



WP1 – Final Item Selection for DIMI, 12-18 years

DIMI citation:

Laaber, F., Florack, A., Koch, T., & Hubert, M. (2023). Digital maturity: Development and validation of the digital maturity inventory (DIMI). *Computers in Human Behavior*, 143, 107709. <https://doi.org/10.1016/j.chb.2023.107709>

Formula for creating an overall Digital Maturity Score:

1. Create an average score for each dimension
2. Multiply these average scores with their respective weights, then add these for the overall score:
$$\text{DM Score} = \text{AutonomyChoice_score} \times 9.91 + \text{AutonomyWithin_score} \times 9.39 + \text{Literacy_score} \times 10.17 + \text{Growth_score} \times 10.43 + \text{Risk_score} \times 11.73 + \text{EmoNeg_score} \times 10.30 + \text{EmoAgg_score} \times 9.91 + \text{Support_score} \times 9.39 + \text{Respect_score} \times 10.30 + \text{Citizenship_score} \times 8.47$$

(SPSS Syntax appended to this document)

Autonomous Choice to Use Mobile Devices

Using mobile devices out of one's own choice rather than a feeling of obligation or compulsion.

Tænk venligst over **hvor ofte de følgende ting sker for dig** mens du bruger en **mobil enhed** såsom mobiltelefoner, tablets, iPads eller bærbare computere.
Please think about how often the following things happen to you while you are using a mobile device such as mobile phones, tablets, iPads, or laptop computers.

"Når jeg bruger en mobil enhed..."

"When using a mobile device..."

Aldrig (1) - Sjældent (2) - Nogle gange (3) - Ofte (4) - Altid (5)
Never (1) - Rarely (2) - Sometimes (3) - Often (4) - Always (5)



Danish	English	Variable name
er jeg online, fordi jeg føler, at jeg skal være det hele tiden	I am online because I feel like I have to be online all the time	autonomy_c1
er jeg online, fordi jeg ellers ville føle, at jeg går glip af noget	I am online because otherwise I feel like I am missing out on something	autonomy_c2
har jeg følelsen af, at den kontrollerer mit liv	I have the feeling that it is controlling my life	autonomy_c3

$\alpha = .77$, $CR = .78$, $AVE = .55$ (N=558)

Reverse coded items: autonomy_c1, autonomy_c2, autonomy_c3

Autonomy Within Digital Contexts

Deliberately choosing which digital contexts to engage with, viewing content which one finds interesting and enjoys.

Tænk venligst over **hvor ofte de følgende ting sker for dig** mens du bruger en **mobil enhed** såsom mobiltelefoner, tablets, iPads eller bærbare computere.

Please think about how often the following things happen to you while you are using a mobile device such as mobile phones, tablets, iPads, or laptop computers.

"Når jeg bruger en mobil enhed..."

"When using a mobile device..."

Aldrig (1) - Sjældent (2) - Nogle gange (3) - Ofte (4) - Altid (5)

Never (1) - Rarely (2) - Sometimes (3) - Often (4) - Always (5)

Danish	English	Variable name
vælger jeg det indhold, som jeg ønsker at se	I choose the content I want to see	autonomy_w1
gør jeg det, som jeg godt kan lide at gøre	I do the things that I like	autonomy_w2
bestemmer jeg, hvad jeg gør	I decide what I do	autonomy_w3

$\alpha = .70$, $CR = .70$, $AVE = .44$ (N=558)

Digital Literacy

The technical skills to use mobile devices and the internet in a safe and effective manner.

Fortæl os venligst hvor sande de følgende udsagn er for dig, når du tænker på, hvordan du bruger internettet og mobile enheder såsom mobiltelefoner, tablets,



iPads eller bærbare computere. Tænk på **hvor sandt det er for dig**, hvis du nu skulle gøre det på egen hånd.

Please tell us how true the following statements are of you when thinking about how you use the internet and mobile devices such as mobile phones, tablets, iPads, or laptop computers. Think about how true this would be of you if you had to do it now, on your own.

