

Recognizing Skills by using Skills Indicator[®], a 360° instrument

Validation of Skills Indicator[®]

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Introduction¹

In recent years there has been a renewed interest in the value of 360° feedback. As a learning and development tool it has many benefits. It allows learners to get high quality feedback about their skills and performance; it allows learners to test their self assessments against the assessments of others; it is useful in identifying individual and group development needs and as a post development evaluation tool.

Unfortunately, for most people the idea of getting structured feedback is anxiety provoking. Their concerns centre on the following issues:

- What is going to be said of me?
- Am I going to be criticised?
- How is this information going to be used?
- Who will see it?
- Is this a threat?

When people feel anxious or fearful, these feelings are manifested in a number of predictable ways, especially in resistance. The following types of resistance are common:

- Resistance to participating in the process
- Resistance to accepting the results
- Resistance to doing anything useful with the results
- General badmouthing of the process to others

How can 360° feedback be constructed and delivered in such a way that it generates the benefits while keeping fear at a minimum? How can we take the anxiety out of the process?

Psychologists, Eve Ash and Peter Quarry (of Ash.Quarry Productions) have designed a 360° feedback system that is hitting the mark in countries around the world. Their range of paper and internet based *Skills Indicators*:

- Minimize fear and anxiety
- Minimize time and effort to complete the process
- Minimize cost
- Maximize learner and organisational benefits

Design To Minimize Anxiety

How do the Ash.Quarry Skills Indicators work and why does their design minimize fear and anxiety? The answer lies in the three core design principles followed:

1. Keep It Short & Simple ('KISS')
2. Keep the process RELEVANT
3. Hand back CONTROL to the learner

Design Principle 1: Keep It Short & Simple ('Kiss')

The learner answers 40 simple questions about how they rate their skills on a 5-point scale. This 'Self Assessment Questionnaire' takes about 15 minutes to complete.

¹ For this text, Quarry, P. (?). *Taking The Anxiety Out Of 360° Feedback*. Ash.Quarry Productions. <http://www.skillsindicator.com> is used.

The learner then asks for feedback from others (typically 3 to 5 people who know the learner's work). This step takes another few minutes.

In the paper-based version, the collection and collation of the feedback data takes a further 15 minutes. And the results are presented as a one-page summary, which allows for quick and easy prioritising of development needs. Any discrepancies between self-assessment scores and feedback from others can also be quickly identified.

The internet version calculates all scores automatically.

The emphasis is on making the process the means to an end...not an end in itself.

This leaves the learner more time to focus on the ACTION that arises out of the 360° process.

This action flows from the answers to these questions:

a. What are my strengths?

b. What areas do I need to work on?

c. Which discrepancies between my self- assessment and the assessments of others do I need to explore more fully?

So, the key Adult Learning Principle of 'Immediate Application' has been followed in the design of the Ash.Quarry 360° feedback process!

Ash.Quarry has also kept the instructions as simple as possible, so that the level of literacy and numeracy skills required to use the Skill Indicators is as low as possible. This increases the possible range of people who can use the process.

Design Principle 2: Keep The Process Relevant

In the previous section the Adult Learning principle of 'Immediate Application' was mentioned. Another Adult Learning Principle is 'Relevance'. Any learning experience has to be relevant, otherwise learners will switch off. The Ash.Quarry Skills Indicators focus on real life behaviours and skills that are needed in today's fast paced workplace.

Each separate Skills Indicator covers a different set of 20 skills. At the time of writing 25 Skills Indicators are available, covering skill sets like Assertiveness Skills, Communication Skills, Emotional Competence, Management Skills, Negotiation Skills, Time Management and Work Effectiveness.

Design Principle 3: Hand Back Control To The Learner

Psychological theory and practice tells us how to minimize anxiety; by giving as much control back to the learner as possible. The Ash.Quarry approach has been specifically designed to maximize learner control. There are various ways in which the Skills Indicators hand back control to the learner:

1. The learner can choose which Skills Indicator to complete. At the time of writing there are 25 Skills Indicators to choose from. In some situations the learner may not have a choice (such as a needs analysis prior to a specific development program). But in other situations they can choose from the menu of possible skill sets and choose which Skills Indicator best matches their needs or interests.

