Supplementary Table 1. Results summary of studies reviewed in the current paper. Studies are organized alphabetically by section they first appear in the paper.

Authors	N	VGP Expertise VGP Training	Tasks	Results	Correlations
1. Hand-Eye Coordination and Reaction Time					
Griffith et al. (1983)	31 VGP, 31 NVGP	VGP Expertise: 32.97 (27.14) months exp 5.74 (10.24) hours per wk	Rotary Pursuit	VGP > NVGP	None
Orosy-Fildes & Allan (1989)	20 NVGP	VGP training: 15 minutes	Reaction Time	Post. Train > Pre. Train	N/A
Yuji (1996)	17 VGP, 17 NVGP	VGP Expertise: Enthusiasm towards video-games	Colour and Shape Discrimination	VGP > NVGP	N/A
2. Spatial Visualization					
De Lisi & Cammarano (1996)	110 NVGP	VGP training: 2, 30 minute sessions over 2 weeks	Mental Rotation	VGP training effect: Post. Train > Pre. Train Female control VGP training effect: Post. Train > Pre. Train	In-game performance/Mental rotation performance (+)
De Lisi & Wolford (2002)	47 NVGP	VGP training: 11, 30 minute sessions over 1 month	Mental Rotation	VGP training effect: Post. Train > Pre. Train	N/A
Dorval & Pepin (1986)	70 NVGP	VGP training: 40 game plays	Spatial Relations	VGP training effect: Post. Train > Pre. Train	N/A

Study	Sample	Training/Expertise	Tasks	Results	Moderators
Gagnon (1985)	58 NVGP	VGP training: 5 hours	Spatial Orientation Spatial Visualization Visual Pursuit Hand-eye coordination	VGP training effect: Post. Train > Pre. Train for female spatial visualization only	Prior VGP experience/Visual Pursuit (+), Spatial Visualization (+), Hand-eye coordination (-)
McClurg & Chaillè (1987)	57 VNGP	VGP training: 45 minutes, twice a week for 6 weeks	Mental Rotation	Post. Train > Pre. Train	N/A
Okagaki & Frensch (1994)	Exp. 1: 57 NVGP Exp. 2: 53 NVGP	VGP training: 12, 30 minute sessions	Mental Rotation Spatial Visualization	VGP training effect: Post. Train > Pre. Train	N/A
Sims & Mayer (2002)	Exp. 1: 53 VGP, 45 NVGP Exp. 2: 24	VGP expertise: >60 lines on Tetris Video-game training: 12, 1 hour sessions over 4 weeks	Mental Rotation	VGP > NVGP only for stimuli similar to in-game items	None
Subrahmanyam et al. (1994)	61 NVGP	VGP training: 3, 45 minute sessions, maximum 1 week apart	Computerized Spatial Skills Battery	VGP training effect: Post. Train > Pre. Train	N/A

3. Visuospatial Attention

Study	Sample	Training/Expertise	Tasks	Results	Moderators
Boot et al. (2008)	Exp. 1: 11 VGP, 10 NVGP Exp. 2: 82 NVGP	VGP expertise: 7 hours per week over past 2 years VGP training: 15, 1.5 hour sessions over 4-5 weeks	Attentional Blink Corsi Block-Tapping Enumeration Functional Field of View Multiple Object-Tracking Mental Rotation O-Span Ravens Matrices Spatial 2-Back Task Switching Tower of London Visual Shrt. Term Memory	VGP > NVGP for multiple object tracking, mental rotation, task switching and visual shrt. term memory only Control VGP training effect: Post. Train > Pre. Train for mental rotation	N/A