Overhovedet ikke sandt for mig (1) - Ikke rigtig sandt for mig (2) - Hverken sandt eller usandt for mig (3) - Mest sandt for mig (4) - Meget sandt for mig (5)
Not at all true of me (1) - Not very true of me (2) - Neither true or untrue of me (3) - Mostly true of me (4) - Very true of me (5)

Danish	English	Variable name
Jeg ved, hvordan man ændrer privatindstillingerne (fx deaktivering af cookies)	I know how to change the privacy settings (for example, deactivate cookies)	literacy_1
Jeg ved, hvordan man tilpasser privatindstillingerne for sociale media sider (fx Instagram, Snapchat, TikTok)	I know how to adjust the privacy settings of social media sites (for example, Instagram, Snapchat, TikTok)	literacy_2
Jeg ved, hvordan man gemmer billeder, dokumenter eller andre filer i skyen (fx Google Drive, iCloud)	I know how to store photos, documents or other files in the cloud (for example, Google Drive, iCloud)	literacy_3

$\alpha = .82$, $CR = .82$, $AVE = .61$ ($N=558$)

Individual Growth in Digital Contexts

The ability to use mobile devices and digital contexts for personal learning and growth.

Tænk venligst over **hvor ofte de følgende ting sker for dig** mens du bruger en **mobil enhed** såsom mobiltelefoner, tablets, iPads eller bærbare computere.

Please think about how often the following things happen to you while you are using a mobile device such as mobile phones, tablets, iPads, or laptop computers.

"Når jeg bruger en mobil enhed..."
"When using a mobile device..."

Aldrig (1) - Sjældent (2) - Nogle gange (3) - Ofte (4) - Altid (5)
Never (1) - Rarely (2) - Sometimes (3) - Often (4) - Always (5)



Danish	English	Variable name
lærer jeg nye ting	I learn new things	growth_1
lærer jeg noget brugbart	I learn something useful	growth_2
lærer jeg nye færdigheder	I learn new skills	growth_3

$\alpha = .81$, $CR = .81$, $AVE = .59$ ($N=558$)

Digital Risk Awareness

Managing risks related to mobile devices and the online environment by being aware of potential dangers and influences.

Tænk venligst over **hvor ofte de følgende ting sker for dig** mens du bruger en **mobil enhed** såsom mobiltelefoner, tablets, iPads eller bærbare computere.
Please think about how often the following things happen to you while you are using a mobile device such as mobile phones, tablets, iPads, or laptop computers.

"Når jeg bruger en mobil enhed..."

"When using a mobile device..."

Aldrig (1) - Sjældent (2) - Nogle gange (3) - Ofte (4) - Altid (5)

Never (1) - Rarely (2) - Sometimes (3) - Often (4) - Always (5)

Danish	English	Variable name
er jeg meget forsigtig	I am very careful	risk_1
er min egen sikkerhed meget vigtig for mig	my own safety is very important to me	risk_2
sørger jeg for at være forsigtig	I make sure to be careful	risk_3

$\alpha = .85$, $CR = .85$, $AVE = .66$ ($N=558$)

Regulation of Negative Emotions in Digital Contexts

The ability to control and effectively regulate negative emotions due to frustrations in digital contexts.

Tænk venligst over **hvor ofte de følgende ting sker for dig** mens du bruger en **mobil enhed** såsom mobiltelefoner, tablets, iPads eller bærbare computere.
Please think about how often the following things happen to you while you are using a mobile device such as mobile phones, tablets, iPads, or laptop computers.

"Når jeg bruger en mobil enhed..."

"When using a mobile device..."

Aldrig (1) - Sjældent (2) - Nogle gange (3) - Ofte (4) - Altid (5)



Never (1) - Rarely (2) - Sometimes (3) - Often (4) - Always (5)

Danish	English	Variable name
og jeg bliver irriteret eller ked af det online, tager det mig lang tid, før jeg får det bedre	and I become annoyed or upset online, it takes me a long time to feel better	emotion_n1
og jeg bliver irriteret eller ked af det online, vil jeg blive ved med at være i dårligt humør i lang tid	and I become annoyed or upset online, I stay in a bad mood for a long time	emotion_n2
og jeg bliver irriteret eller ked af det online, er der kun få ting, der kan få mig til at få det bedre igen	and I become annoyed or upset online, there are only few things that can make me feel better	emotion_n3

$\alpha = .84$, $CR = .85$, $AVE = .65$ ($N=558$)

Reverse coded items: emotion_n1, emotion_n2, emotion_n3

Regulation of Impulses in Digital Contexts

The ability to control one's behaviour and reactions to negative experiences in digital contexts.

Tænk venligst over **hvor ofte de følgende ting sker for dig** mens du bruger en **mobil enhed** såsom mobiltelefoner, tablets, iPads eller bærbare computere.
Please think about how often the following things happen to you while you are using a mobile device such as mobile phones, tablets, iPads, or laptop computers.

"Når jeg bruger en mobil enhed..."
"When using a mobile device..."