2. The learner takes control of their own results. A major concern for 360° feedback users is anxiety about who will see the results and how they will be used. The Ash.Quarry approach minimizes anxiety by handing control back to the learner by letting them have control of the results of their 360° feedback experience. Learners 'own' their data and can choose to share it or not. If a manager, team leader or HRD specialist wants to pool the data of a group, there is

a summary of strengths and weaknesses available. But the individual self-assessments and the feedback from others can remain where it belongs, with the learner. The key issue is respect for the ownership of a learner's information!

3. The learner can choose who gives feedback. The issue of the selection of feedback givers is an area of controversy in 360° feedback. Many argue that the feedback givers should be chosen by some other person (e.g.: the learner's manager) and that their identity should remain hidden from the learner (i.e.: anonymous feedback). This supposedly increases the chance that the feedback will be honest, as there is no fear of retribution. Ash.Quarry believes the opposite, that the learner should choose the feedback givers, for the following reasons:

Giving control to the learner is a key Adult Learning Principle and will minimize learner anxiety.

- Learner choice of feedback giver mirrors the real world, where, if you want feedback, you choose someone and ask them for it. You may need training in how to receive feedback (see the award winning Ash.Quarry series Feedback Solutions, which covers all the skills needed to both give and receive feedback). But repeated use of the Skills Indicators helps to create a 'Feedback Culture', where asking for, and getting, feedback is a normal part of the way things are done. Conversely, requiring feedback to be anonymous reinforces a culture of secrecy and discomfort with feedback.

- One of the extraordinary benefits of 360° feedback is that discrepancies between self-assessments and the assessments of others can be identified. In other words, learners may believe they have high levels of a particular skill while others may believe that skill needs developing, or vice versa. When this happens, learners should seek further information by going to the feedback giver and asking clarifying questions. If the feedback givers are anonymous, learners cannot approach them for this information, so this avenue for development is limited.

But where anonymity is desired, the Ash.Quarry Skills Indicators can accommodate this requirement.

Working With 360° Feedback

In conclusion, 360° feedback allows opportunities for increasing understanding and awareness, improving communication, identifying learning and development needs, prioritizing learning activities, motivating, building confidence and program evaluation.

- Prior to a leadership or management development program, each participant completes the Management Skills Indicator to identify their individual strengths and weaknesses, in order to establish their personal learning goals. The trainer/facilitator can collect summary data from each participant to identify the group's needs and plan and prioritize the program's content accordingly.

- A training program designer builds a Skills Indicator into a new program as a pre- and post-test way of evaluating the behavioural outcomes.

- A team leader or manager offers a team member a Skills Indicator as part of a Personal Development Plan.

- At a Performance Appraisal an employee receives feedback about a particular area of his/her job that needs developing. The employee, though, is unclear about the problem and/or unsure if the feedback is accurate. Manager and employee agree that the employee will complete a Skills Indicator. This will give the employee the opportunity to get more specific and useful information.
- A mentor suggests that a protégée completes a Skills Indicator in order to get a more accurate understanding of their strengths and weaknesses.
- An employee may be interested in his/her own development and request to complete a Skills Indicator (SI) as part of a self directed learning effort.

Availability of Skills Indicators

The complete product portfolio of Skills Indicators is exploited by Skills Indicator B.V. a group company of TFC Training Facilities Center in The Netherlands. TFC owns all intellectual property rights and supplies HR-professionals worldwide with both online and on paper versions of this serie of instruments. The product portfolio covers three series: management skills, communication skills and personal development skills, 25 skills in total. Additionally a (growing) list of 15 so called Job Indicators was developed, covering the relevant sets of competences for specific professions. The full range of Indicators is available in several languages and is distributed worldwide through a network of area partners. Anonymous versions and customised versions including management tools for company use can be developed on request. Further commercial information and sales addresses are available at the website www.skillsindicator.com.

Validity of the results

The question arises whether the use of SI really gives a good insight into one's personal skills. In other words, are the conclusions drawn after using SI valid? Valid means that what is supposed to be measured is measured.