Dye & Bavelier (2010)	Exp. 1: 58 VGP, 103 NVGP Exp. 2: 55 VGP, 99 NVGP Exp. 3: 56 VGP, 95 NVGP	VGP expertise: Self-report playing 'first' or 'third' person 'shooters'	Useful Field of View Attentional Blink Multiple Object Tracking	VGP > NVGP, young VGPs display capabilities exceeding or expected of older NVGPs	N/A
Dye et al. (2009)	56 VGP, 75 NVGP	VGP expertise: Self-report playing of any action video-game over the past 6 months	Attentional Network Task	VGP > NVGP across all age ranges	N/A
Green & Bavelier (2003)	Exp. 1: 8 VGP, 8 NVGP Exp. 2: 13 VGP, 13 NVGP Exp. 3: 8 VGP, 8 NVGP Exp. 4: 8 VGP, 8 NVGP Exp. 5: 17 NVGP	VGP expertise: 4, 1 hour sessions per day over past 6 months VGP training: 1 hour per day over 10 days	Flanker Compatibility Enumeration Useful Field of View Attentional Blink	VGP > NVGP Action VGP training effect: Post. Train > Pre. Train	VGP improvement/task improvement (marginal +)
Green & Bavelier (2006a)	Exp. 1: 8 VGP, 8 NVGP Exp. 2: 8 VGP, 8 NVGP Exp. 3: 32 NVGP	VGP expertise: 3-4 days per week over past 6 months VGP training: 5 hours per week over 6 weeks	Flanker Compatibility Useful Field of View	VGP > NVGP Action VGP training effect: Post. Train > Pre. Train on useful field of view	None
Green & Bavelier (2006b)	Exp. 1: 13 VGP, 13 NVGP Exp. 2: 17 NVGP Exp. 3: 11 VGP, 11 NVGP Exp. 4: 20 NVGP Exp. 5: 32 NVGP	VGP expertise: 3-4 days a week over past 6 months, 5 hours per week over the past 6 months VGP training: 10 hours over 15 days, 30 hours over 6 weeks	Enumeration Multiple Object Tracking	VGP > NVGP Action VGP training effect: Post. Train > Pre. Train	N/A
Greenfield et al. (1994)	Exp. 1: 8 VGP, 8 NVGP Exp. 2: 40 NVGP	VGP expertise: >200 000 points on Robot Battle	Divided Attention	VGP > NVGP VGP training effect: Post. Train > Pre. Train	N/A

		Video-game training: 5 hours			
Sungur & Boduroglu (2012)	24 VGP, 20 NVGP	VGP expertise: 3-4, 1 hour sessions per week over past 6 months	Multiple Identity Tracking Colour Wheel Useful Field of View	VGP > NVGP	N/A

4. Visual Anticipation and Visual Search Strategies

Bialystok (2006)	40 VGP, 57 NVGP	VGP expertise: Self-report	Simon	VGP > NVGP, simple reaction time benefit	N/A
Castel et al. (2005)	Exp. 1: 20 VGP, 20 NVGP Exp. 2: 10 VGP, 10 NVGP	VGP expertise: 4, 1 hour sessions per week over past 6 months	Inhibition of Return Visual Search	VGP > NVGP, simple reaction time benefit	N/A
Clark et al. (2011)	15 VGP, 20 NVGP	VGP expertise: 6 hours per week over past 6 months	Change Detection	VGP > NVGP	N/A
Hubert-Wallander et al. (2011)	Exp. 1: 10 VGP, 11 NVGP Exp. 2: 19 VGP, 15 NVGP	VGP expertise: 5 hours per week over past year	Visual Search Exogenous Cuing	VGP search rate and reaction time > NVGP search rate and reaction time	N/A
Kuhlman & Beitel (1991)	105	N/A	Basin Timer	N/A	VGP experience/Accuracy (+), consistency of anticipation of coincidence (+)

5. Temporal Dynamics of Sensory Attention

Donohue et al. (2010)	18 VGP, 18 NVGP (9 in-between categories)	VGP expertise: 2 hours per week over past 6 months	Simultaneity Judgement Temporal Order Judgement	VGP point of subjective simultaneity accuracy > NVGP point of subjective simultaneity accuracy	VGP experience/Subjective simultaneity accuracy (+)

