene strongly into their children's schedules and choices of free-time activities (Lareau, 2011). Hence, a potential positive effect on perceived control might be hidden due to a systematically lower level of perceived control among the non-random sample of children make music.

[3]According to Rivera (2011), in addition to being perceived as having superior social skills, job candidates who are involved in extracurricular activities are considered by potential employers to be more interesting than candidates without outside interests. Such candidates are believed to be more pleasant coworkers. Moreover, employees who are involved in other activities in their free time are assumed by employers to have superior time management skills and a higher work ethic.

well as favoritism due to signaling effects, learning a musical instrument may stimulate cultural capital. Cultural capital is the ability to be familiar with the codes and mods of conduct of a particular social environment. It is one of the important causes of social reproduction (Bourdieu and Passeron, 1990; Lareau and Weininger, 2003) and has important effects on educational achievement (Tramonte and Willms, 2010). Music training usually takes place alone or in a small group. More than in regular school classes, exclusive relations with as well as attention from the instructor teaches children and adolescents to interact with a person of authority. Besides learning to play their instrument, adolescents are likely to acquire the capacity to express their interests and rights in an adequate manner, a qualification which Lareau (2011) designates as "sense of entitlement".

Moreover, when music classes are taught in a group or an orchestra, students closely and directly interact with their peers. Typically, such interactions considerably differ from usual classroom interactions. On the one hand, students have to learn to take over someone else's perspective, putting their own interests back for the benefit of the common goal. With other words, they have to learn to see their fellow students as partners rather than competitors (Schumacher, 2009). On the other hand, in particular in projects proposing access to music education for all, children playing in a group learn to interact with fellow students coming from various social backgrounds (Covay and Carbonaro, 2010). In his experimental study, Schellenberg (2004) finds that music training does not improve social skills, while theater does. We approximate the measurement of improved social skills by examining the treatment effect on agreeableness.

Beyond these advantages in terms of skills and education, music training might enhance social well-being by giving individuals a sense of belonging to a group. In addition to physical well-being, Lindenberg (1989) and Ormel et al. (1999) consider social well-being as a dimension that human beings aim to maximize. It consists of three facets: status, behavioral confirmation, and affection. Music education could play a role in status attainment. According to Ormel et al. (1999), the status is the relative ranking compared to other people. It is attained, for example, through "occupation, life style, [and] excellence in sports" (Ormel et al., 1999, p. 67). Not only sports, but also playing a musical instrument could therefore contribute to higher status attainment. Contrary to the previously discussed external signal, which serves as an indicator of higher skills to other people, playing a musical instrument signals affiliation to a particular social group and thereby raises the well-being of the individual him- or herself. Indeed, Menninghaus (2011) relates participation in the arts to the costly signal theory. He states that the possession of artistic objects or engagement in cultural activities are used to signal one's affiliation to a certain social status. Menninghaus (2011) highlights parallels between such a costly signal and an evolutionary interpretation of the role of the arts for human societies.

Finally, learning a musical instrument could influence educational achievement through its effect on time use. Three arguments are conceivable. First, musical practice might enhance school performance, because the use of free time to play an instrument reduces the time available for potentially less productive activities such as watching TV. Second, time spent learning an instrument is time which is no longer available for studying, such that music practice could have a negative effect on school performance (Felfe et al., 2011). Third, as Lareau (2011) argues, children participating in extracurricular activities learn to better manage their learning

Table 1 – *Hypotheses: Potential effects of music training*

Hypothesis	**Mechanism**
Cognitive skills	
→ Improved cognitive skills	Influence on subdomains of cognitive function, executive function or via non-cognitive skills (Schellenberg, 2004, 2011)
Non-cognitive skills	
→ Increased conscientiousness	Music requires self-discipline (Schumacher, 2009)
→ Higher perceived control	Judge ability, develop positive self-concept (Schumacher, 2009)
→ Increased openness	Contact with classical music
→ Increased ambition	Judge own ability, success and progress (Schumacher, 2009)
School achievement	
→ Improved school grades	Positive signal to school teachers (Lareau, 2011), improved cognitive skills
Cultural and social capital	
→ Enhanced cultural capital	Interaction with teacher in small group (Lareau, 2011)
→ Improved social skills	Interaction with peers and teachers (Schumacher, 2009)
→ Higher social well-being	Belonging to a group (Ormel et al., 1999; Menninghaus, 2011)
Time use	
→ Changes in time use	Crowding out of positive or negative activities (Felfe et al., 2011), structure learning and time schedule (Lareau, 2011)
Inequality	
→ Stronger effects for low SES	Efficiency of investment (Heckman and Masterov, 2007), cultural mobility (DiMaggio, 1982)
→ Stronger effects for high SES	Cultural reproduction (Bourdieu, 1986)

processes and time schedules. Hence, study time could be used more efficiently and therefore school performance might improve even though less time is available for studying.

Estimating the mean effect of learning a musical instrument might hide important heterogeneities. Policies such as those mentioned above are aimed primarily at children from disadvantaged social backgrounds. Heckman and Masterov (2007) point out that investments in children from families with a lower socio-economic status are among the rare policies that do not involve a trade-off between efficiency and fairness. In the same sense, DiMaggio's (1982) cultural mobility hypothesis suggests that children from disadvantaged social backgrounds benefit particularly from music education, because these have a higher potential benefit from such education as a form of compensation for missing educational inputs from the children's families. In contrast, Bourdieu's (1986) cultural reproduction hypothesis argues that richer and more educated parents have access to better quality extracurricular activities, which stimulate skill development more successfully.

Besides understanding the effects of leisure activities on skill development, further research is needed to understand the extent to which these activities can act as substitutes. Some of the abovementioned effects are likely to result from extracurricular activities other than music as well. Several studies show the benefits of athletic participation during youth (Barron et al.,

2000; Felfe et al., 2011; Pfeifer and Cornelissen, 2010; Stevenson, 2010). Schellenberg (2004) does not detect improvements in cognitive skills among individuals with theater lessons. Covay and Carbonaro (2010) study the general effects of extracurricular activities based on the assumption that all such activities contribute to the development of cognitive and non-cognitive skills. In this paper, we give evidence on differential effects by comparing music to sports, theater and dance, as described below.

3. Data

The German Socio-Economic Panel study (SOEP) is to our knowledge currently the best available longitudinal data set for studying the effects of learning a musical instrument. First, it contains a detailed assessment of the intensity and duration of music activities for representative youth cohorts (Schupp and Herrmann, 2009). Second, the SOEP measures a large variety of outcomes such as school results, cognitive skills, personality, time use, and ambition. Third, given that it is a household rather than an individual survey, the SOEP allows us to directly observe numerous parental background characteristics (Wagner et al., 2007). In particular, we are able to measure the parents' socio-economic background, personality, involvement in the child's school success, leisure time use as well as taste for the arts. Moreover, due to the longitudinal nature of the survey, these variables are available for when the adolescent was still a child.

The SOEP contains a detailed assessment of music activities during youth. At the age of 17, young adults answer the following five questions (Weinhardt and Schupp, 2011):

⇒ Do you play a musical instrument or pursue singing seriously? (Yes or no)

If the answer is yes, the following further questions are asked:

1. What type of music do you make? (Classical, Pop/Rock/etc or Folk music)
2. Do you do this alone or in some sort of group? (Alone/with teacher, in an orchestra/choir, in a band or in another type of group)
3. How old were you when you started? (Age)
4. Do you take or have you ever taken music lessons outside of school? (Yes or no)

With these answers, it is possible to construct a variety of treatment indicators. In our main specification, we consider those individuals to be musically active who have played a musical instrument at least between age 8 and 17, and who take music lessons outside of school. Thus, rather than simply studying adolescents who claim to be active in music, we make additional requirements on duration and intensity. This allows us to examine the effect of long-term exposure to music training. Moreover, at the age of 8 the decision to take up music lessons is strongly influenced by the parents, for whom we observe a large number of background characteristics. Finally, taking lessons outside of school is an indicator of a more serious involvement with the activity, because it excludes those who make music only occasionally.

The only other extracurricular activity which is assessed in similar detail in the SOEP Youth Questionnaire is sports. This will allow us to compare our results to the alternative treatment

of doing sports regularly. For further activities, we only know the frequency with which they are carried out. In particular, we will compare the effects of music training to the effects of playing theatre or dancing at least weekly.

All outcomes examined in this study were taken from the SOEP Youth Questionnaire as well and are thus measured at the age of 17. In particular, we examine the effect of music training on cognitive skills, school grades, personality, ambitions and time use.

Cognitive skills have been measured since 2006 with a standardized test. This test consists of three subscores: analogies, figures, and mathematics operators (Schupp and Herrmann, 2009). Good verbal knowledge is indicated by high scores for Analogies, where respondents have to identify correct word pairs. To get a good score in Figures, respondents have to identify the correct symbol continuing a given row of symbols. Similarly, the test of mathematics ability requires individuals to insert operators in incomplete mathematical computations. In order to facilitate the interpretation of cognitive skills, all results were normalized. Please refer to Table A.6 in the appendix for more details on these assessments.

In addition to directly testing their cognitive skills, the SOEP Youth Questionnaire asks young adults about their latest school grades in German, mathematics, and their first foreign language. Due to fundamental differences in educational programs, grades are not easily comparable between the three German secondary school types (Hauptschule, Realschule, Gymnasium). To facilitate comparisons, we normalize all school grades within each type of secondary school.

The SOEP Youth Questionnaire investigates various dimensions of personality using simplified psychologically validated items to which respondents state their level of agreement on a Likert scale. For our study, conscientiousness, openness, and agreeableness – three dimensions of the Big Five personality traits (McCrae and Costa, 1999; Lang et al., 2011) – seem particularly interesting. Moreover, our hypotheses suggest that practicing a musical instrument may affect perceived control. Someone is characterized by a high level of perceived control if she or he believes to be able to influence their own destiny (Specht et al., 2013). For each dimension, we use the average answer among all items. For detailed descriptions of the items, please refer to Table A.6 in the appendix.

In addition to assessing current skills and personality, the SOEP Youth Questionnaire asks young adults about their plans and worries for the future. In this study, we are interested in the young adult's plans to obtain an upper secondary school degree (Abitur) as well as a university degree. Moreover, respondents are asked to estimate the probabilities to find a job in their desired occupation and to be successful in their job. In order to be able to interpret the magnitude of potential effects, we normalize these estimated probabilities.

Finally, a measure indicating whether the individual watches TV and reads daily will allow us to examine how learning a musical instrument affects the adolescent's use of leisure time.

Due to its longitudinal nature and household dimension, the SOEP contains rich background information on each adolescent's family as well as information on the individual's childhood. This is important because families with children who learn a musical instrument differ strongly from others. In addition to the standard socio-economic characteristics of the parents such as education, income, and household composition, we observe some important aspects that are likely to influence the decision to enroll the child into music lessons. In particular,

Table 2 – *Sample size by treatment status*

	Treatment		Control		Total	
	Nb	%	Nb	%	Nb	%
Main sample[1]						
All	372	11.0	2,997	89.0	3,369	100.0
Girls	238	14.3	1,430	85.7	1,668	100.0
Boys	134	7.9	1,567	92.1	1,701	100.0
Low and medium socio-economic status (SES)	102	5.4	1,783	94.6	1,885	100.0
High socio-economic status (SES)	270	18.2	1,214	81.8	1,484	100.0
Sample for cognitive skills[1]						
All	212	11.8	1,587	88.2	1,799	100.0
Girls	135	15.7	723	84.3	858	100.0
Boys	77	8.2	864	91.8	941	100.0
Low and medium socio-economic status (SES)	62	6.2	936	93.8	998	100.0
High socio-economic status (SES)	150	18.7	651	81.3	801	100.0
Sample for Big 5 personality traits[1]						
All	230	13.0	1,541	87.0	1,771	100.0
Girls	136	16.1	709	83.9	845	100.0
Boys	94	10.2	832	89.8	926	100.0
Low and medium socio-economic status (SES)	69	7.1	909	92.9	978	100.0
High socio-economic status	161	20.3	632	79.7	793	100.0

[1] The main sample was used to examine the effects of music training on school grades, perceived control, time use, and ambition. Sample sizes are smaller for cognitive skills and the Big 5 personality traits as these outcomes were only measured since 2006.

Source: SOEP v29 (2001-2012 pooled), own calculations. Definition of treatment: Have music lessons at least between age 8 and 17. Definition socio-economic status: Low SES: Mother has medium secondary school degree or less, High SES: Mother has upper secondary school or university degree.

our data contain the parents' personality, involvement in the child's education as well as taste for the arts. For all parental variables, we use observations on the mother. If not available, we replace them with those for the father. Time-varying variables were measured when the child was aged 5 or, if not available, as early as possible.[4] Please refer to Table A.7 in the annex for a list of available control variables and when they were observed.

If we consider only individuals with no missing values on any treatment or control variable, we obtain a final sample of 3,369 observations out of the 3,954 who answered the SOEP Youth Questionnaire.[5] 372 of these were active in music according to our definition, which is that they took music lessons between the ages of 8 and 17. As Table 2 indicates, the share of children learning a musical instrument is considerably higher among girls and among children from high socio-economic status. Table 2 also shows that the sample is considerably smaller for cognitive skills and the Big Five personality traits. The reason is that these outcomes were measured only since 2006.

[4] About 60 percent of our sample entered the data after age 5 of the child. On average, individuals enter our sample when they are 8.2 years old. 53 percent of all treated enter the SOEP no more than three years after the start of the treatment.

[5] Out of the 585 observations with missing values, we lose only 169 due to missing values on the covariates. The other 416 observations are lost due to missings on the outcomes. The outcomes with by far the highest number of missings (about 170 each) are the foreign language mark and perceived control.