It is often said that an instrument is valid. Strictly speaking, this is inaccurate. Only inferences made upon the use of an instrument can be valid.

Validity is strongly related to reliability. Reliability is a measure that tells us how precise the outcome is. However, validity and reliability are two separate things; both have to be determined.

The **reliability** can be determined based upon the scores of the (online) Skills Indicators used. Statistical software, like SPSS, has a function to calculate Crohnbach's alpha, the measure for reliability most widely used.

Validity cannot be determined by doing calculations on the results in a database. A judgement about validity has to be underpinned by the opinions of users and/or experts.

Krathwohl (1998) distinguishes two kinds of validity: internal and external validity. Internal validity is about the credibility of the conclusions drawn. External validity is about whether the conclusions drawn can be generalized for future use and other target groups.

The internal validity is determined by consulting users and feedback givers. About the external validity: we will assume that if the use of SI leads to conclusions that are internally valid, the external validity is also OK. If valid conclusions have been drawn in the past, there

is no reason why that should not be the case in the future. The circumstances in which SI is used will not alter (much).

Method

Reliability

Reliability will be determined from the database with the outcomes of the uses of the online Dutch version of SI. We will limit ourselves to the top four Skills Indicators: Communication, Management, Personal Effectiveness and Time Management.

First of all, a factor analysis will be carried out in order to determine the independency of the questions. After that, Crohnbach's alpha will be determined as a measure of reliability.

Internal validity

Internal validity will be determined by sending a questionnaire to users and feedback givers.

This questionnaire will contain:

- Questions about the context in which SI is used
- Questions about the use of SI
- Questions about their opinions about SI

The outcomes of this questionnaire will lead to a conclusion about the validity of SI.

Results

For all analyses SPSS 12.0.1 was used.

Reliability

Reduction of the data:

- All records where not all questions were filled in were removed
- All records from people who only filled in SI for a survey were removed

That left 5695 records:

- 1770 users
- 3925 feedback givers

Factor analysis

Indicator	Significant correlations between questions	Factors	
		Number	Explain together ... % of the variance
	<i>(Total amount of correlations: 780)</i>		
Communication			
Users	0	9	67
Feedback givers	0	12	77
Management			
Users	9	9	69
Feedback givers	0	10	76
Time-management			
Users	199	12	68
Feedback givers	13	14	81
Personal effectiveness			
Users	46	11	64
Feedback givers	0	13	74

The number of significant correlations between questions is small. Except for the Time management questionnaire filled in by the users. The results on this one show a great amount of significant correlations. This questionnaire needs to be reviewed.

The first factor by itself usually explains over 50 % of the variance. The second factor mostly not more than 10 %. The rest of the factors explain only little of the variance. Analysis does not deliver clear clusters of questions that give rise to defining a factor. So, reliability can be calculated using all questions.

Reliability

Cronbach's alpha has been calculated.

Indicator	Users		Feedback givers		
	<i>n</i>	<i>Cronbach's alpha</i>	<i>n</i>	<i>Cronbach's alpha</i>	
Communication	710	0,956	1402	0,950	
Management	487	0,947	1428	0,952	
Time management	202	0,896	305	0,937	
Personal effectiveness	371	0,916	790	0,932	

The reliability is high. This is consistent with the high degree of independence of the questions. The lower reliability of the Time management questionnaire is consistent with the large amount of significant correlations found earlier.

Validity

Algemeen

In total 159 users and 240 feedback givers filled in the questionnaire.

1. Were you familiar with the principle of 360 degrees feedback?

	Communication		Management		Personal effectiveness		Time Management		Total	
	#	%	#	%	#	%	#	%	#	%
<i>Users</i>										
Yes	31	50,0	26	66,7	21	55,3	13	65,0	91	57,2
No	31	50,0	13	33,3	17	44,7	7	35,0	68	42,8
<i>Feedback givers</i>										
Yes	38	58,5	56	61,5	40	74,1	15	50,0	149	93,7
No	27	41,5	35	38,5	14	25,9	14	46,7	90	56,6
?							1	3,3	1	0,6

Interpretation

About half of the users and the feedback givers is familiar with 360° feedback.