Li et al. (2010)	Exp. 1: 9 VGP, 10 NVGP Exp. 2: 9 VGP, 11 NVGP Exp. 3: 25 NVGP	VGP expertise: 5 hours per week over past year VGP training: 50 hours over 9 weeks	Backwards Masking	VGP backwards masking effect < NVGP backwards masking effect Action VGP training effect: Post. Train backwards masking effect < Pre. Train backwards masking effect	N/A
West et al. (2008)	Exp. 1: 12 VGP, 12 NVGP Exp. 2: 12 VGP, 12 NVGP	VGP expertise: 3-4, 2 hour sessions per week over the past six months	Temporal Order Judgement Signal Detection	VGP point of subjective simultaneity accuracy < NVGP point of subjective simultaneity accuracy, VGP sensitivity > NVGP sensitivity (all except easiest and hardest condition)	N/A

6. Exogenous and Endogenous Attention

Chisholm et al. (2010)	15 VGP, 15 NVGP	VGP expertise: 3 hours per week over past 6 months	Attentional Capture	VGP > NVGP, VGP less affected by distractors	N/A

7. Task Switching

Colzato et al. (2010)	17 VGP, 17 NVGP	VGP expertise: 4 sessions per week over past 6 months	Task Switching	VGP > NVGP	N/A
Karle et al. (2010)	Exp. 1: 30 VGP, 26 NVGP Exp. 2: 20 VGP, 20 NVGP	VGP expertise: 4, 1 hour sessions per week over past 6 months	Task Switching	VGP > NVGP only when proactive interference is low	N/A
Nelson & Strachan (2009)	Exp. 1: 20 NVGP Exp. 2: 20 NVGP	VGP training: 1 hour	Location Detection Figure Matching	Action VGP training effect:	N/A

| | | | | Post. Train RT > Pre. Train RT Control VGP training effect: Post. Train ACC. > Pre. Train ACC | |

8. Fundamental Properties of the Visual System and Use of Sensory Evidence

Buckley et al. (2010)	10 VGP, 10 NVGP	VGP expertise: 1 hour per day, at least 4 days per week over past 6 months	Goldmann Kinetic Perimetry	VGP (both central and peripheral) visual field > NVGP	N/A
Green & Bavelier (2007)	Exp. 1: 10 VGP, 10 NVGP Exp. 2: 32 NVGP	VGP expertise: 5 hours per week over past 6 months VGP training: 30 hours over 6-8 weeks	Visual Crowding	VGP > NVGP (including 'T' alone) Action VGP training effect: Post. Train > Pre. Train for crowding only	N/A
Green et al. (2010)	Exp. 1: 11 VGP, 12 NVGP Exp. 2: 11 VGP, 12 NVGP Exp. 3: 25 NVGP Exp. 4: 11 VGP, 12 NVGP	VGP expertise: 5 hours per week over past year VGP training: 50 hours over 12 weeks	Visual Motion Direction Discrimination Auditory Tone Location Discrimination	VGP sensory accumulation rate > NVGP sensory accumulation rate, VGP evidence threshold < NVGP evidence threshold Action VGP training effect: Post. Train sensory accumulation rate > Pre. Train sensory accumulation rate, Post. Train evidence threshold < Pre. Train evidence threshold	N/A

Li et al. (2009)	Exp. 1: 21 VGP, 19 NVGP Exp. 2: 35 NVGP	VGP expertise: 5 hours per week over past 6 months VGP training: 50 hours over 5-9 weeks	Contrast Sensitivity	VGP > NVGP Action VGP training effect: Post. Train > Pre. Train	N/A