Table 3 – *T-test of differences in background characteristics between adolescents with and without music training*

	Treatment	Control	Difference/Std error
Parents' socio-economic status			
Monthly HH net income	3519	2491	1028*** (92)
University degree	0.63	0.28	0.35*** (0.02)
Parent with lower secondary school degree	0.23	0.43	-0.20*** (0.03)
Mother (father) has no degree	0.06	0.17	-0.11*** (0.02)
Vocational degree	0.64	0.70	-0.06** (0.03)
Migration background	0.10	0.19	-0.08*** (0.02)
Girl	0.64	0.48	0.16*** (0.03)
Oldest child in family	0.47	0.51	-0.05* (0.03)
Number of siblings	1.48	1.45	0.03 (0.06)
Rooms per person	1.28	1.12	0.15*** (0.02)
Rural area	0.20	0.26	-0.06** (0.02)
Parents' taste for the arts			
No cultural events	0.14	0.40	-0.26*** (0.03)
Monthly cultural events	0.27	0.10	0.17*** (0.02)
No artistic activities	0.33	0.58	-0.26*** (0.03)
Monthly artistic activities	0.35	0.18	0.18*** (0.02)
Appreciation for art (parents)	0.71	0.62	0.09*** (0.01)
Parents' involvement with school			
Parents care strongly about school achievement	0.26	0.25	0.01 (0.02)
Parents don't support learning	0.19	0.23	-0.04 (0.02)
Conflict with parents due to school results	0.48	0.55	-0.07*** (0.03)
Parents go to parent-teacher meeting	0.82	0.73	0.08*** (0.02)
Parents go to teacher's consultation hours	0.57	0.57	-0.00 (0.03)
Parents actively contact school teachers	0.25	0.22	0.04 (0.02)
Parents engage as parent representatives	0.32	0.15	0.17*** (0.02)
Parents don't engage with the child's school	0.06	0.10	-0.04** (0.02)
Parents' personality			
Conscientiousnes	0.86	0.87	-0.01** (0.01)
Extraversion	0.72	0.72	-0.00 (0.01)
Agreeableness	0.80	0.81	-0.01 (0.01)
Openness	0.69	0.65	0.03*** (0.01)
Neuroticism	0.58	0.59	-0.01 (0.01)
Number of observations	3369		

Source: SOEP v29 (2001-2012 pooled), own calculations. T-test of background characteristics between treatment and control group for the main sample. These differences are similar for the alternative samples used for cognitive skills and the Big Five personality traits (see Table 2), which can be provided by the authors on request. Definition of Treatment: Have music lessons at least between age 8 and 17. Significance levels: * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Table 3 shows that children who have learned a musical instrument differ strongly in almost all parental background characteristics from those who have not. Parents of the former earn more, are more educated, and are in closer contact with their child's school. Unsurprisingly, parents of musically active children also have a stronger taste for arts. They do not differ from other parents in personality traits, however.

4. Method

The decision to learn a musical instrument at age 8 or before is not made randomly. Given that we do not observe an exogenous variation in music lesson enrollment, our estimation relies on the conditional independence assumption. To estimate the effect of music on skill production, we assume that the decision to learn a musical instrument is uncorrelated with any unobserved characteristics which also have an influence on the development of skills, to the extent that they are uncorrelated with the observable characteristics we control for.

We estimate the effect of learning a musical instrument at least from age 8 to 17. Non-random selection into the treatment takes place at two stages. The decision to take up music lessons at an early age is likely to be strongly influenced by the parents. Therefore, our main specification takes into account a large number of parental background characteristics, which were measured when the adolescent was still young. Moreover, the likelihood to carry on music practice until the age of 17 might depend on further individual characteristics. In the sensitivity tests presented in Section 6, we deal with this second stage of selection by including the predicted probability to give up music as well as secondary school type as additional control (or mediator) variables.

We apply propensity score matching to account for the non-random decision to learn a musical instrument. The estimator was implemented in the following way. First, we estimate the probability of learning a musical instrument with a probit model. This probability is called the propensity score. Ideally, all variables influencing the decision to enroll in music lessons should be included in the selection model. Such a decision may be motivated by utility and taste. In addition to the direct utility or pleasure someone derives from making music, parents are likely to consider music training as an investment in their child's future success (Eide and Ronan, 2001; Lareau, 2011). Moreover, parents might enroll their child in music lessons because their own previous experience or habit of arts consumption has led them to develop a taste for the arts, as postulated in the learning-by-consuming approach (Garboua and Montmarquette, 1996). A preference for the arts also depends on the educational level if we assume that more highly educated people are more able to appreciate artistic production and consumption (Lunn and Kelly, 2009). Finally, more highly educated parents might be more likely to enroll their children in music lessons, because the artistic activities available to children are adapted to the tastes of the more highly educated (Lunn and Kelly, 2009).

In our selection model, we address these various motives in the following way. First, both utility-based and taste-based motivations are related to socio-economic status (Yaish and Katz-Gerro, 2012). We therefore control for parental education, qualifications, and nationality as well as household net income and the mother's age at birth. These variables are observed be-

fore the start of music training, when the child is aged five.[6] In addition, we include variables approximating the complications involved in enrolling a child in music lessons: the number of rooms per person at home and whether the household lives in a rural area. Moreover, parents are more likely to consider music lessons as an investment in children's future skills if they are more involved with the child's school activities in general. Therefore, we control for parents' contact with their child's school, which is approximated by the parents' disposition to help with homework, regularly meet the teacher, or be involved with the child's schooling in other ways.[7] Furthermore, the parents' personalities might play a role in their eagerness to invest in their child's skill development. To complete the selection model, we controlled for gender[8] and include sample[9], federal state, and birth-year fixed effects.

A table with all coefficients in the selection model can be found in the appendix (Table A.8). Overall, the selection model is able to explain about 20 percent of the variation in music practice, a share comparable to similar studies (for example Felfe et al., 2011). The coefficients are not surprising: Given that many of the characteristics explaining selection into music practice are correlated with each other, some of them are not statistically significant. According to recommendations from the statistics literature (Stuart, 2010), we include these insignificant coefficients in the selection model, as the aim is not to find the best model explaining the treatment but to balance observable (and if possible unobservable) characteristics in the treatment and control groups as much as possible.

Figure A.1 in the appendix shows common support between the treatment and control groups. The graphs indicate that untreated individuals (children who do not learn a musical instrument) are more likely to have a low propensity score, a further indicator that our selection model predicts musical practice quite well. Still, for the majority of the distribution, it is possible to find at least one corresponding control observation for each treated individual. With a caliper of 1 percent, only 3 out of 372 individuals in the treatment group and none in the control group remain unmatched.[10]

Once the propensity score is estimated and we have checked the degree of common support, we find matches in the control group for each treated individual. We use radius matching with a caliper of one percent, meaning that we give equal weight to each control observation having a propensity score in the range of one percent around the corresponding treated observation. The equal weights of the control observations being matched to one treated observation are chosen to sum to one.

[6] About 60 percent of all observations entered our data at a later age. For them, we measure parental background characteristics in the year of entry into the data. On average, the individuals of our sample enter the data when they are 8.2 years old.

[7] These variables were not observed when the child was young, but retrospectively reported by the adolescent herself at age 16. We cannot exclude the possibility that they are influenced by the treatment.

[8] Ideally, the selection model as well as the matching would be conducted separately for boys and girls. Unfortunately, reducing our sample by half would considerably reduce the match quality.

[9] The SOEP consists of several samples that were added over time in order to increase the overall sample size of the SOEP. In some of these samples, parts of the population were overrepresented (foreigners, families with many children, or high-income families).

[10] For the other samples, these numbers are: 7 out of 205 treated individuals (cognitive skills sample). 7 out of 223 individuals (Big 5 personality traits sample). See Table A.9 in the appendix.

After matching, we can check whether the covariates are balanced between the treatment and control groups. Table A.10 in the appendix shows that this is the case.

After adjustment by matching, we obtain the correlation between music practice and cognitive and non-cognitive skills in a weighted least squares regression. If our selection model is able to control for all relevant variables, we estimate the average treatment effect on the treated (ATT) (Imbens and Wooldridge, 2008). Algebraically, the average treatment effect on the treated is:

$$A\hat{T}T = \frac{1}{N_T}\sum_{i=1}^{N_T} T_i y_i - \frac{1}{N_C}\sum_{i=1}^{N_C}(1-T_i)\,\hat{w}_i y_i \tag{1}$$

where N_T and N_C are the number of treated and control observations, T_i is the treatment indicator, and y_i the outcome for individual i. Control observations are weighted with weight $\hat{w}_i$, which is obtained from matching as described above. Standard errors are estimated by bootstrap with 1999 replications.[11]

While similar results can be obtained with a simple linear regression model, propensity score matching has three advantages in our context. First, it allows us to use a large number of control variables even with a limited sample size, given that these control variables are summarized in the propensity score (Huber et al., 2013). Second, contrary to ordinary least squares, we do not need to assume a linear relation between music training and outcomes. Finally, in a setting where children learning a musical instrument are likely to have a significantly different family background than other children, the necessity to verify the existence of common support will provide us with some hint as to the comparability of treatment and control group (Imbens and Wooldridge, 2008). Given that our control group is ten times as large as the treatment group, we can find high-quality matches for most treatment observations.

Under the assumption of conditional independence, we can interpret the correlation between music and skills obtained with the matching estimator as a causal consequence of music practice (Imbens and Wooldridge, 2008). Given that we find matches in the control group for each treated observation, we estimate the average treatment effect on the treated. To obtain the average treatment effect, it would be necessary to separately estimate the average treatment effect on the non-treated by finding matches in the treatment group for each control observation. As the treatment group is ten times smaller than the control group, the quality of such matches would be low. To obtain robust results, we restrict our analysis to the average treatment effect on the treated.

5. Results

Table 4 shows outcome differences at age 17 between adolescents with and without music training. Differences are estimated applying propensity score matching to control for a large number of observed individual and family characteristics. We control for socio-economic background, the parents' personality, involvement with the child's school success, and taste for the arts.[12] The treatment is defined as having played a musical instrument from at least the age

[11] An analytical approximation would be possible, but is not recommended by Huber et al. (2012).

[12] An overview of all control variables can be found in Table A.7 in the appendix.

Table 4 – *Outcome differences between adolescents with and without music training or alternative activities*

	Effects of music training from age 8 to 17				Effects of alternative activities		
		Differences by socio-economic status (SES)			Sports	Dance	
	Full sample (1)	*Low SES* (2)	*High SES* (3)	*Difference* (4)	*Full sample* (5)	*Full sample* (6)	*Sample size*
Cognitive skills							
Average cognitive skills	0.24*** (0.08)	0.20 (0.14)	0.24** (0.10)	0.04 (0.17)	0.11 (0.07)	0.08 (0.06)	1,772
Analogies	0.28*** (0.09)	0.23 (0.14)	0.29** (0.11)	0.05 (0.19)	0.04 (0.07)	0.05 (0.06)	1,772
Figures	0.19** (0.09)	0.19 (0.13)	0.18 (0.11)	-0.02 (0.17)	0.04 (0.07)	0.06 (0.06)	1,772
Maths operators	0.11 (0.09)	0.07 (0.15)	0.12 (0.11)	0.05 (0.18)	0.15** (0.07)	0.07 (0.06)	1,772
School achievement[1]							
Average school grade	-0.17*** (0.06)	-0.17 (0.11)	-0.16** (0.08)	0.01 (0.14)	0.02 (0.05)	-0.05 (0.05)	3,364
German grade	-0.16** (0.06)	-0.11 (0.11)	-0.17** (0.07)	-0.06 (0.14)	0.04 (0.05)	-0.02 (0.05)	3,364
Foreign language grade	-0.14** (0.06)	-0.10 (0.11)	-0.15^{+} (0.08)	-0.05 (0.14)	0.10^{+} (0.05)	-0.01 (0.05)	3,364
Mathematics grade	-0.09 (0.07)	-0.17 (0.12)	-0.06 (0.08)	0.11 (0.15)	-0.08 (0.05)	-0.06 (0.05)	3,364
Personality							
Conscientiousness	0.28*** (0.09)	0.21 (0.15)	0.31*** (0.12)	0.10 (0.20)	-0.02 (0.07)	0.09 (0.07)	1,753
Openness	0.33*** (0.09)	0.39*** (0.14)	0.29** (0.12)	-0.10 (0.19)	-0.10 (0.07)	0.20*** (0.06)	1,753
Agreeableness	0.18^{+} (0.09)	0.19 (0.14)	0.17 (0.12)	-0.02 (0.18)	0.02 (0.07)	-0.09 (0.06)	1,753
Perceived control	0.07 (0.06)	0.16 (0.11)	0.03 (0.07)	-0.13 (0.14)	0.05 (0.05)	0.20*** (0.05)	3,364
Time use							
Watch TV daily	-0.13*** (0.03)	-0.09^{+} (0.05)	-0.14*** (0.04)	-0.05 (0.06)	0.01 (0.02)	-0.03 (0.02)	3,364
Read books daily	0.08** (0.03)	0.07 (0.05)	0.08^{+} (0.04)	0.02 (0.07)	-0.02 (0.02)	-0.04^{+} (0.02)	3,364
Ambition							
Aim Abitur	0.15*** (0.03)	0.21*** (0.05)	0.11*** (0.03)	-0.10 (0.06)	0.05** (0.02)	0.05** (0.02)	3,364
Aim university	0.18*** (0.03)	0.21*** (0.06)	0.16*** (0.04)	-0.06 (0.07)	0.04^{+} (0.02)	0.07*** (0.02)	3,364
Job success likely	0.07 (0.06)	0.08 (0.10)	0.06 (0.07)	-0.02 (0.12)	0.16*** (0.05)	0.14*** (0.05)	3,364
Desired profession likely	0.07 (0.06)	0.17^{+} (0.10)	0.03 (0.07)	-0.14 (0.12)	0.14*** (0.05)	0.09^{+} (0.05)	3,364

[1] Note that in Germany, better performance is rewarded with a lower school grade.

Source: SOEP v29 (2001-2012), own calculations. Column (1) shows the baseline results for the full sample. Columns (2) to (4) show differential effects by socio-economic status. Low SES: Mother has medium secondary school degree or less, High SES: Mother has upper secondary school or university degree. Colums (5) and (6) show the effect of alternative activities: Sports (since age 8 including the participation in competitions) and Dance (weekly). Propensity score matching is used to account for control variables (radius matching with caliper 0.01). The sample size is smaller for cognitive skills and some personality measures, as these have only been assessed since 2006. Standard errors in parentheses are clustered at the household level and estimated by bootstrap (1999 replications). Significance levels: $^{+}$ $p < 0.1$ ∗∗ $p < 0.05$ ∗∗∗ $p < 0.01$

of 8 to 17 and having taken music lessons outside of school. Our data allow us to consider as treated only those who have played music for a minimum number of nine years. We choose this restriction because we are interested in the long-term effects of music training. Implications of the treatment definition for a causal interpretation of our results are discussed in Section 6.