2. What was your opinion of the instructions for use of Skills Indicator Online?

	Communication		Management		Personal effectiveness		Time Management		Total	
	#	%	#	%	#	%	#	%	#	%
<i>Users</i>										
Very bad										
Bad	2	3,2	1	2,6					3	1,9
Average	1	1,6	1	2,6	3	7,9	1	5,0	6	3,8
Sufficient	18	29,0	11	28,2	15	39,4	13	65,0	57	35,8
Good	36	58,1	25	64,1	19	50,0	5	25,0	85	53,5
Very good	4	6,5	1	2,6	1	2,6	1	5,0	7	4,4
No opinion	1	1,6							1	0,6
n	62		39		38		20		159	
<i>Feedback givers</i>										
Very bad										
Bad	1	1,5	1	1,1					2	0,8
Average			1	1,1			2	6,7	3	1,3
Sufficient	23	35,4	22	24,2	14	25,9			59	24,6
Good	38	58,5	60	65,9	37	68,5	15	50,0	150	62,5
Very good	1	1,5	2	2,2	1	1,9	10	33,3	14	5,8
No opinion	2	3,0	5	5,5	2	3,7	3	10,0	12	5,0
n	65		91		54		30		240	

Interpretation

Only a few find the instructions insufficient:

- About 6 % of the users
- About 2 % of the feedback givers

3. Did you answer the questions honestly?

	Communication		Management		Personal effectiveness		Time Management		Total	
	#	%	#	%	#	%	#	%	#	%
<i>Users</i>										
Strongly agree	28	45,2	23	59,0	15	39,5	13	65,0	79	49,7
Agree	32	51,6	16	41,0	23	60,5	6	30,0	77	48,2
Disagree										
Strongly disagree										
Don't know	2	3,2					1	5,0	3	1,9
No answer										
n	62		39		38		20		159	
<i>Feedback givers</i>										
Strongly agree	30	46,2	48	52,7	27	50,0	13	43,4	118	49,2
Agree	34	52,3	40	44,0	23	42,6	15	50,0	112	46,7
disagree	1	1,5	1	1,1					2	0,8
Strongly disagree										
Don't know			2	2,2	2	3,7	1	3,3	5	2,1
No answer					2	3,7	1	3,3	3	1,3
n	65		91		54		30		240	

Interpretation

The questionnaires were filled in very honestly.

Interaction between user and feedback giver(s)?

4. Are the results a reason to want to communicate with the feedback giver(s)?

	Communication		Management		Personal effectiveness		Time Management		Total	
	#	%	#	%	#	%	#	%	#	%
<i>Users</i>										
Strongly agree	7	11,3	1	2,6	3	7,9	2	10,0	12	7,5
Agree	31	50,0	29	74,4	20	52,7	9	45,0	89	56,0
Disagree	14	22,6	3	7,7	11	28,9	1	5,0	29	18,2
Strongly disagree	1	1,6	2	5,1	1	2,6	2	10,0	6	3,8
Don't know	7	11,3	3	7,7	3	7,9	5	25,0	18	11,3
No answer	2	3,2	1	2,5			1	5,0	4	2,5
n	62		39		38		20		159	

Interpretation

About two thirds of the users would like to communicate with the feedback giver(s).

4. Would you have preferred to answer the questions anonymously?

	Communication		Management		Personal effectiveness		Time Management		Total	
	#	%	#	%	#	%	#	%	#	%
<i>Feedback givers</i>										
Strongly agree	1	1,5	5	5,5	1	1,9	1	3,3	8	3,3
Agree	5	7,7	13	14,3	4	7,4	5	16,7	27	11,3
Disagree	36	55,4	42	46,2	26	48,2	12	40,0	116	48,3
Strongly disagree	16	24,6	21	23,1	18	33,3	7	23,3	62	25,8
Don't know	7	10,8	10	10,9	4	7,4	5	16,7	26	10,8
No answer					1	1,9			1	0,4
n	65		91		54		30		240	

Interpretation

Only a few of the feedback givers would have preferred to answer the questions anonymously (about 15 %).

