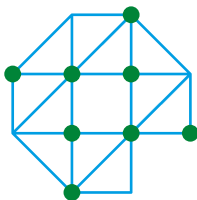
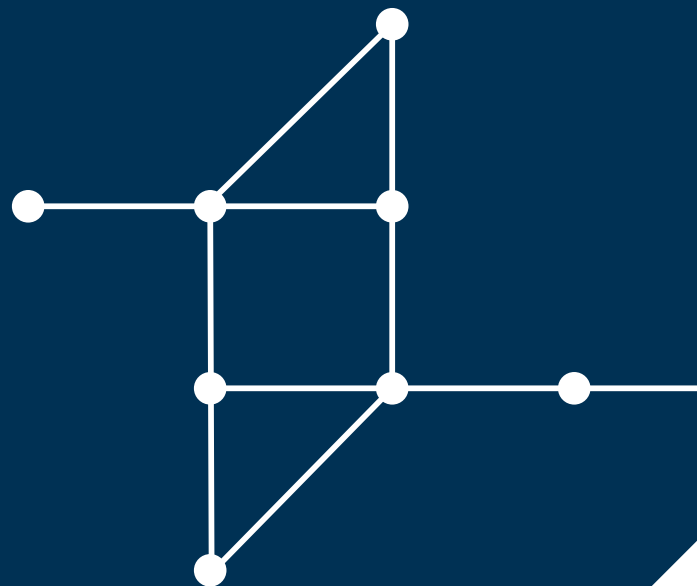




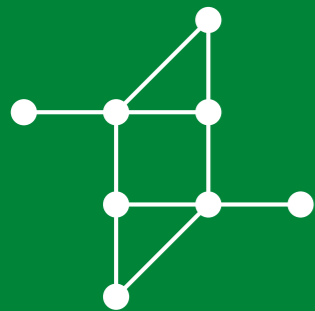
# The integral IT motion sensor

A guide to accelerate  
educational innovation  
with IT



**Acceleration plan**  
Educational innovation  
with ICT

 Facilitating professional  
development of lecturers



## The integral IT motion sensor

A guide to accelerate educational innovation with IT

Acceleration Plan Educational Innovation with IT  
Facilitating professional development for lecturers

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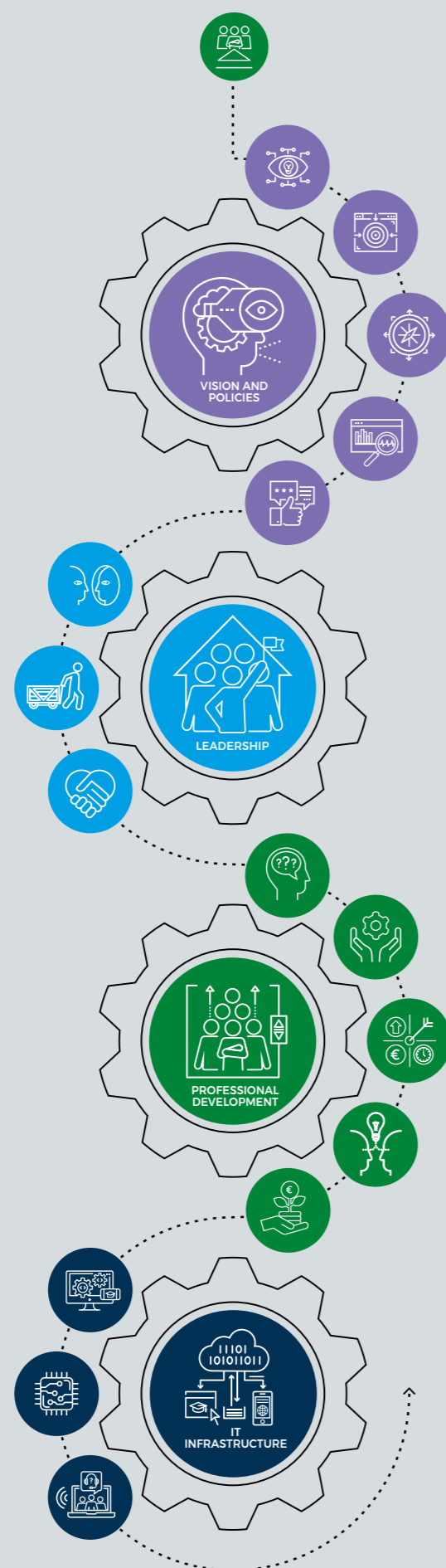
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**Acceleration plan**  
Educational innovation  
with ICT

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## Background

This guide describes the use of the integral IT motion sensor, an instrument you can use to enable thought and action about educational innovation using IT within your institution. The integral IT motion sensor has been developed under the auspices of the Acceleration Plan for Educational Innovation using IT.

Since the start of the Covid-19-virus spread in the Netherlands, and the accompanying measures, teaching using innovative IT resources has become indispensable in higher education. The integral IT motion sensor can be used to systematically review the period from March 2020 until the present together with various stakeholders. It can also help you form an assessment of what is needed to convert the lessons learned and from this period into enduring educational innovations with IT.