In each row, we estimate the effect of music on a different outcome. Outcomes are grouped into five categories: cognitive skills, school achievement, personality, time use and ambition. Differences in cognitive skills, school grades, personality, and optimism about future professional success are measured in terms of standard deviations. Differences in time use and educational ambition (whether the individual aims a higher secondary school or university degree) are stated in percentage points.[13]

Each column corresponds to a different set of estimations, which we discuss in the following. Column (1) represents the baseline specification. Here we examine outcome differences between adolescents with and without music training for the entire sample. The results indicate that a substantial part of these differences remain unexplained even after controlling for a large number of covariates. We can see that in the cognitive test, children who learned a musical instrument scored on average one fourth of a standard deviation higher than other children. This is more than twice the effect Felfe et al. (2011) found for sports participation. The difference is driven in particular by higher scores for word analogies and figures. Hence, verbal and spatial skills are possibly more strongly affected than mathematical abilities. In addition to advantages in cognitive skills, school grades of adolescents with music training are one sixth of a standard deviation above those of other students. Note that in Germany, the grading scale runs from 1 (highest possible score) to 6 (failing).

With respect to personality, adolescents with music training differ significantly as well. They are more than one fourth of a standard deviation more conscientious and open than others.[14] Learning a musical instrument is not associated with higher agreeableness. Finally, contrary to what one would expect, children who learn a musical instrument are not characterized by a higher perception of control.

If we look at time use and educational ambitions, we see systematic differences between the two groups as well. Children who learn a musical instrument are 13 percent less likely to watch TV every day. Moreover, they are 15 percent more likely to plan on obtaining an upper secondary school degree (Abitur) and 18 percent more likely to aim at attending university.

In the next step, we examine the heterogeneity of these outcome differences with respect to socio-economic background. We differentiate socio-economic background according to parental education, given that education is an important determinant of cultural taste (Lunn and Kelly, 2009) and correlated with income. We consider parents who have either no or up to a medium secondary school degree (Hauptschule or Realschule) as belonging to the lower socio-economic status group. Conversely, parents with either an upper secondary school or university degree are considered as having a higher socio-economic status. According to this definition, our sample contains 1885 individuals with low and 1484 individuals with high socio-

[13] Please refer to Table A.6 in the appendix for more details on the outcomes.

[14] The higher value for openness is at least partly related to the fact that one of the three items assessing openness deals with openness to artistic experiences.

economic status. Among the former, only 5.4 percent (102 adolescents) learn a musical instrument from age 8 to 17, while 18.2 percent (270 adolescents) of the latter group do so. Unfortunately it is not possible to further distinguish among children of low socio-economic status, because too few of them learn a musical instrument.

The effects of music training for adolescents of low and high socio-economic status, as well as the difference between these effects are shown in columns (2) to (4) of Table 4. Due to the small sample size, many coefficients in column (2) are not significant. Still, we observe that outcome differences between adolescents with and without music training are similar in magnitude, irrespective of socio-economic origin. The ambition to obtain an upper secondary school degree is the only outcome, which significantly differs between both socio-economic groups. The effect of music training on such ambitions is significant for all, but twice as large among adolescents of lower socio-economic status. Such a difference is not too surprising if we consider that already 66 percent of adolescents of high socio-economic status plan at attaining an upper secondary school degree, while only 31 percent of the other group does so. Hence, adolescents of lower socio-economic status have more to catch up.

An apparent question is whether the strong outcome differences between adolescents with and without music training are specific to music. With other words, do we observe similar outcome differences if we compare adolescents who engage in another type of leisure activity compared to those who do not? Columns (5) and (6) show that other activities can have positive effects as well, even though those of music training are likely to be stronger. We run the same estimations as the baseline specification presented in column (1) and replace music training from age 8 to 17 with alternative activities.

Column (5) shows the effects of being sporty, an activity which has been found beneficial in numerous studies.[15] In order to be comparable to music, we consider as treated those who have been sporty at least from age 8 to 17 and who have regularly participated in sports competitions. 507 individuals (15 percent) of our sample are active according to this definition. When it comes to cognitive skills, we approximately replicate the findings from Felfe et al. (2011). Sporty adolescents score about one tenth of a standard deviation higher, even though this result is not statistically significant in our analysis. Interestingly, the score in the maths operators test increases significantly due to sports participation, while it remained unchanged among those who are musically active. Moreover, sports does not seem to affect school marks and personality. We do, however, observe positive effects of sports on ambition. In particular, sporty adolescents are more optimistic about their future success, which was not the case for adolescents with music training.

In column (6), we investigate the outcome differences for individuals who play theater or dance at least weekly. This corresponds to 668 individuals (20 percent) of our sample.[16] According to our estimation, playing theater or dancing does not affect cognitive skills or school marks, a result which is in line with findings from Schellenberg (2004). However, dance and theater have strong effects on personality and ambition. If we can interpret our results as causal,

[15] See for example Felfe et al. (2011); Pfeifer and Cornelissen (2010); Barron et al. (2000); Stevenson (2010).

[16] Unfortunately, we cannot restrict this analysis to those individuals who have played theater or danced for a minimum number of years, as this information is not available in the SOEP.

playing theater and dancing increases openness and perceived control by one fifth, and conscientiousness by one ninth of a standard deviation. All four indicators of ambition moderately, but significantly increase as well.

The results presented in this section are robust to different treatment definitions, control variable specifications, and sample restrictions. For example, the results remain very similar if our treatment definition does not require a treated individual to take music lessons throughout the entire period from age 8 to 17. Including individuals who started music lessons at age 9 or 10 or even later does not fundamentally alter our results.[17] We consider the results for alternative activities presented in columns (5) and (6) as less reliable, given that control variables were specifically chosen to account for the non-random selection into music training. If the decision to engage in sports, theater and dance is determined by different factors, we might not sufficiently take them into account.

6. Discussion

Even after controlling for a large number of social background characteristics, we find strong differences in terms of cognitive and non-cognitive skills between adolescents who learned a musical instrument during childhood and those who did not. In order to interpret these differences as causal effects of music training, we must rely on the conditional independence assumption, exclude the possibility of reverse causality and make one further assumption on the existence of partly treated individuals in the control group. This section discusses these assumptions and the extent to which they are valid and can be tested.

Is the conditional independence assumption plausible? When applying propensity score matching, the average treatment effect on the treatment can be interpreted as a causal effect if the conditional independence assumption is valid. In this study, this means that given the control variables included in the selection model, enrollment in music lessons is as good as random. Such an assumption would be invalidated if unobserved characteristics influenced the decision to learn a musical instrument and also had an impact on the outcome variables of interest.

We define our treatment as learning a musical instrument at least from age 8 to 17. With this treatment definition, estimation biases resulting from selection into treatment can take place at two stages: The initial decision to take up music lessons and the decision not to give up until age 17.

We argue that our estimation satisfies the conditional independence assumption with respect to the initial decision to engage with music at age 8 or before. At such a young age, the choice of a long-term extracurricular activity such as music is strongly determined by the parents. For the parents, however, we observe a very large number of background characteristics,

[17] Furthermore, our results are not sensitive to minor modifications in the choice of control variables. In terms of the composition of the sample studied, we do not find different outcomes if we drop the observations of individuals who started their treatment later than age 8 instead of including them in the control group. Finally, our findings are robust to estimations within the subsample of individuals whose parents entered the SOEP before they actually started their music lessons.

in particular their socio-economic status, personality, involvement with their child's education, and taste for the arts. All of these observed characteristics are strongly correlated among each other and therefore also likely to be strongly correlated with any unobserved characteristics we might miss. The influence of unobserved characteristic invalidates a causal interpretation of our results only to the extent that these unobserved characteristics are uncorrelated with the observed characteristics we control for (Stuart, 2010).

The decision to continue learning a musical instrument until age 17 is more likely to be based on unobserved characteristics of the child.[18] To test the robustness of our estimates with respect to that second source of selection bias, we include two additional control variables.

First, we are able to estimate to probability to give up music training for a random subsample of 281 individuals. We can retrace the history of musical activities for these individuals back to age 12.[19] 50 of them (18 percent) played a musical instrument at age 12, but gave up before age 17. This is a large number, given that among the individuals of the subsample only 43 (15 percent) have learned a musical instrument according to our treatment definition from age 8 to 17. Using all covariates and outcome variables of our main analysis, we estimate the probability to belong to the group of those who gave up music training within the subsample with a probit model. With the coefficients resulting from this estimation, we predict this probability for the entire estimation sample.

Second, one of the most important predictors of educational achievement in Germany is the type of secondary school in which the child is enrolled. Whether the child goes to upper secondary school (Gymnasium) is determined by a variety of background characteristics, some of which are unobservable to us. Therefore, controlling for the attendance of upper secondary school will help us capture some further unobserved characteristics of the adolescent.

The propensity to give up music and secondary school type can only be measured after the start of the treatment. Previous music training thus possibly has an influence on them. Therefore, we do not include these variables in the selection model for the propensity score, but add them as control variables once we estimate outcome differences with between treatment and matched control group. This approach is similar to mediation analysis.[20]

Table 5 compares our main results with alternative specifications using mediation analysis. The results of our baseline specification (column 1 of Table 4) are printed in column (1) for comparison. As shown in column (2), these results are robust to including the probability to give up music and secondary school type as control variables. If we control for these variables, the effects on cognitive skills and ambitions decrease slightly, while all other results remain

[18] Still being engaged in music at age 17 is the precondition to be observed as a music participant in our sample.

[19] These 281 individuals answered the SOEP Youth Questionnaire in 2011 or 2012. Since 2006, the SOEP Household Questionnaire biannually asks parents about their child's leisure activities. Therefore, we have a random subsample of individuals with complete histories of musical activity since age 12.

[20] Mediation analysis is usually used to differentiate between mechanisms through which the treatment affects the outcome (Imai et al., 2010; Heckman and Pinto, 2013). To identify causal mediation effects, the intermediate variable must satisfy the sequential ignorability assumption, according to which the mediator is independent of both treatment and outcome. Our aim here is to exclude, rather than identify the effect which runs through the channel of the intermediate variable. As we are solely interested in the effect which does *not* go through the mediator, we do not need to assume sequential ignorability.

unchanged.[21]

Are the results due to reverse causality or simultaneity? A possible explanation for the positive association between music and cognitive as well as non-cognitive skills could be reverse causality or simultaneity. For example, musical activities do not increase ambition, but the more ambitious children tend to learn a musical instrument. Similarly, reverse causality could explain the positive correlation between music lessons and other outcomes such as openness, agreeableness, or even cognitive skills and school grades. Ideally, we would exclude the possibility of reverse causality by controlling for the value of the outcome before the start of the treatment. Unfortunately, due to the design of our data, we can only measure the outcome variables once, at the age of 17.

Again, mediation analysis allows us to examine the robustness of our findings to successively including outcomes as control variables. For each combination of outcomes p and q, we estimate the following model:

$$Y_i^p = \alpha + \beta \cdot Music_i + \gamma Y_i^q + \varepsilon \qquad \text{for all } p, q \text{ with } p \neq q \tag{2}$$

where control observations (with $Music_i = 0$) are weighted according to the weights obtained by propensity score matching. In other words, we examine whether the outcome difference in outcome Y^p between adolescents with and without music training, as estimated in the baseline model presented in Table 4, changes once we control for outcome Y^q. Conceptually, we insert outcome Y^q, measured like all other outcomes at the age of 17, as a proxy for the value of Y^q at a younger age. As an example, we estimate the difference in cognitive skills at age 17 between adolescents with and without music training during their childhood, controlling for conscientiousness, also measured at age 17. Of course, all other control variables used in the baseline estimation are still accounted for by applying propensity score matching. Moreover, we include the predicted propensity to give up music as well as secondary school type as further intermediate variables in each of these estimations.

Columns (3) to (5) of Table 5 provide the results for some of these mediation tests. As stated above, column (1) provides the main results from Table 4 for comparison. The other four columns show the same estimation including the variables mentioned in the table header as intermediate variables. Outcome differences between adolescents who learned a musical instrument and those who did not are very robust to including other outcomes as control variables. Even if this test is not able to entirely exclude the risk of reverse causality, we conclude that the latter is highly unlikely to entirely explain our results. Estimations including the other outcomes as intermediate variables point in the same direction and can be provided by the authors on request.

[21] As an additional test, we can show that our results are robust to a sensitivity analysis using Rosenbaum bounds (DiPrete and Gangl, 2004). Especially the effects on cognitive skills, openness, and educational plans are robust to a strongly influential unobserved confounder. Results can be provided by the authors on request.

