



**Brief Inventory of Technology Self-Efficacy (BITS)
and
Brief Inventory of Technology Self-Efficacy – Short Form (BITS-SF)
Manual**

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The BITS, the BITS-SF, and this manual are free to download and use non-commercially from www.bitssurvey.com.

The BITS

The Brief Inventory of Technology Self-Efficacy (BITS) and Brief Inventory of Technology Self-Efficacy – Short Form (BITS-SF) assess computer self-efficacy (CSE). Both measures were created by Arne Weigold, Ph.D., to determine people’s levels of confidence engaging in novice, advanced, and expert computer skills and are free to download and use non-commercially (Weigold & Weigold, 2021).

BITS and BITS-SF

The BITS is an 18-item measure with one score each for its three subscales (Novice, Advanced, and Expert), whereas the BITS-SF is a six-item measure with one total score that signifies where people fall on the novice to expert continuum. Both measures assess confidence across the same computer skill domains and can be used in both research and applied settings. The choice of which one to use should be based on the needs of the user. In short:

BITS

- Three scores provide detailed information about CSE
- Fast to administer
- Application example: CSE assessment for only one or two computer skill levels for potential trainees
- Application example: CSE measurement for separate computer skill levels in multivariate research

BITS-SF

- One simple total CSE score
- Even faster to administer
- Application example: CSE assessment for students or job applicants
- Application example: CSE measurement as part of demographics in research

More detailed information about the BITS and the BITS-SF can be found on their respective pages (BITS and BITS-SF) on this website, and they can be downloaded in different formats from this website’s downloads page.

Languages

The BITS and BITS-SF are currently only available in English. However, work is being done to translate them into different languages. You can check back on this page or email the author to request notification to find out when more languages are published.

If you are interested in translating and validating the BITS, it is strongly recommended to contact the author first to be provided with resources, collaborate if interested, and to make sure that no two people develop the same language in parallel.

Contact

You can contact Arne Weigold, Ph.D., at email@bitssurvey.com if you have any questions.

BITS

The BITS provides information about individuals' computer self-efficacy (CSE) for three levels of computer skills: Novice (basic computer use), Advanced (skills beyond basic use that do not typically require specialized knowledge), and Expert (skills typically requiring specific training). Each level corresponds to one subscale consisting of six items covering the same six domains of computer skills (hardware, networking, operating system, software, internet, troubleshooting).

Settings

To date, the psychometric properties of the BITS have only been established for the computerized version (Weigold & Weigold, 2021a). However, studies are currently being developed to assess paper-and-pencil and interview versions, based on previous research (Weigold et al., 2013; 2018), with the expectation being that they will produce similar results. The BITS and its manual are free to download and use non-commercially as long as the author is credited, and the author's copyright notice is included. Its content should not be modified without the author's permission, but its format can (and should) be modified depending on how it is given in order to adjust to the demands of the medium or software package in which it is being used.

Scoring and Three Dimensions

Participants respond to the 18 items using a six-point Likert scale ranging from *Not at all Confident* to *Completely Confident*. The six items corresponding to each of the three sub-scales are then averaged, with higher numbers indicating higher confidence for completing novice, advanced, or expert computer skills. The three sub-scale scores should be examined separately, and a total score should not be calculated. Those with more advanced scores at a higher level are typically highly confident in their ability to engage in lower-level skills. If the goal is to obtain a single total CSE score, then the BITS-SF should be used instead of the BITS.

Psychometric Properties

The three-factor structure of the BITS was assessed using Mechanical Turk workers and confirmed in college students (Weigold & Weigold, 2021a, see also Weigold & Weigold, 2021b). The BITS showed evidence of convergent and discriminant validity in college students across 21 measures of similar (e.g., CSE) and dissimilar (e.g., personality) constructs. Additionally, college students differed significantly in their scores on the Advanced and Expert levels (but not Novice) based on their self-rated computer skill (e.g., novice, advanced) and major (e.g., education, engineering). Finally, the BITS showed evidence of strong test-retest reliability for up to eight weeks in Mechanical Turk workers. See Weigold and Weigold (2021a) for details.

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BITS-SF

The BITS-SF was developed to be a shorter measure of individuals' computer self-efficacy (CSE) that provides a single total CSE score representing an individual's overall level of CSE. It consists of the strongest items on the BITS, two from each of the three levels (Novice, Advanced, and Expert) and one from each of the six domains of computer skills (hardware, networking, operating system, software, internet, troubleshooting).

Settings

To date, the psychometric properties of the BITS-SF have only been established for the computerized version (Weigold & Weigold, 2021a). However, studies are currently being developed to assess paper-and-pencil and interview versions, based on previous research (Weigold et al., 2013; 2018), with the expectation being that they will produce similar results. The BITS-SF and its manual are free to download and use non-commercially as long as the author is credited, and the author's copyright notice is included. Its content should not be modified without the author's permission, but its format can (and should) be modified depending on how it is given in order to adjust to the demands of the medium or software package in which it is being used.