Before we discuss the purpose, content and methods of the motion sensor, we will first cover in brief the 'Facilitating professional development for lecturers' Zone, which is actually where development of the integral motion sensor was initiated.

### Acceleration Plan for Educational Innovation with IT

The Acceleration Plan for Educational Innovation with IT is a programme for developing the opportunities that the digital transformation offers higher education in the Netherlands. The mission of the Acceleration Plan is to create scope within a given institution – and in collaboration with other higher education institutions – to move the digital transformation of higher education in the Netherlands forward in a significant way. The Acceleration Plan is a collaboration between the Association of Universities in the Netherlands, the Netherlands Association of Universities of Applied Sciences, and SURF.

It is a four-year programme running from 2019 to 2022 and is based on three ambitions:

- To improve alignment with the labour market;
- To encourage more flexibility in education;
- To make better and smarter use of technology.

The Acceleration Plan focuses on gathering initiatives, know-how, and practical experiences. It aims to work on themes where synergy and collaboration between higher education institutions are possible. The Acceleration Plan is divided into eight Acceleration Zones, in which 39 research universities and universities of applied sciences collaborate. Each Acceleration Zone has an Acceleration Team consisting of representatives from the participating institutions; each team is led by one or two lead representatives. For further information, see [www.versnellingsplan.nl/english](http://www.versnellingsplan.nl/english).

In the Facilitating professional development for lecturers' zone ("lecturer professional development" or "PD"), 19 higher education institutions are working towards finding a way for institutions to assess the extent to which they effectively facilitate and provide PD for lecturers within their organisation in relation to educational innovation using IT.

The motion sensor and this accompanying guide are the result of the 'Integral Approach' work group. The aim of this motion sensor is to make various institutional stakeholders aware of the usefulness, necessity, and opportunities of educational innovation using IT.

### An integral approach to facilitating lecturers' professional development in the field of educational innovation using IT

Educational innovation using IT is an innovation twice over. On the one hand, it is about giving IT a meaningful place in learning. On the other hand, it also concerns innovation of the learning process itself. Lecturers play an important role in this as well. The starting point of all educational innovation is the lecturer. Lecturers are continually working to improve their teaching practice. However, the responsibility for this dual innovation cannot lie solely with lecturers. The entire institution will have to make an effort to achieve the innovation envisaged and an *integral approach* is therefore needed. There are at least two levels where change is required:

**Lecturers.** We ask lecturers to innovate in their teaching practice and to do so with new didactical forms and tools which they are often not entirely comfortable with yet. Making optimum use of the opportunities afforded by IT in education requires new knowledge and skills. This means that there must be scope for professional development. This includes, for example, the scope for experimentation, for working in professional learning communities, and for working in lecturer design teams, but also taking part in inspirational activities that give lecturers the stimulus they need.

**The institution's organisation.** The responsibility for educational innovation using IT cannot lie solely with the lecturers. The entire organisation will have to commit to it. This will mean the institution's academies and faculties offering appropriate professional development opportunities, and freeing up time and space for professional development activities and support for them in the broadest possible sense. Organisations will also have to critically examine the role that the IT and HRM departments can play in this process. This double-edged innovation will also require managers who have developed a vision for the use of IT in education, and the qualities that will be needed to realise this vision with their team. Last but not least, educational innovation involving IT will require a vision and policies on the use of IT in education, including strategy development at the institutional level.

## The Integral IT Motion Sensor

### Purpose

The purpose of the integral IT motion sensor is to have a substantive discussion of educational innovation using IT with various stakeholders within the institutions. This includes members of the executive board, HRM, educational support staff, lecturers, and managers. The emphasis should be on facilitating lecturers and their professional development.

This can be done by asking questions such as:

- What can we do within our organisation to facilitate and ensure professional development in the use of IT in education and educational innovation?
- What barriers can we remove and what incentives could we offer?
- Who will be responsible for doing what, and based on which roles and expertise?
- What are we already doing right? What steps do we still have to take?

By having this discussion annually, you will achieve at least the following within your institution:

1. **Enduring awareness.** By talking to each other about educational innovation using IT, the awareness that this is a relevant theme for the entire organisation will flourish. Thinking about where the organisation currently stands, what the intended goals are, and what everyone's role is in achieving this goal will be a shared process.
2. **Motion.** It will then be important for all those involved within the institutions to adapt to their roles from a clear starting point. The integral IT motion sensor will provide specific assistance and a guiding framework for this process.
3. **Acceleration.** Regular discussion based on the IT motion sensor concept will give educational innovation using IT a strong, structural boost. This will enable the organisation to take significant steps in the digital transformation process. Facilitating lecturers will happen more easily, more frequently, and more effectively within this kind of climate.