Table 5 – *Outcome differences between adolescents with and without music training controlling for additional covariates*

	Main results	**Regression-adjustment through intermediate variables**				*Sample*
Effect of music training	(1)	(2)	(3)	(4)	(5)	*size*
Additional controls						
Probability to give up music before 17		X	X	X	X	
Attends upper secondary school		X	X	X	X	
Average cognitive skills			X			
Conscientiousness				X		
Openness					X	
Cognitive skills						
Average cognitive skills	0.24*** (0.08)	0.20** (0.08)		0.22** (0.09)	0.20** (0.10)	1,772
Analogies	0.28*** (0.09)	0.23*** (0.09)	0.08 (0.07)	0.25** (0.10)	0.23** (0.10)	1,772
Figures	0.19** (0.09)	0.20** (0.09)	0.05 (0.06)	0.24** (0.10)	0.22** (0.10)	1,772
Maths operators	0.11 (0.09)	0.06 (0.09)	-0.10^{+} (0.05)	0.07 (0.10)	0.06 (0.10)	1,772
School achievement[1]						
Average school grade	-0.17*** (0.06)	-0.15** (0.06)	-0.17^{+} (0.09)	-0.13 (0.09)	-0.18** (0.09)	3,364
German grade	-0.16** (0.06)	-0.15** (0.06)	-0.18^{+} (0.09)	-0.15^{+} (0.09)	-0.15^{+} (0.09)	3,364
Foreign language grade	-0.14** (0.06)	-0.10^{+} (0.06)	-0.13 (0.09)	-0.08 (0.09)	-0.11 (0.09)	3,364
Mathematics grade	-0.09 (0.07)	-0.09 (0.07)	-0.09 (0.10)	-0.08 (0.10)	-0.16 (0.10)	3,364
Personality						
Conscientiousness	0.28*** (0.09)	0.28*** (0.09)	0.32*** (0.11)		0.27*** (0.09)	1,753
Openness	0.33*** (0.09)	0.31*** (0.09)	0.32*** (0.11)	0.30*** (0.09)		1,753
Agreeableness	0.18^{+} (0.09)	0.19** (0.09)	0.11 (0.11)	0.13 (0.09)	0.17^{+} (0.09)	1,753
Perceived control	0.07 (0.06)	0.07 (0.06)	0.13 (0.09)	0.09 (0.08)	0.12 (0.09)	3,364
Time use						
Watch TV daily	-0.13*** (0.03)	-0.12*** (0.03)	-0.09^{+} (0.05)	-0.12** (0.05)	-0.11** (0.05)	3,364
Read books daily	0.08** (0.03)	0.06^{+} (0.03)	0.08 (0.05)	0.08^{+} (0.04)	0.06 (0.05)	3,364
Ambition						
Aim Abitur	0.15*** (0.03)	0.09*** (0.02)	0.09** (0.04)	0.09** (0.04)	0.07** (0.04)	3,364
Aim university	0.18*** (0.03)	0.12*** (0.03)	0.14*** (0.04)	0.12*** (0.04)	0.11** (0.04)	3,364
Job success likely	0.07 (0.06)	0.07 (0.06)	0.12 (0.09)	0.03 (0.09)	0.06 (0.09)	3,364
Desired profession likely	0.07 (0.06)	0.09 (0.06)	0.14 (0.09)	0.09 (0.08)	0.12 (0.08)	3,364

[1] Note that in Germany, better performance is rewarded with a lower school grade.

Source: SOEPv29 (2001-2012), own calculations. Column (1) shows the baseline results (Column (1) of Table 4. Columns (2) to (5) show the same estimations, including additional control variables (intermediate variables) as indicated in the upper part of the table. Propensity score matching (radius matching with caliper 0.01) is used to account for standard control variables from baseline specification, OLS to estimate outcome differences between treatment and matched control group with additional control variables. The sample size is smaller for cognitive skills and some personality measures, as these have only been assessed since 2006. Standard errors in parentheses are clustered at the household level and estimated by bootstrap (1999 replications). Significance levels: $^{+}$ $p<0.1$ * $p<0.05$ *** $p<0.01$

Existence of partly treated individuals in the control group. Some individuals in our control group have received music training for a number of years. They are in the control group either because they started to learn a musical instrument later than age 8 or because they gave up before age 17. Irrespective of the conditional independence assumption, the existence of partly treated individuals in the control group influences the direction in which our estimates differ from the true effect of learning a musical instrument. If adolescents benefit to some extent even from short-term musical experience, we do not have to worry. In this case, our estimates are a lower bound of the true effect, given that some members of the control group also benefit from the treatment. A more worrisome conclusion follows if short-term musical experience harms skill development. If the true effect of music training is positive when carried out at least from age 8 to 17, but negative for shorter periods of music training, we overestimate the true effect even if the conditional independence assumption is valid. In this case, our estimated average effect would add the positive effect in the treatment group to the negative effect among the partly treated. In order to obtain the true effect, we would have to subtract these effects from each other.

We can provide some empirical evidence according to which partly treated individuals weakly benefit from music training. We are able to identify individuals who started music practice later than age 8, because they answer the questions on musical practice at age 17. Column (1) of Table A.11 in the appendix shows the effects of music training for these individuals. Here we consider those adolescents as treated, who play music at age 17, but do not fulfill the requirements of the treatment definition in our main specification.[22] Moreover, we exclude the treated individuals of our main specification from the sample.

The effects of playing a musical instrument later than the age of 8 are weaker, but still positive, compared with children who start to learn a musical instrument earlier. While the effects on cognitive skills, openness and ambition are still relatively strong, those on school marks and conscientiousness are no longer significant.

Unfortunately, it is more difficult to estimate the effect of music on those who gave up music training before age 17, because the SOEP Youth Questionnaire does not ask them about past musical activities. Around 60 percent of all musically active children give up in their early teenage years. The three most important reasons are a lack of motivation, critical life events, and dissatisfaction with the teacher (Switlick and Bullerjahn, 1999). Hence, ending music training is possibly related to weaker school performance. We can test this hypothesis using the SOEP household questionnaire, which has been asking parents about their child's leisure time activities on a biannual basis since 2006. As described above, this allows us to construct a random subsample[23] of 281 individuals, for whom we observe the complete history of musical activities since age 12. We can therefore compare outcome differences between those who never played a musical instrument after age 12 to those who played a musical instrument at age 12

[22] To be precise, to be considered as treated in column (1) of Table A.11, the individual hast to: 1) play a musical instrument at age 17, and 2) have started to play music later than age 8 (with or without music lessons) or 3) have started to play at age 8 or earlier, but never taken music lessons outside of school.

[23] The subsample is random because it consists of all observations which were interviewed in 2011 and 2012 and have been in the SOEP since 2006. These facts are exogenous to all individual or family characteristics.

and gave up before age 17. Similar to all other estimations, we apply propensity score matching to account for observable family background characteristics.[24]

The effects of music for this small subsample are presented in column (2) of Table A.11 in the appendix. Due to the small sample size, none of the outcome differences are significant. Still we see that for most outcomes the direction of the effect is still the same, whereas its magnitude is greatly reduced. When it comes to cognitive skills, individuals who gave up music training seem to score slightly lower than those who were never involved with music. For the causal interpretation of our main results, this means that we might overestimate the true effect of music on cognitive skills, because some of the partly treated individuals might actually suffer from the stresses of demanding musical practice.

We conclude that the existence of partly treated individuals in the control group is unlikely to lead us to overestimate the treatment effect. If the conditional independence assumption is valid, we might even underestimate the true effect of learning a musical instrument on some outcomes.

7. Conclusion

The present study shows that even after controlling for a large number of parental background differences, learning a musical instrument is associated with better cognitive skills and school grades as well as higher conscientiousness, openness, and ambition. Adolescents who have learned a musical instrument at least between age 8 and 17 score more than one fourth of a standard deviation above other children in a cognitive skills test. This advantage is driven by verbal rather than mathematical skills. Adolescents who are enrolled in music lessons are more conscientious and open (more than one fourth of a standard deviation). They are more than 10 percent less likely to watch TV daily and about 15 percent more likely to aim at completing upper secondary school and attending university. Moreover, adolescents of low or medium socio-economic status with music training are more optimistic about their future chances of success. Other than that, results do not differ by socio-economic origin. Sports and dance, as alternative leisure activities, also positively benefit skill development. In particular, sporty adolescents are similarly ambitious with respect to the completion of secondary school or university attendance than those with music training. Moreover, adolescents who play theater or dance, are more optimistic about their future and have an increased perception of control. Still, with respect to cognitive skills, school marks and conscientiousness, the effects of music are much stronger than those of sports, theater and dance.

Our analysis encounters three risks which could question a causal interpretation of our results. We address each of them with a set of robustness tests. First, our results might be driven by unobserved heterogeneity. We argue that we are able to take into account the non-random decision to engage in music training at age 8 using a large number of parental background information, which we control for. However, unobserved individual characteristics could determine the decision to keep on taking music lessons until age 17 rather than giving up earlier.

[24] However, due to the small sample size, we had to omit some covariates in order to avoid collinearity. Moreover, the sample size is too small to estimate standard errors by bootstrap. We present standard errors which do not take into account that the propensity score was estimated.

Therefore, we additionally control for the predicted probability to give up music before age 17 as well as the adolescent's secondary school type. Second, we examine the sensitivity of our results to reverse causality by performing mediation analysis in which we estimate the correlation between music practice and outcome p, while subsequently controlling for all outcomes q other than p. We observe that the pattern of correlation between music and cognitive as well as non-cognitive skills remains stable when we include any of the other outcome variables as controls. Reverse causality is therefore unlikely to explain our results. Third, we consider individuals as treated if they learned a musical instrument at least from age 8 to 17. Thus, some individuals in the control group were partly treated as well, because they either started to take music lessons after age 8 or gave up before age 17. Our results potentially overestimate the true effect of music training if music harms skill development among these partly treated individuals. A test with a small subsample of our data for which we are able to reconstruct the individual history of music training reveals that cognitive skills are probably the only outcome for which such a risk of overestimation is present. To conclude, even though we cannot entirely exclude the possibility that unobserved heterogeneity drives our results, we approach causality better than any previous observational study on the effects of music training.

The strong effect of music training on a variety of cognitive and non-cognitive skills indicates that music is potentially an important input in the skill production function (Cunha and Heckman, 2008; Todd and Wolpin, 2003). More research should be carried out to understand the causal influence of music practice on the development of skills. In our view, three challenges should determine the agenda of future research on this question. The most important challenge will be to separate the influence of parental and individual background from the influence of music lessons. In order to do so, it would be necessary to identify a variable that influences the decision to learn a musical instrument without influencing the development of skills. Policy interventions and other variations in the regional availability of music lessons might be as "natural experiments" a promising way to carry out causal studies on the effects of music by providing a truly exogenous selection into treatment.

A second challenge will be to answer the question of the extent to which extracurricular activities are substitutable. Theoretical considerations, previous research (Covay and Carbonaro, 2010), as well as the results of this study suggest that some types of skills might be improved through participation in extracurricular activities in general, while others are influenced particularly by music. These findings may be useful in informing policies similar to those described in the introduction that have been proposed to provide theater or sports lessons to children from disadvantaged social backgrounds. While policy makers have recognized the potential of such activities, there is still a lack of empirical research to support their implementation. Further research on the potential of different types of activities should be carried out by carefully modeling the interaction between activities that may be substitutes or complements.

Finally, further research should investigate the long-term effects of learning a musical instrument on outcomes such as labor market success or life satisfaction. It is possible that learning a musical instrument has additional positive effects extending beyond educational achievement. Mechanisms such as the signaling effect or an increased sense of determination might develop fully only at the entry into the labor market.

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Appendix A. Further tables and figures

Table A.6 – *List of outcome variables*

Variable	Items	Measurement and units	
		In raw data	*In this study*
Cognitive skills			
Cognitive skills	→ Figures (find next figure in row) → Analogies (identify word pairs, e.g. meadow-grass vs. forest-? [trees]) → Maths (insert maths operators)	Test score: 0-20 points	std. deviation (normalized)
Educational achievement			
School grades	→ German grade → First foreign language grade → Math grade	Self-reported: 1 (very good) - 6 (fail)	std. deviation (normalized by school type)
Personality			
Conscientiousness	→ Are you rigorous? → Are you lazy? (–) → Are you efficient?	Self-assessment: 1 (does not apply) - 7 (applies perfectly)	std. deviation (normalized)
Openness	→ Are you original? → Do you value artistic experiences? → Do you have phantasy? → Are you eager for knowledge	Self-assessment: 1 (does not apply) - 7 (applies perfectly)	std. deviation (normalized)
Agreeableness	→ Are you sometimes rough with others? (–) → Are you able to forgive? → Are you considerate/friendly?	Self-assessment: 1 (does not apply) - 7 (applies perfectly)	std. deviation (normalized)
Perceived control	→ How my life goes, depends on myself → Compared to others, haven't achieved what I deserved (–) → What one achieves is mainly a question of luck/fate (–) → I often have the experience that others make decisions regarding my life (–) → When I encounter difficulties I have doubts about my abilities (–) → Opportunities in life determined by social conditions (–) → Little control over the things that happen in my life (–)	Self-assessment: 1 (disagree completely) - 7 (agree completely)	std. deviation (normalized)
Time use			
TV	→ Watch TV daily	binary	percent
Reading	→ Read books daily	binary	percent
Ambition			
School degree	→ Aim upper secondary school degree (Abitur)	binary	percent
University	→ Are you aiming to enroll at a university?	binary	percent
Desired profession	→ How likely to find a job in your field?	in percent	std. deviation
Job success likely	→ How likely to be succesful and get ahead?	in percent	std. deviation

Table A.7 – *List of control variables for main specification and mediation analysis*

Variable	Units	Measured when?
Parents' socio-economic background		
Mother[1] has no degree	binary	age 5 or entry[2]
Mother[1] has completed only 9 school years	binary	age 5 or entry[2]
Mother[1] has vocational degree	binary	age 5 or entry[2]
Mother[1] has university degree	binary	age 5 or entry[2]
Monthly household log net income (simple, squared)[4]	continuous	age 5 or entry[2]
Mother[1] has migration background	binary	age 5 or entry[2]
Mother's age at birth[4]	in years	age 5 or entry[2]
Number of siblings	number	age 5 or entry[2]
Child is the firstborn	binary	age 5 or entry[2]
Rooms per person at home	number	age 5 or entry[2]
Parents' personality		
Conscientiousness (mother[1,4,5])	normalized	2005 or 2009[3]
Extraversion (mother[1,4,5])	normalized	2005 or 2009[3]
Neuroticism (mother[1,4,5])	normalized	2005 or 2009[3]
Agreeableness (mother[1,4,5])	normalized	2005 or 2009[3]
Openness (mother[1,4,5])	normalized	2005 or 2009[3]
Parental involvement in the child's school success		
Parents care about school achievement	binary	retrospectively at 17
Parents do not support learning	binary	retrospectively at 17
Conflict with parents due to school results	binary	retrospectively at 17
Parents attend parent-teacher meetings	binary	retrospectively at 17
Parents attend teacher's consultation hours	binary	retrospectively at 17
Parents actively contact school teachers	binary	retrospectively at 17
Parents engage as parent representatives	binary	retrospectively at 17
Parents do not engage with child's school	binary	retrospectively at 17
Parents' taste for the arts		
Mother[1,4] monthly attend cultural events	binary	age 5 or entry
Mother[1,4] never attend cultural events	binary	age 5 or entry
Mother[1,4] are monthly artistically active	binary	age 5 or entry
Mother[1,4] are never artistically active	binary	age 5 or entry
Appreciation for the arts (mother[1,4])	normalized	age 5 or entry
Further control variables included in main specification		
Gender	binary	time constant
Birth year (10 dummies)	binary	time constant
Rural area	binary	time constant
Federal state (15 dummies)	binary	time constant
SOEP sub-sample (7 dummies)	binary	time constant
Further control variables included in mediation analysis (Table 5)		
Probability to give up music before age 17	percent	predicted
Adolescent attends upper secondary school (Gymnasium)	binary	time constant

[1] Mother's value if available, otherwise the father's value is used.
[2] If the household was not in the SOEP when the child was aged 5, these variables were measured in the year the household entered the SOEP. About 60 percent of the sample entered the SOEP later than age 5. On average, individuals enter the sample at age 8.2.
[3] The earliest year with non-missing observation.
[4] Set to mean value if missing and missing indicator included.
[5] For items and measurement, please refer to Table A.6.