9. Video-Game Play as a Cognitive Intervention

Basak et al. (2008)	40 NVGP	VGP training: 15, 1.5 hour sessions over 5 weeks	Attentional Blink Enumeration Functional Field of View Mental Rotation N-Back O-Span Ravens Matrices Stopping Task Switching Visual Shrt. Term Memory	VGP training effect: Post. Train > Pre. Train for mental rotation, N-back, Ravens matrices, task switching, visual short term memory	N/A
Clark et al. (1987)	14 NVGP	VGP training: 14 hours over 7 weeks	Colour Discrimination	VGP training effect: Post. Train > Pre. Train	N/A
Drew & Waters (1986)	15 NVGP	VGP training: 1.5 hours, twice a week for 2 months	WAIS Purdue Pegboard Rotary Pursuit	VGP training effect: Post. Train > Pre. Train for all measures	VGP train group/ coordination (+), driving (+), accidents at home (-)
Dustman et al. (1992)	60 NVGP	VGP training: 1 hour, 3 times a week over 11 weeks	Visual Sensitivity Symbol Digit Modality Trails B Stroop Finger Tapping Visual Retention Mult. Meas. of Memory Profile of Mood States Sternberg	VGP training effect: Post. Train > Pre. Train for Sternberg only.	N/A

Goldstein et al. (1997)	22 NVGP	VGP training: 5 hours per week over 5 weeks	Sternberg Stroop Emotional Well-Being	VGP training effect: Post. Train > Pre. Train for Stroop and Emotional Well-Being	N/A

10. Neuroimaging and Video-Game Play

Bavelier et al. (2012)	12 VGP, 14 NVGP	VGP expertise: 5 hours per week over past year	Target Detection	VGP > NVGP NVGP Fronto-Parietal Activation > VGP Fronto-Parietal Activation for high load, VGP Visual Area MT < NVGP Visual Area MT for distractors	N/A
Granek et al. (2010)	13 VGP, 13 NVGP	VGP expertise: 12.8 (8.6) hours per week over past 3 years	Visuomotor Transformation	VGP show > frontal activation, NVGP > parietal activation	N/A
Haier et al. (1992)	24 NVGP	VGP training: 30-45 minutes, 5 times a week for 4 to 8 weeks	Tetris	VGP training effect: Whole brain metabolism Post. Train < Pre. Train	VGP improvement/Whole brain metabolism (-)
Mishra et al. (2011)	21 VGP, 20 NVGP	VGP expertise: 9 (2.7) hours per week over past year	Target Detection	VGP > NVGP, VGP SSVEP Amplitude < NVGP SSVEP Amplitude for unattended stimuli, VGP P300 Amplitude > NVGP P300 Amplitude for high load	N/A

11. Challenges to the Video-Game Play Literature

Feng et al. (2007)	Exp. 1: 24 VGP, 24 NVGP Exp. 2: 20 NVGP	VGP expertise: 4 hours per week VGP training: 10 hours over 4 weeks	Useful Field of View	VGP > NVGP Action VGP training effect: Post. Train > Pre. Train,	N/A

				no loss in gains 5 months after training ceased	
Irons et al. (2011)	Exp. 1: 19 VGP, 13 NVGP Exp. 2: 17 VGP, 15 NVGP	VGP expertise: 3-4 days per week over previous 6 months	Flanker Compatibility Eriksen Flanker	NVGP positive compatibility at high load/VGP negative compatibility at high load	N/A
Murphy & Spencer (2009)	32 VGP, 29 NVGP	VGP expertise: 4, 1 hour sessions per week over past 6 months	Attentional Blink Useful Field of View Inattentional Blindness Repetition Blindness	VGP > NVGP in attentional blink at shortest target interval only	N/A
Quaiser-Pohl et al. (2006)	861	N/A	Mental Rotation	Action VGP in males only, predicts superior mental rotation performance	N/A
Spence et al. (2009)	20 NVGP (10 matched male-female pairs)	VGP training: 10 hours over 4 weeks	Attentional Visual Field	Post. Train > Pre. Train, no loss in gains 4 months after training ceased	N/A