5. Would you have liked to elaborate on the feedback you gave?

	Communication		Management		Personal effectiveness		Time Management		Total	
	#	%	#	%	#	%	#	%	#	%
<i>Feedback givers</i>										
Strongly agree	3	4,6	14	15,4	8	14,8	2	6,7	27	11,3
Agree	38	58,5	46	50,5	35	64,7	13	43,3	132	55,0
Disagree	18	27,7	16	17,6	5	9,3	8	26,7	47	19,6
Strongly disagree			4	4,4			1	3,3	5	2,1
Don't know	6	9,2	11	12,1	5	9,3	5	16,7	27	11,3
No answer					1	1,9	1	3,3	2	0,8
N	65		91		54		30		240	

Interpretation

About two thirds of the feedback givers would have liked interaction with the users.

The results on these three questions show that SI is preferably used in a situation in which interaction is possible.

Users

6. With what goal did you use Skills Indicator Online?

Mostly:

- As preparation for a course
- For use in a course
- For self analysis

7. Did you find it (emotionally) difficult to answer the answers honestly?

	Communication		Management		Personal effectiveness		Time Management		Total	
	#	%	#	%	#	%	#	%	#	%
Strongly agree										
Agree	4	6,5	5	12,8	9	23,7	3	15,0	21	13,2
Disagree	33	53,2	22	56,4	20	52,6	8	40,0	83	52,2
Strongly disagree	21	33,9	11	28,2	8	21,1	8	40,0	48	30,2
Don't know	3	4,8			1	2,6	1	5,0	5	3,1
No answer	1	1,6	1	2,6					2	1,3
n	62		39		38		20		159	

Interpretation

Most users did not find it (emotionally) difficult to answer the answers honestly (about 87 % of the users). In combination with question 3 this shows that SI is a good basis for self and/or 360° analysis.

8. Did answering the questions of Skills Indicator Online give you a good picture of your strengths and weaknesses?

	Communication		Management		Personal effectiveness		Time Management		Total	
	#	%	#	%	#	%	#	%	#	%
Strongly agree			1		1	2,6	2	10,0	4	2,5
Agree	55	88,7	30	77,0	36	94,8	15	75,0	136	85,5
Disagree	3	4,8	5	12,8			1	5,0	9	5,7
Strongly disagree			1	2,6	1	2,6	1	5,0	3	1,9
Don't know	4	6,5	2	5,2			1	5,0	7	4,4
No answer										
n	62		39		38		20		159	

Interpretation

Answering the questions of Skills Indicator Online gave about 90 % of the users a good picture of their strengths and weaknesses in the chosen skills.

9. Did the feedback of the feedback giver(s) add to the picture that arose from your usage of SI?

	Communication		Management		Personal effectiveness		Time Management		Total	
	#	%	#	%	#	%	#	%	#	%
Strongly agree	10	3,3	7	17,9	5	13,2	3	15,0	25	15,7
Agree	42	67,7	25	64,1	25	65,8	14	70,0	106	66,7
Disagree	2	3,2	3	7,7	5	13,2	1	5,0	11	6,9
Strongly disagree	2	3,2	1	2,6					3	1,9
Don't know	5	8,1	3	7,7	3	7,9	2	10,0	13	8,2
No answer	1	1,6							1	0,6
n	62		39		38		20		159	

Interpretation

For most users (over 80%) the feedback of the feedback giver(s) did add to the picture that arose from their usage of SI.

10. Did the use of Skills Indicator Online give you a good picture of your strengths and weaknesses in the skills chosen?

	Communication		Management		Personal effectiveness		Time Management		Total	
	#	%	#	%	#	%	#	%	#	%
Strongly agree	5	8,1	4	10,3	3	7,9	1	5,0	13	8,2
Agree	48	77,4	27	69,2	33	86,8	15	75,0	123	77,2
Disagree	3	4,8	5	12,8	2	5,3	1	5,0	11	6,9
Strongly disagree	1	1,6					1	5,0	2	1,3
Don't know	3	4,8	1	2,6			2	10,0	6	3,8
No answer	2	3,2	2	5,1					4	2,5
n	62		39		38		20		159	

Interpretation

The use of Skills Indicator Online gave about 85 % of users a good picture of their strengths and weaknesses in the skills chosen.