Figure A.1 – *Common support graph (for main specification with main sample)*

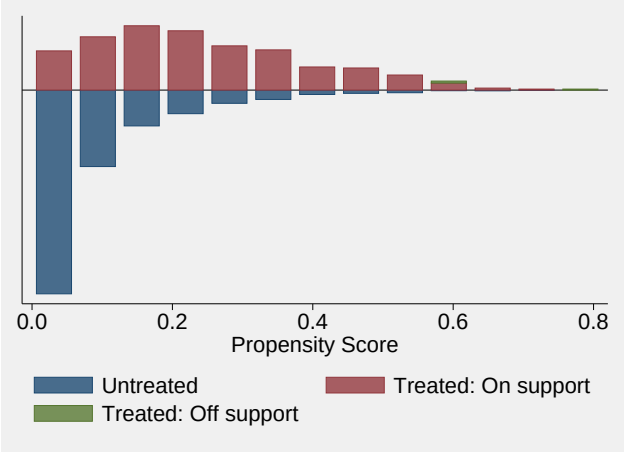

Table A.9 – *Common support*

	Main sample		**Cog. skills sample**		**Big 5 sample**	
	Control	Treated	Control	Treated	Control	Treated
Off support	0	3	0	7	0	7
On support	2,997	369	1,568	205	1,531	223

Source: SOEP v29 (2001-2012 pooled), own calculations. The table shows the common support for the three samples used in our main specification. The sample sizes for cognitive skills and Big 5 personality traits is smaller because these outcomes have been measured only since 2006. For each treated individual, radius matching with a caliper of 0.01 is performed to find appropriate matches in the control group.

Table A.8 – *Estimation of the propensity score for all three subsamples*

	Have music lessons at least between age 8 and 17					
	Main sample		Cog. skills sample		Big 5 sample	
	(1)		(2)		(3)	
Parents' education and household characteristics						
University degree	0.48***	(0.09)	0.53***	(0.12)	0.38***	(0.11)
Parent with lower secondary school degree	-0.11	(0.08)	0.10	(0.11)	-0.08	(0.10)
Mother (father) has no degree	-0.09	(0.15)	-0.17	(0.21)	-0.39^{+}	(0.21)
Vocational degree	0.09	(0.10)	0.18	(0.13)	0.01	(0.13)
Monthly HH net income (log)	-0.27	(1.10)	-2.79^{+}	(1.53)	-3.88**	(1.63)
Monthly net log HH income (square)	0.02	(0.07)	0.19^{+}	(0.10)	0.25**	(0.10)
Migration background	0.03	(0.12)	0.10	(0.18)	0.14	(0.16)
Girl	0.43***	(0.07)	0.49***	(0.09)	0.38***	(0.08)
Oldest child in family	-0.01	(0.07)	-0.03	(0.10)	0.02	(0.10)
Number of siblings	0.01	(0.03)	0.01	(0.04)	0.00	(0.04)
Rooms per person	0.14^{+}	(0.08)	0.26**	(0.12)	0.24**	(0.11)
Mother's age at birth	0.01	(0.01)	-0.01	(0.01)	0.01	(0.01)
Rural area	-0.08	(0.10)	-0.24^{+}	(0.14)	-0.14	(0.14)
Parents care strongly about school achievement	0.04	(0.08)	0.08	(0.10)	0.02	(0.10)
Parents' involvement with school						
Parents don't support learning	0.01	(0.08)	0.03	(0.11)	0.06	(0.10)
Conflict with parents due to school results	-0.03	(0.07)	-0.03	(0.09)	-0.05	(0.09)
Parents go to parent-teacher meeting	0.09	(0.10)	0.15	(0.13)	0.07	(0.12)
Parents go to teacher's consultation hours	-0.06	(0.07)	-0.14	(0.10)	-0.10	(0.09)
Parents actively contact school teachers	0.03	(0.08)	0.25**	(0.10)	0.11	(0.10)
Parents engage as parent representatives	0.34***	(0.08)	0.31***	(0.11)	0.24**	(0.11)
Parents don't engage with the child's school	-0.08	(0.16)	-0.04	(0.21)	-0.09	(0.20)
Conscientiousnes	-0.01	(0.32)	-0.01	(0.42)	0.21	(0.42)
Parents' personality						
Extraversion	-0.20	(0.24)	-0.74**	(0.31)	-0.56^{+}	(0.30)
Agreeableness	-0.31	(0.28)	-0.21	(0.36)	-0.27	(0.37)
Openness	-0.55	(0.36)	-0.03	(0.50)	-0.27	(0.47)
Neuroticism	0.17	(0.20)	0.11	(0.25)	0.10	(0.25)
No cultural events	-0.31***	(0.09)	-0.27**	(0.13)	-0.30**	(0.12)
Parents' taste for the arts						
Monthly cultural events	0.30***	(0.09)	0.31**	(0.12)	0.23^{+}	(0.13)
No artistic activities	-0.21**	(0.09)	-0.17	(0.12)	-0.16	(0.11)
Monthly artistic activities	-0.02	(0.09)	0.22**	(0.11)	0.11	(0.11)
Appreciation for art (parents)	0.83***	(0.24)	0.43	(0.32)	0.70**	(0.31)
Constant	-1.55	(4.37)	8.37	(5.96)	12.75**	(6.38)
Sample, birth and region fixed effects	Yes		Yes		Yes	
Number of observations	3,369		1,780		1,761	
Pseudo-R-Square	0.20		0.22		0.18	

Source: SOEP v29 (2001-2012 pooled), own calculations. Probit model estimating the probability to be treated. Treatment definition: Have music lessons at least between age 8 and 17. The sample for cognitive skills and Big 5 personality traits is smaller because these variables were measured only since 2006. Standard errors in parentheses. Significance levels: $^{+}$ $p < 0.1$ ** $p < 0.05$ *** $p < 0.01$

Table A.10 – *Balancing of covariates after propensity score matching (Main sample)*

	Before matching		After matching	
	Difference	t-value	Difference	t-value
Parents' education and household characteristics				
Monthly HH net income	1,028.40***	11.21	-17.62	-0.11
University degree	0.35***	13.87	-0.00	-0.04
Parent with lower secondary school degree	-0.20***	-7.31	0.00	0.14
Mother (father) has no degree	-0.11***	-5.60	0.01	0.53
Vocational degree	-0.06**	-2.28	-0.00	-0.02
Migration background	-0.08***	-3.96	-0.00	-0.18
Girl	0.16***	5.95	0.00	0.05
Oldest child in family	-0.05^{+}	-1.67	0.02	0.41
Number of siblings	0.03	0.53	0.03	0.34
Rooms per person	0.15***	6.44	0.00	0.16
Rural area	-0.06**	-2.54	-0.01	-0.24
Parents' taste for the arts				
No cultural events	-0.26***	-9.81	0.00	0.19
Monthly cultural events	0.17***	10.05	0.02	0.47
No artistic activities	-0.26***	-9.46	-0.00	-0.05
Monthly artistic activities	0.18***	8.06	0.02	0.65
Appreciation for art (parents)	0.09***	6.73	-0.00	-0.13
Parents' involvement with school				
Parents care strongly about school achievement	0.01	0.45	-0.01	-0.18
Parents don't support learning	-0.04	-1.55	0.00	0.12
Conflict with parents due to school results	-0.07***	-2.63	-0.01	-0.33
Parents go to parent-teacher meeting	0.08***	3.47	0.00	0.04
Parents go to teacher's consultation hours	-0.00	-0.07	-0.01	-0.15
Parents actively contact school teachers	0.04	1.54	0.01	0.39
Parents engage as parent representatives	0.17***	8.36	0.01	0.34
Parents don't engage with the child's school	-0.04**	-2.48	-0.00	-0.25
Parents' personality				
Conscientiousnes	-0.01**	-2.23	-0.00	-0.04
Extraversion	-0.00	-0.09	-0.00	-0.44
Agreeableness	-0.01	-1.47	-0.01	-0.70
Openness	0.03***	3.89	-0.00	-0.18
Neuroticism	-0.01	-1.31	0.00	0.19

Source: SOEP v29 (2001-2012 pooled), own calculations. Differences between adolescents with and without music training before and after matching for the main sample (used for all outcomes except cognitive skills and Big 5 personality traits). Balancing tables for these other two samples can be provided by the authors on request. Significance levels: $^{+}$ $p < 0.1$ ∗∗ $p < 0.05$ ∗∗∗ $p < 0.01$

Table A.11 – *Outcome differences between adolescents with and without music training (partly treated individuals)*

	Music lessons after age 8 or music practice without lessons		**Adolescents who gave up music before age 17**	
Effect of music training	(1)		(2)	
Size of subsample	2,997		238	
Treated	478		50	
Control	2,519		188	
Off support (treated)	6		5	
Cognitive skills				
Average cognitive skills	0.11^{+}	(0.07)	-0.10	(0.23)
Analogies	0.15**	(0.07)	-0.11	(0.21)
Figures	0.17**	(0.07)	0.06	(0.24)
Maths operators	-0.01	(0.07)	-0.15	(0.22)
School achievement[1]				
Average school grade	-0.06	(0.05)	0.08	(0.21)
German grade	-0.08	(0.05)	-0.08	(0.20)
Foreign language grade	-0.02	(0.06)	0.27	(0.21)
Mathematics grade	-0.05	(0.06)	-0.01	(0.21)
Personality				
Conscientiousness	-0.05	(0.07)	0.23	(0.19)
Openness	0.38***	(0.08)	0.16	(0.21)
Agreeableness	0.17**	(0.07)	0.14	(0.18)
Perceived control	0.03	(0.06)	0.27	(0.20)
Time use				
Watch TV daily	-0.03	(0.02)	0.03	(0.10)
Read books daily	0.10***	(0.02)	-0.08	(0.08)
Ambition				
Aim Abitur	0.12***	(0.03)	-0.01	(0.11)
Aim university	0.13***	(0.03)	-0.00	(0.10)
Job success likely	-0.05	(0.05)	0.01	(0.18)
Desired profession likely	0.00	(0.05)	0.11	(0.17)

[1] Note that in Germany, better performance is rewarded with a lower school grade.

Source: SOEPv29 (2001-2012), own calculations. Column (1) shows the effects of music training for those who started music lessons later than age 8 (and kept taking them until age 17) or who played music without taking lessons. Column (2) shows the effects of music training for those who played music at age 12 but gave up before age 17. Both sets of estimations were conducted with a specific subsample of the main sample (please refer to the text for more information). Propensity score matching is used to account for standard control variables from baseline specification (radius matching with caliper 0.01 for column (1). Due to the small sample size, we use a caliper of 0.1 in column (2)). In column (2), the set of control variables was slightly reduced to exclude collinearity. In column (1), the sample size is smaller for cognitive skills and some personality measures, as these have only been assessed since 2006. In column (1), standard errors in parentheses are clustered at the household level and estimated by bootstrap (1999 replications), in column (2), due to the small sample size, standard errors do not take into account that the propensity score was estimated. Significance levels: $^{+}$ $p < 0.1$ ** $p < 0.05$ *** $p < 0.01$

Graduation Requirements for PTHS
Side By Side Comparison

Course Requirements	Current Credits for PTHS	Core 24 Credits for Class of 2019
English	4	4
Mathematics	3	3
Science	2	3 must include 2 lab credits
Social Studies	3	3
Physical Education	1.5	1.5
Health	.5	.5
Careers/Life Skills	.5	.5
CTE/Occupational Ed.	1.5	.5
Visual/Performing Arts	1	2 1 credit may be a Personal Pathway course
World Language	0	2 Both credits may be Personal Pathway courses
Electives	5.5	4
Total Credits Required for Graduation	22.5	24.0 *
Assessment Requirements **	Current Exams	Class of 2019 Exams
ELA Exam	HSPE Transition to Smarter Balanced Exam	Smarter Balanced ELA Exam
Math Exam	Algebra or Geometry EOC	Smarter Balanced Math Exam
Science Exam	Biology EOC	Next Generation Science Exam

Additional Requirements:
High School and Beyond Plan
Culminating Project (local requirement only)
Washington State History (typically completed in middle school years)

*Up to two credits may be waived locally for students who have attempted 24 credits.
**Students with special needs on an IEP may meet assessment standards through the Smarter Balanced Off-Grade Level Exams. Other exam alternatives for general population students may be created over the next two years. SAT/ACT exam cut scores are currently in place.

Port Townsend High School
Personalized Pathway Requirements

Don't ask where your future will take you…
Instead, ask where YOU will take YOUR FUTURE!

The goal of this document is to help students decide which career path(s) they might want to explore during their high school experience. The more information a student has, the better decision he or she can make. After thinking about possible career options, you can explore the recommended classes that may help you reach your long term goals, as well as insure you graduate on time with a plan for on-going education and training. Identifying a Personalized Pathway will help you and your school counselor provide a focus for your learning here at P.T.H.S.

The 24 state credits required for graduation from a public high school in the state of Washington offer flexibility. Students are allowed to substitute up to 3 credits from courses that meet their Personalized Pathway, in place of another state requirement as noted below:

- 2 state required credits in Performing or Visual Arts
    - 1 credit may be substituted for a Personalized Pathway course
- 2 state required credits in World Language
    - Both credits may be Personalized Pathway courses

It is very important that students work with their counselor to carefully consider their post high school goals prior to making course determinations. For example, students intending to directly enroll in a four year college or university will be required to have at least two World Language credits on their high school transcript.