Scoring and Single Score

Participants respond to items using *Yes* or *No*. Responses are added, with higher numbers of *Yes* responses indicating higher levels of CSE. Numerically, total scores can range from 0 (all *No* responses) to 6 (all *Yes* responses). A score of 0 indicates negligible CSE, whereas scores of 1-2 indicate CSE for the novice computer skill level, 3 indicates CSE for the novice-to-advanced level, 4 for the advanced level, 5 for the advanced-to-expert level, and 6 for the expert level. Only a total score should be used.

Psychometric Properties

Latent class analysis in a sample of Mechanical Turk workers and college students indicated the presence of three classes underlying the BITS-SF, which correspond to the novice, advanced, and expert dimensions assessed by the BITS (Weigold & Weigold, 2021a, see also Weigold & Weigold, 2021b). These three classes had significantly different mean scores across a variety of CSE measures, with those in the novice class generally having the lowest scores and those in the expert class the highest. Overlapping scores across classes also showed evidence for novice-to-advanced and advanced-to-expert scores. The BITS-SF showed evidence of convergent and discriminant validity in college students across 21 measures of similar (e.g., CSE) and dissimilar (e.g., personality) constructs. Finally, college students differed significantly in their BITS-SF scores based on their self-rated computer skill (e.g., novice, advanced) and major (e.g., education, engineering). See Weigold and Weigold (2021a) for details.

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About the Author



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Please feel free to download a copy of my [curriculum vitae](#) or visit me on [Google Scholar](#).

Contact

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Brief Inventory of Technology Self-Efficacy (BITS)

For each of the following statements, please indicate your level of confidence that you can do the activity. There are no right or wrong answers.

①	②	③	④	⑤	⑥	
Not at all confident					Completely confident	
1. I can create a personal homepage.	①	②	③	④	⑤	⑥
2. I can change a computer's volume.	①	②	③	④	⑤	⑥
3. I can write emails.	①	②	③	④	⑤	⑥
4. I can use programming languages to write code.	①	②	③	④	⑤	⑥
5. I can analyze computer error log files.	①	②	③	④	⑤	⑥
6. I can connect headphones to a computer.	①	②	③	④	⑤	⑥
7. I can edit a computer's registry.	①	②	③	④	⑤	⑥
8. I can browse the internet.	①	②	③	④	⑤	⑥
9. I can use advanced functions in office software.	①	②	③	④	⑤	⑥
10. I can connect to the internet.	①	②	③	④	⑤	⑥
11. I can restart a computer.	①	②	③	④	⑤	⑥
12. I can set up a router.	①	②	③	④	⑤	⑥
13. I can use a computer's task manager.	①	②	③	④	⑤	⑥
14. I can design professional websites.	①	②	③	④	⑤	⑥
15. I can set up multiple computer monitors.	①	②	③	④	⑤	⑥
16. I can troubleshoot computer problems.	①	②	③	④	⑤	⑥
17. I can overclock a computer.	①	②	③	④	⑤	⑥
18. I can configure a large computer network.	①	②	③	④	⑤	⑥

Please go to the next page for scoring.

Brief Inventory of Technology Self-Efficacy (BITS)**Scoring**

For each of the three subscales (Novice, Advanced, and Expert), all of the responses are averaged to arrive at the final score with a range of 1 (lowest confidence) through 6 (highest confidence).

Novice subscale items	2	3	6	8	10	11	
	_____	_____	_____	_____	_____	_____	÷ 6 = _____
Advanced subscale items	1	9	12	13	15	16	
	_____	_____	_____	_____	_____	_____	÷ 6 = _____
Expert subscale items	4	5	7	14	17	18	
	_____	_____	_____	_____	_____	_____	÷ 6 = _____

Name _____

Novice Score _____

Advanced Score _____

Expert Score _____

Please refer to the BITS Manual or www.bitssurvey.com for the interpretation of the scores.

Brief Inventory of Technology Self-Efficacy – Short Form (BITS-SF)

For each of the following statements, please indicate if you believe that you can do the activity. There are no right or wrong answers.

Yes

I believe I can do this.

No

I do not believe I can do this.

-
- | | | |
|---|---------------------------|--------------------------|
| 1. I can use a computer's task manager. | <input type="radio"/> Yes | <input type="radio"/> No |
| 2. I can restart a computer. | <input type="radio"/> Yes | <input type="radio"/> No |
| 3. I can use programming languages to write code. | <input type="radio"/> Yes | <input type="radio"/> No |
| 4. I can browse the internet. | <input type="radio"/> Yes | <input type="radio"/> No |
| 5. I can set up a router. | <input type="radio"/> Yes | <input type="radio"/> No |
| 6. I can overclock a computer. | <input type="radio"/> Yes | <input type="radio"/> No |
-

Scoring

The score is calculated by summing all Yes responses.

Name _____

Score _____

The score corresponds to the following levels:

Negligible	Novice	Novice to Advanced	Advanced	Advanced to Expert	Expert
0	1 to 2	3	4	5	6