11. Did the use of Skills Indicator Online help you with your development and career choices?

	Communication		Management		Personal effectiveness		Time Management		Total	
	#	%	#	%	#	%	#	%	#	%
Strongly agree	2	3,2	2	5,1	1	2,6			5	3,1
Agree	31	50,0	17	43,6	18	47,4	8	40,0	74	46,5
Disagree	16	25,8	10	25,6	8	21,1	7	35,0	41	25,8
Strongly disagree	2	3,2	2	5,1	2	5,3	1	5,0	7	4,4
Don't know	10	16,1	7	17,9	8	21,1	4	20,0	29	18,2
No answer	1	1,6	1	2,6	1	2,6			3	1,9
N	62		39		38		20		159	

Interpretation

The use of Skills Indicator Online did help half of the users with their development and career choices.

12. Did the use of Skills Indicator Online lead to changes in the choice of further steps in your career?

	Communication		Management		Personal effectiveness		Time Management		Total	
	#	%	#	%	#	%	#	%	#	%
Strongly agree	2	3,2			1	2,6				
Agree	8	12,9	8	20,5	7	18,4	1	5,0	24	15,1
Disagree	35	65,5	23	59,0	24	63,2	13	65,0	95	59,7
Strongly disagree	5	8,1	6	15,4	2	5,3	3	15,0	16	10,0
Don't know	11	17,7	2	5,1	4	10,5	3	15,0	20	12,6
No answer	1	1,6							1	0,6
N	62		39		38		20		159	

Interpretation

The use of Skills Indicator Online lead to changes in the choice of further steps in the career of about 65 % of the users.

13. Did you use the results of Skills Indicator Online later on?

	Communication		Management		Personal effectiveness		Time Management		Total	
	#	%	#	%	#	%	#	%	#	%
Strongly agree	1	1,6	1	2,6	3	7,9			5	3,1
Agree	21	33,9	17	43,6	4	10,5	8	40,0	50	31,4
Disagree	27	43,5	15	38,5	24	63,2	6	30,0	72	45,3
Strongly disagree	4	6,5	2	5,1	3	7,9	1	5,0	10	6,3
Don't know	8	12,9	3	7,7	3	7,9	4	20,0	18	11,3
No answer	1	1,6	1	2,6	1	2,6	1	5,0	4	2,5
n	62		39		38		20		159	

Interpretation

The results of Skills Indicator Online were used later on by about half of the users of the instruments 'Communication', 'Management' en 'Time Management'.

The results of the instrument 'Personal effectiveness' were used later on by about one fifth of the users.

14. Do the results correspond with the results of other tests or assessments you did in the past?

	Communication		Management		Personal effectiveness		Time Management		Total	
	#	%	#	%	#	%	#	%	#	%
Strongly agree	1	1,6	1	2,6			1	5,0	3	1,9
Agree	26	41,9	19	48,7	20	52,6	10	50,0	75	47,2
Disagree	4	6,5	6	15,4	4	10,5	1	5,0	15	9,4
Strongly disagree	1	1,6	1	2,6					2	1,3
Don't know	29	46,8	11	28,2	14	36,8	7	35,0	61	38,4
No answer	1	1,6	1	2,6			1	5,0	3	1,9
n	62		39		38		20			

Interpretation

The results of users that underwent other tests or assessments correspond well with the results of those tests.

This underpins the hypothesis that using SI can lead to valid conclusions.

15. Do you need personal advice on your development and career, given the results of the feedback?

	Communication		Management		Personal effectiveness		Time Management		Total	
	#	%	#	%	#	%	#	%	#	%
Strongly agree	1	1,6	2	5,1	1	2,6			4	2,5
Agree	10	16,1	10	25,6	9	23,7	5	25,0	34	21,4
Disagree	29	46,8	20	51,3	19	50,0	12	60,0	80	50,3
Strongly disagree	10	16,1	5	12,8	2	5,3	1	5,0	18	11,3
Don't know	12	19,4			7	18,4	2	10,0	21	13,2
No answer			2	5,1					2	1,3
N	62		39		38		20		159	

Interpretation

About a quarter of the users would like personal advice on their development and career, given the results of the feedback.