Additionally, Work-Based Learning activities provide extended learning experiences that connect acquired knowledge and skills to a student's future. Teachers, counselors, administrators, parents, and community partners share responsibility for assisting all students in developing their High School and Beyond Plan. Washington State Career and Technical Education (CTE) Program Standards define and require Work Based Learning as a component of all CTE programs. It is an essential element of the total educational system and provides technical skills, knowledge and training necessary to succeed in specific occupations and careers. It prepares students for the world of work by introducing them to workplace competencies in any career. A student can earn a .5 occupational or elective credit for every 180 hours of paid, documented work experience. Work Based Learning can be added into any of the Personalized Pathways.

College Ready Academic Pathway

Students intending to directly enroll in a four year college or university after high school are encouraged to enroll in a full academic schedule for all four years.
Recommended courses include:
4 credits of mathematics (Algebra, Geometry, Algebra 2, Pre-Calculus, Calculus)
4 credits of science (Science 1, Science 2, Physics, Chemistry, Forensics, Marine Biology)
2 credits in the same World Language

Challenge yourself to select more rigorous options for your electives such as Engineering and Robotics, AP Statistics, additional science courses, third and fourth year World Language, and other Advanced Placement or Honors level courses.

Note: Not all listed courses are available each year and are dependent on staff availability and funding.

Architecture, Design, Agricultural or Construction Sciences Pathway

Students interested in these areas dream of designing, planning, managing, building or maintaining the structures and/or resources where we live, work and play. As long as human beings inhabit the planet, we will have the need for scientists and trades technicians to ensure that we are responsibly managing everything from our food production to our natural resources.

Recommended Personal Pathway courses may include:

Chemistry
Marine Biology/Environmental Science
Engineering and Robotics
Culinary Arts
Maritime Studies classes, including Marine Trades and Small Vessel Operations
Web Design
Video Productions or Photography
Applied Mathematics

Business/Marketing Management or Hospitality& Tourism Pathway

If you want to explore how to run your own business, or be the person that makes a business successful, be sure to look at these opportunities. This pathway also includes the management of the Hospitality industry, including travel and culinary experiences!

Recommended Personal Pathway courses may include:

Business Communications
Computer Applications
Tourism and Hospitality
Culinary Arts
Accounting/Accounting II

Communications Technology and Audio/Visual Arts Pathway

Creative students who enjoy designing, producing, exhibiting, performing, creating, writing and/or publishing media content will want to consider exploring these courses:

Recommended Personal Pathway courses may include:

Business Communications
Art
Orchestra or Band
Photography
Video Productions
Web Design
Advanced Media
Yearbook

Health Sciences Pathway

Healthcare and related sciences is the largest and fastest growing industry in the United States. In the Health Sciences you can think about a career that promotes health, wellness and includes working with people, or involves investigating and researching.

Recommended Personal Pathway courses may include:

Computer Applications
Forensics
Chemistry
Physical Education classes
Culinary Arts
AP Statistics

Information Technology Pathway

Careers in the Information Technology industry are available in every sector of the economy. Careers in IT involve the design, development, support and management of hardware, software, multimedia and systems integration services. This is a dynamic and entrepreneurial field that continues to have a revolutionary impact on the economy and on the world.

Recommended Personal Pathway courses may include:

Computer Applications
Business Communications
Engineering and Robotics
Web Design
Advanced Media

Maritime Studies/Marine Manufacturing Pathway

Over 70% of the earth is covered by water. Maritime is a dynamic and vital industry all over the world. Virtually every sector of the job market can overlap with some aspect of the maritime trades. If you are intrigued by how products and machines work together in the natural environment of the marine industry then these courses may be of interest to you!

Recommended Personal Pathway courses may include:

Maritime Studies Courses – Marine Trades and Small Vessel Operations
Computer Applications
Business Communications
Engineering and Robotics
Marine Biology
Applied Mathematics

Personal Pathway Exploration

Students have a variety of unique interests, and high school is the perfect time to begin exploring them. Students who choose this pathway are looking for opportunity to explore a variety of different electives that the high school has to offer!

Recommended Personal Pathway courses may include:

Marine Science
Engineering and Robotics
AP Statistics
World Language Classes – Spanish or French are both offered at PTHS
Forensics
Yearbook
Physical Education
Band or Orchestra or Art
Culinary Arts
Maritime Courses – Marine Trades and Small Vessel Operations
Business Courses - Business Communications, Tourism and Hospitality, Computer Applications
Video Productions, Photography, Web Design, and Advanced Media

Specialized Support Pathway

This pathway recognizes the individual learning needs of students, which must be uniquely designed to build a high school program that best meets the academic and career interests of the student. This pathway must be signed off by a counselor.

Personal Pathway courses will include multiple credits of Study Skills/Essential Skills, as well as specialized support courses including Algebra Interventions, English Interventions and Reading-Writing Seminar.

PORT TOWNSEND HIGH SCHOOL 4 YEAR PLAN

Student name _____ Graduation Year _____

24 CREDITS NEEDED FOR GRADUATION

English 4 credits
Math 3 credits (algebra, geometry & higher math)
Science 3 credits (2 credits must be a lab class)
CTE 0.5 credit
Additional Electives 4 credits
Fine Arts 2 credits (1 may be Personal Pathway class)
PE/Health 2 credits (0.5 credit must be health)
Social Studies 3 credits
Career/Life Skills 0.5 credit
Foreign Language 2 credits (or Personal Pathway classes)

9th Grade Freshman Year

1st Semester	2nd Semester
1. English	1. English
2. Math	2. Math
3. Science 1	3. Science 1
4. Health	4. Careers
5. _____	5. _____
6. _____	6. _____

10th Grade Sophomore Year

1st Semester	2nd Semester
1. English	1. English
2. Math	2. Math
3. Science 2	3. Science 2
4. World History	4. World History
5. _____	5. _____
6. _____	6. _____

11th Grade Junior Year

1st Semester	2nd Semester
1. English	1. English
2. Math	2. Math
3. U.S. History	3. U.S. History
4. Physics	4. Physics
5. _____	5. _____
6. _____	6. _____

12th Grade Senior Year

1st Semester	2nd Semester
1. English	1. English
2. CWP	2. CWP
3. _____	3. _____
4. _____	4. _____
5. _____	5. _____
6. _____	6. _____

Additional Graduation requirements:
Meet Standard on Required State Math Exam
Meet Standard on Required State Biology Exam
Meet Standard on Required State Language Arts
Complete a Culminating Project
Complete a High School and Beyond Plan
Complete WA State/Pacific NW History Class

Personal Pathways

___ College Ready Academic Pathway
___ Architecture, Design, Agricultural or Construction Sciences Pathway
___ Business/Marketing Management of Hospitality & Tourism Pathway
___ Communicationa Technology and Audio/Visual Arts Pathway
___ Personal Pathway Exploration
___ Specialized Support Pathway _____
___ Health Sciences Pathway
___ Informational Technology Pathway
___ Maritime Studies/Marine Manufacturing Pathway

Student Signature_____ Date _____

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PORT TOWNSEND HIGH SCHOOL 4 YEAR PLAN

Student name _____ Graduation Year _____

24 CREDITS NEEDED FOR GRADUATION

English 4 credits
Math 3 credits (algebra, geometry & higher math)
Science 3 credits (2 credits must be a lab class)
CTE 0.5 credit
Additional Electives 4 credits
Fine Arts 2 credits (1 may be Personal Pathway class)
PE/Health 2 credits (0.5 credit must be health)
Social Studies 3 credits
Career/Life Skills 0.5 credit
Foreign Language 2 credits (or Personal Pathway classes)

9th Grade Freshman Year

1st Semester	2nd Semester
1. _____	1. _____
2. _____	2. _____
3. _____	3. _____
4. _____	4. _____
5. _____	5. _____
6. _____	6. _____

10th Grade Sophomore Year

1st Semester	2nd Semester
1. _____	1. _____
2. _____	2. _____
3. _____	3. _____
4. _____	4. _____
5. _____	5. _____
6. _____	6. _____

11th Grade Junior Year

1st Semester	2nd Semester
1. _____	1. _____
2. _____	2. _____
3. _____	3. _____
4. _____	4. _____
5. _____	5. _____
6. _____	6. _____

12th Grade Senior Year

1st Semester	2nd Semester
1. _____	1. _____
2. _____	2. _____
3. _____	3. _____
4. _____	4. _____
5. _____	5. _____
6. _____	6. _____

Additional Graduation requirements:
Meet Standard on Required State Math Exam
Meet Standard on Required State Biology Exam
Meet Standard on Required State Language Arts
Complete a Culminating Project
Complete a High School and Beyond Plan
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Personal Pathways

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___ Communicationa Technology and Audio/Visual Arts Pathway
___ Personal Pathway Exploration
___ Specialized Support Pathway _____
___ Health Sciences Pathway
___ Informational Technology Pathway
___ Maritime Studies/Marine Manufacturing Pathway

Student Signature_____ Date _____

3.06.15 jkb

PORT TOWNSEND SCHOOL DISTRICT NO 50
CALENDAR OF EVENTS
March 23, 2015 – April 27, 2015

March 23-27	Grant Street and Blue Heron Parent/Teacher Conferences 3-hr. early release, except March 25, 2-hr.
March 23-27	Blue Heron and Grant Street Book Fair
March 23	IMC meeting, 3:30 p.m. (Holley, Keith)
March 25	2-hr. Early Release, all schools
March 30 – Apr 3	Spring Break, no school
April 2	Finance Committee Meeting, 3:30 p.m., (Nathanael, Keith)
April 8	2-hr. Early Release, all schools
April 9	Tech Committee Meeting, 3:30 p.m., CoLab
April 13	School Board Work/Study Meeting, 6:00 p.m.
April 14	Grant Street PTA Meeting, 6:00 p.m.
April 15	2-hr. Early Release, all schools Facilities Committee Meeting, 3:30 p.m., Room S-11 (Nathanael, Jennifer)
April 17	8th Grade to Snow Creek
April 22	2 hr. Early Release, all schools Wellness Committee Meeting, 3:30 p.m., Room S-11 (Jennifer, Pam)
April 23	BH Parent Forum 6:00 – 7:30 p.m. BH 5th Gr. Human Growth and Development Parent Night, 7:30 p.m. IMC Meeting, 3:30 p.m., Room S-11 (Holley, Keith)
April 24	GS Art Gallery Walk, 6:00p.m.
April 27-May 1	Smarter Balanced Testing
April 27	School Board Regular Meeting, 6:00 p.m.
April 30	East Jefferson Partnership, 6:00 p.m., Brinnon (Jennifer and Pam)

Port Townsend School District

Monthly Financial Report to Board

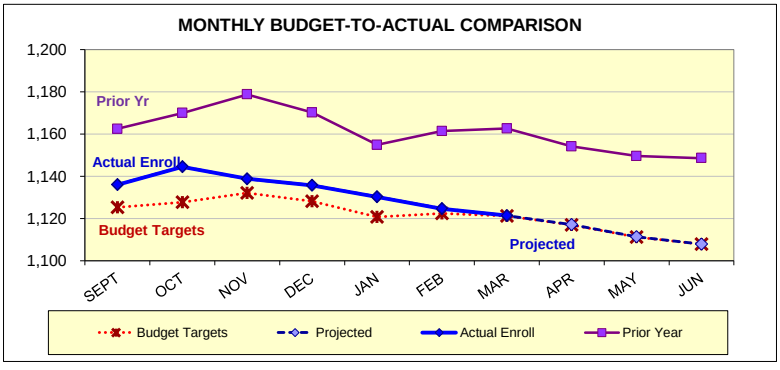
March 23, 2015

- YTD Enrollment as of March 1, 2015
- February Month End Financial Reports
  - Financial Summary - Net Assets
  - Revenue, Expenditure & Fund Balance
  - General Fund Comparison to Prior Year

Enrollment

March 2015

AAFTE w/out Running Start		
Prior Year	14-15 Budget	14-15 Projected
1,161	1,121	1,127



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Enrollment

March 2015

Current Month	Current Month Actual Head Ct	Current Month Actual FTE*	Budget Target FTE*	FTE Variance from Target
Grades K-3	325	288.0	287.0	*1.1*
Grades 4-8	436	434.8	439.0	*(4.2)*
Grades 9-12	419	398.5	406.1	*(7.6)*
	1,180	1,121.3	1,132.2	*(10.8)*
Running Start	18	27.2	n/a	*n/a*
Totals	1,198	**1,148.5**	**1,132.2**	***(10.8)***

Projected Annual Average	Projected thru YE Head Ct	Projected thru YE AAFTE**	Budget AAFTE**	AAFTE Variance from Budget
K-12	n/a	**1,126.7**	**1,121.0**	*5.7*
Running Start	n/a	**26.2**	**30.0**	*(3.8)*

Current Month FTE is *(3.30)* *- (Decrease) from prior month*
99.52% *of projected Annual Average*

** FTE - Full Time Enrollment* *** AAFTE, Annual Average Full Time Enrollment (FTE)*

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Financial Summary

2014-2015

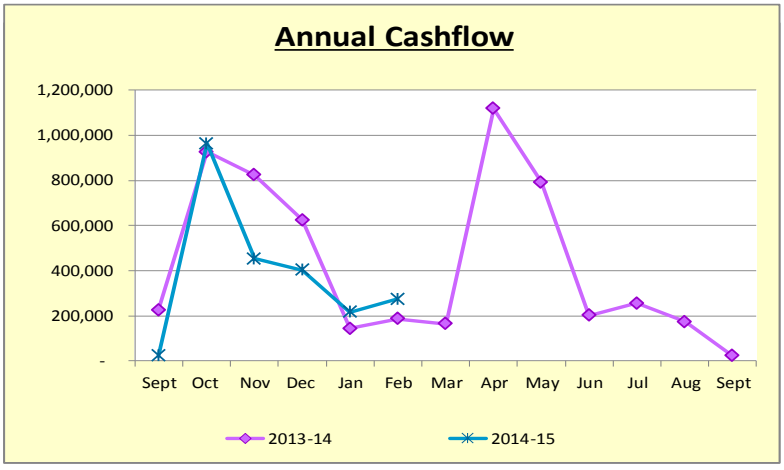
as of: **February 28, 2015**

NET ASSETS	General Fund	Capital Proj Fund	Debt Svc Fund	ASB Fund	Vehicle Fund
Total Assets	$ 3,630,286	$ 1,924,610	$ 123,166	$ 385,094	$ 90,630
- less: Taxes Receivable	(3,305,857)	(1,161,638)	(1,577)	-	-
Assets Net of Taxes Due	**$ 324,429**	**$ 762,972**	**$ 121,589**	**$ 385,094**	**$ 90,630**
Total Liabilities/Def Rev	$ 3,354,078	$ 1,166,520	$ 1,577	$ 17,163	$ -
- less:Deferred Tax Revenue	(3,305,857)	(1,161,638)	(1,577)	-	-
Liabilities Net of Taxes Due	**$ 48,221**	**$ 4,882**	**$ -**	**$ 17,163**	**$ -**
Net Assets (Fund Balance)	$ 276,208	$ 758,090	$ 121,589	$ 367,932	$ 90,630