Aldrig (1) - Sjældent (2) - Nogle gange (3) - Ofte (4) - Altid (5)
Never (1) - Rarely (2) - Sometimes (3) - Often (4) - Always (5)

Danish	English	Variable name
og nogen kritiserer mig online eller i en besked, reagerer jeg med det samme uden at overveje konsekvenserne	and somebody criticizes me online or in a text, I immediately react without considering the consequences	emotion_a1
og en besked gør mig sur, reagerer jeg hurtigt, men bagefter fortryder jeg den måde hvorpå jeg svarede	and a message makes me angry, I react too quickly and then later regret the way I responded	emotion_a2



og nogen fornærmer mig, prøver jeg på at give igen	and somebody insults me, I try to get back at them	emotion_a3
--	--	------------

$\alpha = .77$, $CR = .78$, $AVE = .54$ ($N=558$)

Reverse coded items: emotion_a1, emotion_a2, emotion_a3

Support-Seeking Regarding Digital Problems

The ability to seek support from others when encountering problems regarding mobile devices or digital contexts.

Tænk venligst over **hvor ofte de følgende ting sker for dig** mens du bruger en **mobil enhed** såsom mobiltelefoner, tablets, iPads eller bærbare computere.
Please think about how often the following things happen to you while you are using a mobile device such as mobile phones, tablets, iPads, or laptop computers.

"Når jeg bruger en mobil enhed..."

"When using a mobile device..."

Aldrig (1) - Sjældent (2) - Nogle gange (3) - Ofte (4) - Altid (5)

Never (1) - Rarely (2) - Sometimes (3) - Often (4) - Always (5)

Danish	English	Variable name
spørger jeg andre om hjælp, når jeg har et problem	I ask others for help when I have a problem	support_1
og jeg ikke ved, hvad jeg skal gøre, spørger jeg andre om hjælp	and I don't know what to do, I ask others for help	support_2
og der er et teknisk problem, spørger jeg andre om hjælp (fx en ven, en forælder, en af mine søskende)	and there is a technical problem, I ask others for help (for example, a friend, parent, sibling)	support_3
og jeg har problemer med andre på internettet, får jeg hjælp	and I have problems with others on the internet, I get help	support_4

$\alpha = .80$, $CR = .81$, $AVE = .52$ ($N=558$)

Respect Towards Others in Digital Contexts

Acting respectfully when engaging with others and in content one shares online.

Tænk venligst over **hvor ofte de følgende ting sker for dig** mens du bruger en **mobil enhed** såsom mobiltelefoner, tablets, iPads eller bærbare computere.



Please think about how often the following things happen to you while you are using a mobile device such as mobile phones, tablets, iPads, or laptop computers.

"Når jeg bruger en mobil enhed..."

"When using a mobile device..."

Aldrig (1) - Sjældent (2) - Nogle gange (3) - Ofte (4) - Altid (5)

Never (1) - Rarely (2) - Sometimes (3) - Often (4) - Always (5)

Danish	English	Variable name
passer jeg på med, hvad jeg siger, hvis jeg er uenig med nogen online, så det jeg siger ikke bliver opfattet som ondsksfuldt	and I disagree with someone, I try not to say anything mean	respect_1
bekymrer jeg mig om andres følelser	I care about the feelings of others	respect_2
sørger jeg for, at billeder, som jeg poster eller sender af andre mennesker, ikke vil gøre dem pinligt berørt eller give dem problemer	I make sure that pictures I post or send of other people will not insult them or get them into trouble	respect_3
respekterer jeg andres meninger og viden	I respect the opinions and knowledge of others	respect_4

$\alpha = .83$, $CR = .83$, $AVE = .55$ ($N=558$)

Digital Citizenship

Using mobile devices and digital contexts to contribute to society and support important causes.

Tænk venligst over **hvor ofte de følgende ting sker for dig** mens du bruger en **mobil enhed** såsom mobiltelefoner, tablets, iPads eller bærbare computere.

Please think about how often the following things happen to you while you are using a mobile device such as mobile phones, tablets, iPads, or laptop computers.

"Når jeg bruger en mobil enhed..."

"When using a mobile device..."

Aldrig (1) - Sjældent (2) - Nogle gange (3) - Ofte (4) - Altid (5)

Never (1) - Rarely (2) - Sometimes (3) - Often (4) - Always (5)

Danish	English	Variable name
bruger jeg den til at forbedre livet i mit nabolag, by eller verden	I use it to improve life in my neighborhood, town or world	citizenship_1
bruger jeg internettet til at støtte kampagner for problemer	I use the internet to support campaigns for issues like	citizenship_2



såsom miljøbeskyttelse eller skaber opmærksomhed om klimaforandringer	environmental protection or to spread awareness for climate change	
bruger jeg den til at forsvare ting, der virkelig betyder noget i verden	I use it to stand up for things that really matter in the world	citizenship_3

$\alpha = .85$, $CR = .85$, $AVE = .66$ ($N=558$)

SPSS Syntax for the Digital Maturity Score

#recode reverse scored items

RECODE autonomy_c1 (5=1) (4=2) (3=3) (2=4) (1=5) INTO autonomy_c1r.
EXECUTE.