16. What score would you give to Skills Indicator Online?

	Communication		Management		Personal effectiveness		Time Management		Total	
	#	%	#	%	#	%	#	%	#	%
1	1	1,6	1	2,6			1	5,0	3	1,7
2										
3										
4			1	2,6					1	0,6
5	3	4,8	3	7,7	1	2,6			7	4,4
6	8	12,9	4	10,3	4	10,5	2	10,0	18	11,3
7	21	33,9	13	33,3	21	55,3	8	40,0	63	39,6
8	24	38,7	16	41,0	12	31,6	9	45,0	61	38,4
9	4	6,5							4	2,5
10	1	1,6	1	2,6					2	1,3
No answer										
n	62		39		38		20		159	
m	7,24		7,00		7,16		7,05		7,14	
SD	1,29		1,50		0,72		1,57		1,25	
Without 'ones'										
n	61		38		38		19		159	
m	7,34		7,16		7,16		7,37		7,14	
SD	1,01		1,14		0,72		0,67		1,25	

Interpretation

The '1'-scores weigh heavy in the calculation of the mean and standard deviations, because they represent extreme opinions. That's why mean and standard deviations are also calculated without the '1's.

The appreciation for SI is over '7'.

Feedback givers

17. In your opinion, did you know the user of the Skills Indicator Online well enough to be able to answer the questions?

	Communication		Management		Personal effectiveness		Time Management		Total	
	#	%	#	%	#	%	#	%	#	%
Strongly agree	9	13,8	12	13,2	7	12,9	1	3,3	29	12,1
Agree	48	73,8	67	73,6	35	64,8	22	73,3	172	71,7
Disagree	3	4,6	7	7,7	8	14,8	5	16,7	23	9,6
Strongly disagree	2	3,1					1	3,3	3	1,3
Don't know	3	4,6	5	5,5	4	7,4	1	3,3	13	5,4
No answer										
n	65		91		54		30		240	

Interpretation

In most cases (about 84 %) the feedback givers did know users well enough to be able to give feedback.

18. Could you, by filling in the questionnaire, picture the skills of the users well?

	Communication		Management		Personal effectiveness		Time Management		Total	
	#	%	#	%	#	%	#	%	#	%
Strongly agree	1	1,5	1	1,1	1	1,9	1	3,3	4	1,7
Agree	55	84,6	76	83,5	46	85,2	19	63,3	196	81,7
Disagree	3	4,6	7	7,7	2	3,7	5	16,7	17	7,1
Strongly disagree										
Don't know	6	9,2	7	7,7	5	9,3	4	13,3	22	9,2
No answer							1	3,3	1	0,4
n	65		91		54		30		240	

Interpretation

Most of the feedback givers have the opinion (about 83 %) that, by filling in the questionnaire, they could picture the skills of the users well. In the case of the instrument 'Time management' less of the feedback givers are of that opinion.

19. Does the questionnaire lack important aspects of the skills?

	Communication		Management		Personal effectiveness		Time Management		Total	
	#	%	#	%	#	%	#	%	#	%
Yes	4	6,2	9	9,9	4	7,4	3	10,0	20	8,3
No	61	93,8	82	90,1	50	92,6	26	86,7	219	91,3
?							1	3,3	1	0,4
n	65		91		54		30		240	

Interpretation

More than 90 % of the feedback givers did not feel important aspects were missing.

20. Did your relationship with the user influence the way in which you answered the questions?

	Communication		Management		Personal effectiveness		Time Management		Total	
	#	%	#	%	#	%	#	%	#	%
Strongly agree	5	7,7	2	2,2	1	1,9			8	3,3
Agree	30	46,2	34	37,4	19	35,2	13	43,3	96	40,0
Disagree	21	32,3	39	42,9	23	42,6	12	40,0	95	39,6
Strongly disagree	5	7,7	8	8,8	3	5,6	4	13,3	20	8,3
Don't know	4	6,2	8	8,8	8	14,8	1	3,3	21	8,8
No answer										
n	65		91		54		30		240	

Interpretation

This question is not well formulated. The interpretation is difficult because the influence can be either positive or negative.