Net Cash & Investments	GF	CPF	DSV	ASB Fund	TVF
Prior Month End	$ 216,764	$ 920,343	$ 121,488	$ 361,528	$ 90,620
February 28, 2015	$ 274,337	$ 762,972	$ 121,589	$ 369,219	$ 90,630
net change	57,573	(157,372)	101	7,691	10

4

Annual Cash Flow



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Financial Operations

2014-2015

as of: **February 28, 2015**

REVENUES, EXPENDITURES & CHANGES IN FUND BAL	General Fund	Capital Proj Fund	Debt Svc Fund	ASB Fund	Vehicle Fund
Revenues YTD	$ 6,565,213	$ 589,845	$ 1,820	$ 166,732	$ 62
Expenditures YTD	(6,706,744)	(205,301)	(53,839)	(150,704)	(117,949)
Transfers-in/<out> YTD	-	(214,683)	53,782	-	-
YTD Change in Fund Bal	$ (141,532)	$ 169,861	$ 1,764	$ 16,027	$ (117,887)
+ Beginning Fund Balance	417,739	588,229	119,825	351,904	208,517
Current Fund Balance	**$ 276,208**	**$ 758,090**	**$ 121,589**	**$ 367,932**	**$ 90,630**

Budgeted Expenditure Capacity:					*(revised budget)*
Total Expenditure Budget	$ 13,955,720	$ 1,398,500	$ 60,723	$ 389,968	$ 173,500
less YTD Expend/Transf	(6,706,744)	(205,301)	(53,839)	(150,704)	(117,949)
less YTD Encumbrances	(6,406,262)	(25,053)	-	(47,741)	(1,090)
Un-Encumbered Budget *	**$ 842,714**	**$ 1,168,146**	**$ 6,884**	**$ 191,523**	**$ 54,461**

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General Fund

2014-2015

Year-to-Year Comparison

YEAR-to-YEAR	February 2014-2015	% of Bud	February 2013-2014	% of Bud	Variance
Beginning Fund Balance	**$ 417,739**		**$446,099**		*$ (28,360)*
+ Revenues	6,404,312	*47.0%*	6,247,364	*45.9%*	*156,948*
+ Transfer-In from other funds	160,901	*57.7%*	93,038	*33.3%*	*67,863*
Total Funds Available	**$ 6,982,952**		**$ 6,786,501**		*$ 196,451*
Expenditures:					
Salaries & Benefits (Payroll)	$ 5,391,840		$ 5,356,642		*35,198*
Accounts Payable	1,314,904		1,239,296		*75,608*
Total Expenditures & Transf-out	**$ 6,706,744**	*48.1%*	**$ 6,595,938**	*47.9%*	*$ 110,806*
Fund Balance at EOM	**$ 276,208**		**$ 190,563**		*$ 85,645*

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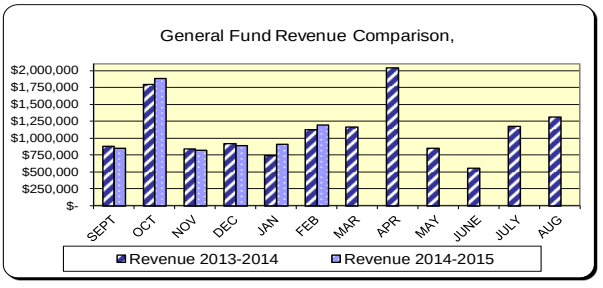
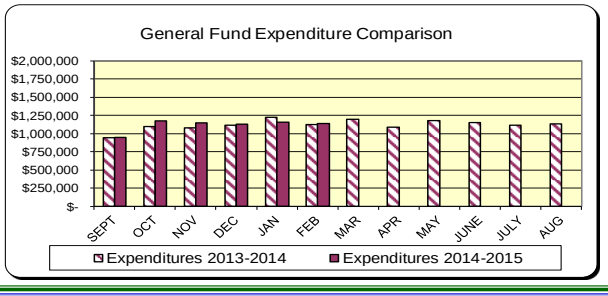
2014-2015

General Fund

February 2015





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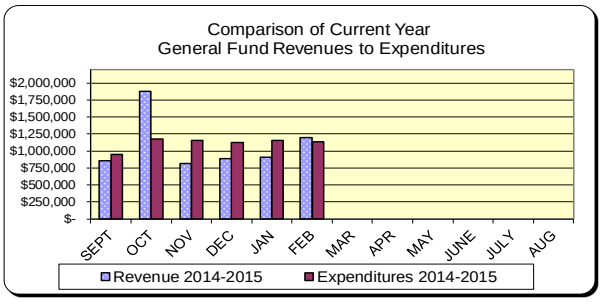
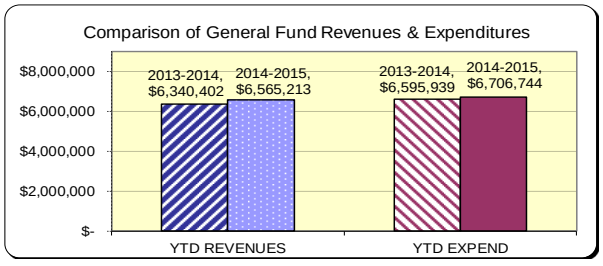
2014-2015

General Fund

February 2015





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Conclusion

Are there any questions?

10

10--General Fund -- for the Month of February , 2015

A. REVENUES/OTHER FIN. SOURCES	ANNUAL BUDGET	ACTUAL FOR MONTH	ACTUAL FOR YEAR	ENCUMBRANCES	BALANCE	PERCENT
1000 LOCAL TAXES	3,250,537	102,697.27	1,499,716.00		1,750,821.00	46.14
2000 LOCAL SUPPORT NONTAX	515,455	61,598.42	195,999.52		319,455.48	38.02
3000 STATE, GENERAL PURPOSE	6,537,785	561,340.04	3,338,864.32		3,198,920.68	51.07
4000 STATE, SPECIAL PURPOSE	2,058,428	167,578.64	915,766.24		1,142,661.76	44.49
5000 FEDERAL, GENERAL PURPOSE	0	32,425.37	32,425.37		32,425.37-	0.00
6000 FEDERAL, SPECIAL PURPOSE	1,278,499	112,064.02	421,540.53		856,958.47	32.97
7000 REVENUES FR OTH SCH DIST	0	.00	.00		.00	0.00
8000 OTHER AGENCIES AND ASSOCIATES	0	.00	.00		.00	0.00
9000 OTHER FINANCING SOURCES	279,016	160,900.67	160,900.67		118,115.33	57.67
Total REVENUES/OTHER FIN. SOURCES	13,919,720	1,198,604.43	6,565,212.65		7,354,507.35	47.16
B. EXPENDITURES						
00 Regular Instruction	6,527,946	538,152.67	3,343,644.76	2,890,403.88	293,897.36	95.50
10 Federal Stimulus	0	.00	.00	0.00	.00	0.00
20 Special Ed Instruction	2,263,372	214,960.33	1,074,422.66	1,283,179.30	94,229.96-	104.16
30 Voc. Ed Instruction	460,746	36,253.59	242,138.88	203,603.20	15,003.92	96.74
40 Skills Center Instruction	0	.00	.00	0.00	.00	0.00
50+60 Compensatory Ed Instruct.	868,846	54,886.69	338,077.69	298,509.48	232,258.83	73.27
70 Other Instructional Pgms	635,087	15,179.71	140,848.55	105,368.01	388,870.44	38.77
80 Community Services	5,879	907.07	3,323.79	2,003.44	551.77	90.61
90 Support Services	3,193,844	277,752.26	1,564,287.87	1,623,194.23	6,361.90	99.80
Total EXPENDITURES	13,955,720	1,138,092.32	6,706,744.20	6,406,261.54	842,714.26	93.96
C. OTHER FIN. USES TRANS. OUT (GL 536)	0	.00	.00			
D. OTHER FINANCING USES (GL 535)	0	.00	.00			
E. EXCESS OF REVENUES/OTHER FIN.SOURCES OVER(UNDER)EXP/OTH FIN USES (A-B-C-D)	36,000-	60,512.11	141,531.55-		105,531.55-	293.14
F. TOTAL BEGINNING FUND BALANCE	444,000		417,739.44			
G. G/L 898 PRIOR YEAR ADJUSTMENTS(+OR-)	XXXXXXXXX		.00			
H. TOTAL ENDING FUND BALANCE (E + F +OR- G)	408,000		276,207.89			

I. ENDING FUND BALANCE ACCOUNTS:		
G/L 810 Restricted For Other Items	0	.00
G/L 821 Restrictd for Carryover	0	7,029.00
G/L 828 Restricted for C/O of FS Rev	0	1,930.00
G/L 840 Nonspnd FB - Invent/Prepd Itms	0	2,973.00
G/L 870 Committed to Other Purposes	340,000	.00
G/L 872 Committd to Min Fnd Bal Policy	0	297,367.44
G/L 875 Assigned Contingencies	50,000	50,000.00
G/L 888 Assigned to Other Purposes	0	58,440.00
G/L 890 Unassigned Fund Balance	18,000	141,531.55-
TOTAL	408,000	276,207.89

20--Capital Projects -- for the Month of February , 2015

A. REVENUES/OTHER FIN. SOURCES	ANNUAL BUDGET	ACTUAL FOR MONTH	ACTUAL FOR YEAR	ENCUMBRANCES	BALANCE	PERCENT
1000 Local Taxes	1,168,739	37,109.52	548,446.13		620,292.87	46.93
2000 Local Support Nontax	365,376	5,980.32	41,398.45		323,977.55	11.33
3000 State, General Purpose	0	.00	.00		.00	0.00
4000 State, Special Purpose	0	.00	.00		.00	0.00
5000 Federal, General Purpose	0	.00	.00		.00	0.00
6000 Federal, Special Purpose	0	.00	.00		.00	0.00
7000 Revenues Fr Oth Sch Dist	0	.00	.00		.00	0.00
8000 Other Agencies and Associates	0	.00	.00		.00	0.00
9000 Other Financing Sources	0	.00	.00		.00	0.00
Total REVENUES/OTHER FIN. SOURCES	1,534,115	43,089.84	589,844.58		944,270.42	38.45
B. EXPENDITURES						
10 Sites	200,000	5,624.86	21,290.01	0.00	178,709.99	10.65
20 Buildings	1,198,500	38,817.98	155,332.27	17,931.32	1,025,236.41	14.46
30 Equipment	0	.00	28,678.90	7,121.57	35,800.47-	0.00
40 Energy	0	.00	.00	0.00	.00	0.00
50 Sales & Lease Expenditure	0	.00	.00	0.00	.00	0.00
60 Bond Issuance Expenditure	0	.00	.00	0.00	.00	0.00
90 Debt	0	.00	.00	0.00	.00	0.00
Total EXPENDITURES	1,398,500	44,442.84	205,301.18	25,052.89	1,168,145.93	16.47
C. OTHER FIN. USES TRANS. OUT (GL 536)	338,739	160,900.67	214,682.72			
D. OTHER FINANCING USES (GL 535)	0	.00	.00			
E. EXCESS OF REVENUES/OTHER FIN.SOURCES OVER(UNDER)EXP/OTH FIN USES (A-B-C-D)	203,124-	162,253.67-	169,860.68		372,984.68	183.62-
F. TOTAL BEGINNING FUND BALANCE	304,060		588,228.84			
G. G/L 898 PRIOR YEAR ADJUSTMENTS(+OR-)	XXXXXXXXX		.00			
H. TOTAL ENDING FUND BALANCE (E + F +OR- G)	100,936		758,089.52			

I. ENDING FUND BALANCE ACCOUNTS:		
G/L 810 Restricted For Other Items	0	.00
G/L 835 Restrictd For Arbitrage Rebate	0	.00
G/L 861 Restricted from Bond Proceeds	0	.00
G/L 862 Committed from Levy Proceeds	30,333	725,899.87
G/L 869 Restricted fr Undistr Proceeds	0	.00
G/L 870 Committed to Other Purposes	0	37,826.00
G/L 889 Assigned to Fund Purposes	70,603	5,636.35-
G/L 890 Unassigned Fund Balance	0	.00
TOTAL	100,936	758,089.52

30--Debt Service Fund -- for the Month of February , 2015

A. REVENUES/OTHER FIN. SOURCES	ANNUAL BUDGET	ACTUAL FOR MONTH	ACTUAL FOR YEAR	ENCUMBRANCES	BALANCE	PERCENT
1000 Local Taxes	0	112.62	1,760.83		1,760.83-	0.00
2000 Local Support Nontax	100	13.16	59.65		40.35	59.65
3000 State, General Purpose	0	.00	.00		.00	0.00
5000 Federal, General Purpose	0	.00	.00		.00	0.00
6000 Federal, Special Purpose	0	.00	.00		.00	0.00
9000 Other Financing Sources	59,723	.00	53,782.05		5,940.95	90.05
Total REVENUES/OTHER FIN. SOURCES	59,823	125.78	55,602.53		4,220.47	92.95
B. EXPENDITURES						
Matured Bond Expenditures	46,800	.00	46,800.00	0.00	.00	100.00
Interest On Bonds	12,923	.00	6,982.05	0.00	5,940.95	54.03
Interfund Loan Interest	0	.00	.00	0.00	.00	0.00
Bond Transfer Fees	1,000	25.00	56.91	0.00	943.09	5.69
Arbitrage Rebate	0	.00	.00	0.00	.00	0.00
Underwriter's Fees	0	.00	.00	0.00	.00	0.00
Total EXPENDITURES	60,723	25.00	53,838.96	0.00	6,884.04	88.66
C. OTHER FIN. USES TRANS. OUT (GL 536)	0	.00	.00			
D. OTHER FINANCING USES (GL 535)	0	.00	.00			
E. EXCESS OF REVENUES/OTHER FIN.SOURCES OVER(UNDER)EXPENDITURES (A-B-C-D)	900-	100.78	1,763.57		2,663.57	295.95-
F. TOTAL BEGINNING FUND BALANCE	118,000		119,825.30			
G. G/L 898 PRIOR YEAR ADJUSTMENTS(+OR-)	XXXXXXXXX		.00			
H. TOTAL ENDING FUND BALANCE (E + F +OR- G)	117,100		121,588.87			