RECODE autonomy_c2 (5=1) (4=2) (3=3) (2=4) (1=5) INTO autonomy_c2r.
EXECUTE.

RECODE autonomy_c3 (5=1) (4=2) (3=3) (2=4) (1=5) INTO autonomy_c3r.
EXECUTE.

RECODE emotion_n1 (5=1) (4=2) (3=3) (2=4) (1=5) INTO emotion_n1r.
EXECUTE.

RECODE emotion_n2 (5=1) (4=2) (3=3) (2=4) (1=5) INTO emotion_n2r.
EXECUTE.

RECODE emotion_n3 (5=1) (4=2) (3=3) (2=4) (1=5) INTO emotion_n3r.
EXECUTE.

RECODE emotion_a1 (5=1) (4=2) (3=3) (2=4) (1=5) INTO emotion_a1r.
EXECUTE.

RECODE emotion_a2 (5=1) (4=2) (3=3) (2=4) (1=5) INTO emotion_a2r.
EXECUTE.

RECODE emotion_a3 (5=1) (4=2) (3=3) (2=4) (1=5) INTO emotion_a3r.
EXECUTE.

#computing scale scores

COMPUTE
AutonomyChoice_score=MEAN.2(autonomy_c1r,autonomy_c2r,autonomy_c3r).
EXECUTE.

COMPUTE
AutonomyWithin_score=MEAN.2(autonomy_w1,autonomy_w2,autonomy_w3).

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement no 870578.



EXECUTE.

COMPUTE Literacy_score=MEAN.2(literacy_1,literacy_2,literacy_3).
EXECUTE.

COMPUTE Growth_score=MEAN.2(growth_1,growth_2,growth_3).
EXECUTE.

COMPUTE Risk_score=MEAN.2(risk_1,risk_2,risk_3).
EXECUTE.

COMPUTE EmoNeg_score=MEAN.2(emotion_n1r,emotion_n2r,emotion_n3r).
EXECUTE.

COMPUTE EmoAgg_score=MEAN.2(emotion_a1r,emotion_a2r,emotion_a3r).
EXECUTE.

COMPUTE Support_score=MEAN.3(support_1,support_2,support_3,support_4).
EXECUTE.

COMPUTE Respect_score=MEAN.3(respect_1,respect_2,respect_3,respect_4).
EXECUTE.

COMPUTE Citizenship_score=MEAN.2(citizenship_1,citizenship_2,citizenship_3).
EXECUTE.

#Creating weighted dimension scores using the mean scores of expert importance rating (as seen in Rijdsdijk et al., 2007).

COMPUTE Literacy_Pweighted=10.17 * Literacy_score.
EXECUTE.

COMPUTE Growth_Pweighted=10.43 * Growth_score .
EXECUTE.

COMPUTE AutonomyC_Pweighted=9.91 * AutonomyChoice_score.
EXECUTE.

COMPUTE AutonomyW_Pweighted=9.39 * AutonomyWithin_score.
EXECUTE.



```
COMPUTE EmotionN_Pweighted=10.30 * EmoNeg_score.  
EXECUTE.
```

```
COMPUTE EmotionA_Pweighted=9.91 * EmoAgg_score.  
EXECUTE.
```

```
COMPUTE Risk_Pweighted=11.73 * Risk_score.  
EXECUTE.
```

```
COMPUTE Citizenship_Pweighted=8.47 * Citizenship_score.  
EXECUTE.
```

```
COMPUTE Respect_Pweighted=10.30 * Respect_score.  
EXECUTE.
```

```
COMPUTE Support_Pweighted=9.39 * Support_score.  
EXECUTE.
```

#creating composite measure by adding the weighted dimension scores

```
COMPUTE DigMat_Pcomposite=(Literacy_Pweighted + Growth_Pweighted +  
AutonomyC_Pweighted +  
AutonomyW_Pweighted + EmotionN_Pweighted + EmotionA_Pweighted +  
Risk_Pweighted + Citizenship_Pweighted +  
Respect_Pweighted + Support_Pweighted).  
EXECUTE.
```