21. Did filling out the questionnaire make you think about your own skills?

	Communication		Management		Personal effectiveness		Time Management		Total	
	#	%	#	%	#	%	#	%	#	%
Strongly agree	2	3,1	2	2,2	1	1,9	3	10,0	8	3,3
Agree	38	58,5	54	59,3	31	57,4	13	43,3	136	56,7
Disagree	15	23,1	23	25,3	12	22,2	7	23,3	57	23,8
Strongly disagree			1	1,1	2	3,7			3	1,3
Don't know	9	13,8	11	12,1	8	14,8	7	23,3	35	14,6
No answer	1	1,5								
n	65		91		54		30		240	

Interpretation

Filling out the questionnaire made most feedback givers (60 %) think about their own skills.

Discussion

Summary

General

159 users and 240 feedback givers filled out the questionnaire.

About half of the users and the feedback givers is familiar with 360° feedback.

Only a few find the instructions for the use of Skills Indicator Online insufficient.

The questionnaire(s) of Skills Indicator Online were filled out very honestly.

Interaction between user and feedback giver(s)?

Many users would like to interact with the feedback giver(s).

Almost no feedback givers cater for anonymity.

A lot of feedback givers would like to interact with the users.

Most feedback givers show great commitment to the 360° process.

SI is preferably used in a setting in which interaction about the results of SI is possible.

Users

SI is mostly used:

- As preparation for a course
- For use in a course
- For self analysis

Only a few found it difficult to fill out the SI questionnaires . In combination with the outcomes of question 3 this leads to the conclusion that the filled out questionnaire is a good basis for self and 360° analysis.

Filling out the SI questionnaires in itself already gave a good picture of the strengths and weaknesses in the skill chosen. This underpins the conclusion that the use of SI can lead to valid inferences about the skills.

Feedback is seen as added value.

The results from questions 8 and 9 show that SI is used both as a self analysis instrument and as a feedback instrument.

SI is valued highly as an instrument to track down strengths and weaknesses in the skill chosen.

For about half of the users SI is a means for making choices about their own development and career . This does not hold for a great number of users. The reason for this is unclear. Further research is necessary.

The use of SI did not lead to changes in the choice of next career steps for two thirds to three quarters of the users.

About half of the users of the instruments 'Communication', 'Management' and 'Time management' use the results of SI later on. Twenty percent of the users of the instrument 'Personal effectiveness' use the results of SI later on.

Users that did other tests and/or assessments previously, found that the results of those tests correspond to the outcomes of SI.

The appreciation of SI is over '7'.

Feedback givers

In most cases the feedback givers knew the users well enough to be able to give meaningful feedback.

By filling out the questionnaire most feedback givers could picture the abilities on the chosen skill well.

Most feedback givers are of the opinion that no important issues are missing from the SI questionnaires.

These two results underpin the hypothesis that using SI can lead to valid inferences about the skills of the user.

Filling out the questionnaire made a lot of feedback givers think about their own skills.

The validity of SI

As shown before, the outcomes of the questionnaire in combination with the high reliability underpin the hypothesis that using SI can lead to valid inferences about the skills of the user. Strictly speaking, this underpins the *internal* validity. To decide about external validity we have to ask ourselves if the results can be generalised.

Generalisation towards other (new) users. These users are part of the same target group. There is no reason why these users would differ in their opinions. The important question is the relevance of the sample. Those that filled in the questionnaire took the effort to fill out a SI questionnaire. This group used SI as intended. With some caution it can be concluded that there is external validity in this respect. Generalisation to other instruments: the outcomes on the analysed instruments correspond highly. There are few differences between the instruments. So, there is no reason to suspect that other instruments would lead to other results. With the necessary caution the conclusion can be drawn that external validity is fulfilled in this respect as well.

Concluding: using SI can lead to valid inferences about the skills of the user.

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