I. ENDING FUND BALANCE ACCOUNTS:		
G/L 810 Restricted for Other Items	0	.00
G/L 830 Restricted for Debt Service	117,100	121,588.87
G/L 835 Restrictd For Arbitrage Rebate	0	.00
G/L 889 Assigned to Fund Purposes	0	.00
G/L 890 Unassigned Fund Balance	0	.00
TOTAL	117,100	121,588.87

40--Associated Student Body Fund -- for the Month of February , 2015

A. REVENUES	ANNUAL BUDGET	ACTUAL FOR MONTH	ACTUAL FOR YEAR	ENCUMBRANCES	BALANCE	PERCENT
1000 General Student Body	166,250	4,029.96	29,014.84		137,235.16	17.45
2000 Athletics	45,500	8,520.00	24,441.39		21,058.61	53.72
3000 Classes	14,800	2,272.00	10,892.15		3,907.85	73.60
4000 Clubs	132,950	2,523.56	86,917.61		46,032.39	65.38
6000 Private Moneys	12,200	100.00	15,465.73		3,265.73-	126.77
Total REVENUES	371,700	17,445.52	166,731.72		204,968.28	44.86
B. EXPENDITURES						
1000 General Student Body	95,937	285.34	6,943.09	2,608.97	86,384.94	9.96
2000 Athletics	83,427	6,746.03	48,909.04	18,380.46	16,137.50	80.66
3000 Classes	32,460	148.30	2,349.62	2,017.69	28,092.69	13.45
4000 Clubs	154,463	2,806.14	79,431.49	24,733.65	50,297.86	67.44
6000 Private Moneys	23,681	.00	13,071.03	0.00	10,609.97	55.20
Total EXPENDITURES	389,968	9,985.81	150,704.27	47,740.77	191,522.96	50.89
C. EXCESS OF REVENUES OVER(UNDER)EXPENDITURES (A-B)	18,268-	7,459.71	16,027.45		34,295.45	187.74-
D. TOTAL BEGINNING FUND BALANCE	212,713		351,904.05			
E. G/L 898 PRIOR YEAR ADJUSTMENTS(+OR-)	XXXXXXXXX		.00			
F. TOTAL ENDING FUND BALANCE C + D +OR- E)	194,445		367,931.50			

G. ENDING FUND BALANCE ACCOUNTS:		
G/L 810 Restricted for Other Items	0	.00
G/L 819 Restricted for Fund Purposes	194,445	367,931.50
G/L 840 Nonspnd FB - Invent/Prepd Itms	0	.00
G/L 870 Committed to Other Purposes	0	.00
G/L 889 Assigned to Fund Purposes	0	.00
G/L 890 Unassigned Fund Balance	0	.00
TOTAL	194,445	367,931.50

90--Transportation Vehicle Fund -- for the Month of February , 2015

A. REVENUES/OTHER FIN. SOURCES	ANNUAL BUDGET	ACTUAL FOR MONTH	ACTUAL FOR YEAR	ENCUMBRANCES	BALANCE	PERCENT
1000 Local Taxes	0	.00	.00		.00	0.00
2000 Local Nontax	100	9.82	61.88		38.12	61.88
3000 State, General Purpose	0	.00	.00		.00	0.00
4000 State, Special Purpose	85,255	.00	.00		85,255.00	0.00
5000 Federal, General Purpose	0	.00	.00		.00	0.00
8000 Other Agencies and Associates	0	.00	.00		.00	0.00
9000 Other Financing Sources	0	.00	.00		.00	0.00
A. TOTAL REV/OTHER FIN.SRCS(LESS TRANS)	85,355	9.82	61.88		85,293.12	0.07
B. 9900 TRANSFERS IN FROM GF	0	.00	.00		.00	0.00
C. Total REV./OTHER FIN. SOURCES	85,355	9.82	61.88		85,293.12	0.07
D. EXPENDITURES						
Type 30 Equipment	173,500	.00	117,948.69	1,090.00	54,461.31	68.61
Type 60 Bond Levy Issuance	0	.00	.00	0.00	.00	0.00
Type 90 Debt	0	.00	.00	0.00	.00	0.00
Total EXPENDITURES	173,500	.00	117,948.69	1,090.00	54,461.31	68.61
E. OTHER FIN. USES TRANS. OUT (GL 536)	0	.00	.00			
F. OTHER FINANCING USES (GL 535)	0	.00	.00			
G. EXCESS OF REVENUES/OTHER FIN SOURCES OVER(UNDER)EXP/OTH FIN USES (C-D-E-F)	88,145-	9.82	117,886.81-		29,741.81-	33.74
H. TOTAL BEGINNING FUND BALANCE	90,200		208,516.56			
I. G/L 898 PRIOR YEAR ADJUSTMENTS(+OR-)	XXXXXXXXX		.00			
J. TOTAL ENDING FUND BALANCE (G + H +OR- I)	2,055		90,629.75			

K. ENDING FUND BALANCE ACCOUNTS:		
G/L 810 Restricted For Other Items	0	.00
G/L 819 Restricted for Fund Purposes	2,055	90,629.75
G/L 889 Assigned to Fund Purposes	0	.00
G/L 890 Unassigned Fund Balance	0	.00
TOTAL	2,055	90,629.75

STUDENTS

Prohibition of Harassment, Intimidation and Bullying

The District is committed to a safe and civil educational environment for all students, employees, parents/legal guardians, volunteers and community members that is free from harassment, intimidation or bullying. "Harassment, intimidation or bullying" means any intentionally written message or image, including those that are electronically transmitted, verbal, or physical act, including but not limited to one shown to be motivated by race, color, religion, ancestry, national origin, gender, sexual orientation including gender expression or identity, mental or physical disability, or other distinguishing characteristics, when an act:

- Physically harms a student or damages the student's property;
- Has the effect of substantially interfering with a student's education;
- Is so severe, persistent, or pervasive that it creates an intimidating or threatening educational environment;
- Has the effect of substantially disrupting the orderly operation of the school.

Nothing in this section requires the affected student to actually possess a characteristic that is a basis for the harassment, intimidation, or bullying.

"Other distinguishing characteristics" can include but are not limited to: physical appearance, clothing or other apparel, socioeconomic status, and weight.

"Intentional acts" refers to the individual's choice to engage in the act rather than the ultimate impact of the action(s).

Behaviors/Expressions

Harassment, intimidation or bullying can take many forms including but not limited to, slurs, rumors, jokes, innuendos, demeaning comments, drawings, cartoons, pranks, gestures, physical attacks, threats, or other written, oral, physical or electronically transmitted messages or images.

This policy is not intended to prohibit expression of religious, philosophical, or political views, provided that the expression does not substantially disrupt the educational environment. Many behaviors that do not rise to the level of harassment, intimidation or bullying may still be prohibited by other district policies or building, classroom, or program rules.

Training

This policy is a component of the district's responsibility to create and maintain a safe, civil, respectful and inclusive learning community and will be implemented in conjunction with comprehensive training of staff and volunteers.

Prevention

The district will provide students with strategies aimed at preventing harassment, intimidation and bullying. In its efforts to train students, the district will seek partnerships with families, law enforcement and other community agencies.

Interventions

Interventions are designed to remediate the impact on the targeted student(s) and others impacted by the violation, to change the behavior of the perpetrator, and to restore a positive school climate.

The district will consider the frequency of incidents, developmental age of the student, and severity of the conduct in determining intervention strategies. Interventions will range from counseling, correcting behavior and discipline, to law enforcement referrals.

Students with Individual Education Plans or Section 504 Plans

If allegations are made that a student with an Individual Education Plan (IEP) or Section 504 Plan has been the target of harassment, intimidation or bullying, the school will convene the student's IEP or Section 504 team to determine whether the incident had an impact on the student's ability to receive a free, appropriate public education (FAPE). The meeting will occur regardless of whether the harassment, intimidation, or bullying incident was based on the student's disability. During the meeting, the team will evaluate issues such as the student's academic performance, behavioral issues, attendance, and participation in extracurricular activities. If a determination is made that the student is not receiving a FAPE as a result of the harassment, intimidation or bullying incident, the district will provide all necessary additional services and supports, such as counseling, monitoring and/or reevaluation or revision of the student's IPE of Section 504 plan, to ensure the student receives a FAPE.

Retaliation/False Allegations

Retaliation is prohibited and will result in appropriate discipline. It is a violation of this policy to threaten or harm someone for reporting harassment, intimidation, or bullying.

It is also a violation of district policy to knowingly report false allegations of harassment, intimidation, and bullying. Students or employees will not be disciplined for making a report in good faith. However, persons found to knowingly report or corroborate false allegations will be subject to appropriate discipline.

Compliance Officer

The superintendent will appoint a compliance officer as the primary district contact to receive copies of all formal and informal complaints and ensure policy implementation. The name and contact information for the compliance officer will be communicated throughout the district.

The superintendent is authorized to direct the implementation of procedures addressing the elements of this policy.

Cross References:	Policy 2161	Special Education and Related Services for Eligible Students
	Policy 3200	Rights and Responsibilities
	Policy 3210	Nondiscrimination
	Policy 3240	Student Conduct
	Policy 6590	Sexual Harassment
Legal Reference:	RCW 28A.300.285	Harassment, intimidation and bullying prevention policies-Model policy and procedure-Training materials-Posting on website – Rules-Advisory Committee
	WAC 392-190-059	Harassment, intimidation and bullying prevention policy and procedure – School Districts
Management Resources:	*2014 – December Issue*	
	2010 – December Issue	
	2008 – April Issue	

2002 – April Issue

Date: 6/24/02; 5/23/05; 7/21/08; 1/24/11; 3/23/15

PORT TOWNSEND SCHOOL DISTRICT NO. 50

~~MANAGEMENT SUPPORT~~ ***PERSONNEL***

~~Risk Management~~

~~HARASSMENT POLICY~~ SEXUAL HARASSMENT

The district is committed to a positive and productive education and working environment free from discrimination, including sexual harassment. The district prohibits sexual harassment of students, employees and others involved in school district activities.

Sexual harassment occurs when:

A. Submitting to the harasser's sexual demands is a stated or implied condition of obtaining an education or work opportunity or other benefit;

B. Submission to or rejection of sexual demands is a factor in an academic, work or other school-related decision affecting an individual; or

C. Unwelcome sexual or gender-directed conduct or communication interferes with an individual's performance or creates an intimidating, hostile or offensive environment.

Sexual harassment can occur adult-to-student, student-to-adult, student-to-student, adult-to-adult, male-to-female, female-to-male, male-to- male, and female-to-female.

The district will take prompt, equitable, and remedial action within its authority on reports, complaints, and grievances alleging sexual harassment that come to the attention of the district, either formally or informally. Allegations of criminal misconduct will be reported to law enforcement and suspected child abuse will be reported to law enforcement or Child Protective Services. Persons found to have been subjected to sexual harassment will have appropriate school district services made reasonably available to them and adverse consequences of the harassment shall be reviewed and remedied, as appropriate.

Engaging in sexual harassment will result in appropriate discipline or other appropriate sanctions against offending students, staff, and contractors. Anyone else who engages in sexual harassment on school property or at school activities will have their access to school property and activities restricted, as appropriate.

Retaliation against any person who makes or is a witness in a sexual harassment complaint is prohibited and will result in appropriate discipline. The district will take appropriate actions to protect involved persons from retaliation.

It is a violation of this policy to knowingly report false allegations of sexual harassment. Persons found to knowingly report or corroborate false allegations will be subject to appropriate discipline.

The superintendent ~~shall~~ ***will*** develop and implement formal and informal procedures for receiving, investigating, and resolving complaints or reports of sexual harassment. The procedures will include reasonable and prompt time lines and delineate staff responsibilities under this policy. All staff are responsible for receiving informal complaints and reports of sexual harassment and informing appropriate district personnel of the complaint or report for investigation and resolution. All staff are also responsible for directing complainants to the

formal complaint process.

The superintendent ~~shall~~ ***will*** develop procedures to provide age-appropriate information and education to district staff, students, parents, and volunteers regarding this policy and the recognition and prevention of sexual harassment. At a minimum, sexual harassment recognition and prevention and the elements of this policy will be included in staff, student, and regular volunteer orientation. This policy and the procedure, ***which includes the complaint process,*** ~~shall~~ ***will*** be posted in each district building in a place available to staff, students, parents, volunteers, and visitors. The policy ***and procedure*** ~~shall~~ ***will*** be reproduced in each student, staff, volunteer, and parent handbook.

The superintendent shall make an annual report to the board reviewing the use and efficacy of this policy and related procedures. Recommendations for changes to this policy, if applicable, shall be included in the report. The superintendent is encouraged to involve staff, students, and volunteers and parents in the review process.

Cross References:	Policy 3200	Student Rights and Responsibilities
	Policy 3207	Prohibition of Harassment, Intimidation and Bullying
	Policy 3210	Nondiscrimination
	Policy 3240	Student Conduct
	Policy 3421	Child Abuse and Neglect
	Policy 5010	Nondiscrimination and Affirmative Action
	Policy 5281	Disciplinary Action and Discharge
Legal References:	RCW 28A.640.020	Regulations, guidelines to eliminate discrimination – Scope – Sexual harassment policies
	WAC 392-190-~~056~~ ~~Through~~ 058	Sexual harassment
Management Resources	Policy News	December 2014

Date: 6/17/93; 1/25/99; 2/12/01; 11/24/03; 1/24/11_____

PORT TOWNSEND SCHOOL DISTRICT NO. 50