### Substantive justification

The IT motion sensor consists of four substantive pillars, each of which includes several indicators relating to IT innovation within higher<sup>1</sup> education. The pillars centre around various layers and roles within the organisation, but also represent important components within the process of IT innovation in education<sup>1</sup>. The four pillars are:

1. Vision and Policies
2. Leadership
3. Professional Development
4. IT Infrastructure

The four pillars are like four gears in the big machine of IT innovation in education. They cannot be seen as separate from one another. It is therefore recommended to ensure that the professional development of lecturers is linked to the institution-wide HRM and professional development policies<sup>2</sup>. It will also often be those in leadership positions within the institution who stimulate this professional development.

<sup>1</sup> The literature does not always refer specifically to higher education, but the findings often apply to education in general. For the sake of readability, the term 'education' is used throughout this document.

Below, we provide a justification for each pillar based on the literature, and we list the indicators associated with each pillar. This justification was validated by a group of experts in April 2020.

### Vision and Policies pillar

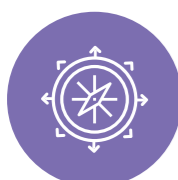
What place does IT have when you talk about high-quality, effective education? This is the focus of the Vision and Policies pillar. This pillar consists of 5 component parts.



First of all, a clear **vision on educational innovation** using IT contributes to the effective use of IT at the level of the institution, faculty, and/or study programme. A clear vision at the level of the institution, faculty, and/or study programme on the use of IT in education, combined with the institution's pedagogical and educational objectives will contribute to the effective use of IT<sup>3</sup>. If all the parties concerned (those in leadership roles, support staff, lecturers, students) support this vision, and the vision shared, this will provide its own incentive for the effective use of IT in the education process<sup>4</sup>.



Based on a clear vision, a policy plan can be developed with specific **objectives for educational innovation using IT**<sup>5</sup>. It is important that the various stakeholders within the organisation recognise these objectives<sup>6</sup>. This will make it more relevant for them to participate in professional development activities<sup>7</sup>. It will then be possible to set out a clear course for a certain period based on these objectives. In this way, the institution will start to move<sup>8</sup>. Also, set specific goals that can be achieved in the short term. This will allow those involved to quickly realise the potential of educational innovation and remain motivated<sup>9</sup>.



Lecturers' motivation to integrate IT into their teaching is positively influenced by support from the organisation and from students<sup>10</sup>. By investing in this process, an institution will be able to **manage educational innovation using IT**. This requires certain organisational structures, including a division of tasks and responsibilities concerning IT innovation.



**Monitoring developments on educational innovation using IT** will be necessary in order to measure whether the objectives set are being achieved or are still on course<sup>11</sup>. This will include the systematic evaluation of IT innovations to ensure their quality<sup>12</sup>. Interim evaluations and reflection will allow IT innovations to be fine-tuned and deployed more widely<sup>13</sup>.



Finally, IT innovations in education can be given an extra boost by means of **professional development and rewards**. An institution's professional development policy is often implemented by or under the direction of the HR department or internal training department (or 'internal academy'). At the institutional level, various courses and professional development programmes (including the basic qualification of teaching competence (BDB) at universities of applied sciences and the basic teaching qualification (BKO) at research universities). This focus on the (lifelong) development of lecturers,

if integral into educational practice, will also benefit the learning of students<sup>14</sup>. Furthermore, the reward is a crucial factor when it comes to the commitment of lecturers to IT innovation<sup>15</sup>. Lecturers are motivated by recognition and encouragement from those in leadership or management positions, especially when this form of recognition is also described in an institution's official policy documents<sup>16</sup>.

### Leadership pillar

Leaders within an institution have an important role during the process of educational innovation using IT: they are there to initiate actions and to chart the course. Research has shown that they play a pivotal role in initiating and maintaining the momentum of IT innovations in education<sup>17</sup>. This pivotal role applies, on the one hand, to formal managers such as education coordinators, deans or programme directors. On the other hand, there is also growing evidence of the pivotal role that informal leaders play<sup>18</sup>. Informal leaders have influence over their colleagues, but do not hold a formal leadership position.



Formal and informal leaders, first of all, act as **role models** for lecturers<sup>19</sup>. Role models see the benefits of IT innovations and actively ensure their propagation. This provides a stimulus for the use of IT by lecturers and students. A positive attitude towards IT innovation and commensurate IT competence is crucial in this respect<sup>20</sup>.



Furthermore, formal and informal leaders fulfil the role of **pacemakers** who provide a stimulus for educational innovation using IT. Literature increasingly shows the success of transformational leadership in innovation processes. This form of leadership is characterised by the development and propagation of a vision, giving individual attention and interest, and offering intellectual challenges<sup>21</sup>.



A safe **culture of learning and experimentation** is an essential prerequisite for lecturer professional development in the use of IT<sup>22</sup>. It is important that both the managers and his/her direct reports work together on IT innovation<sup>23</sup>. Trust between employees is crucial here<sup>24</sup>.

### Professional Development pillar

Professional development has been found to be a key factor for successful IT integration in education<sup>25</sup>. It is essential that lecturers and staff members can develop their competencies relating to the integration of IT. That is what this pillar focuses on. Various studies have shown that professional development has a significant influence on the quality of IT use and people's attitudes towards IT<sup>26</sup>.



What considerations need to be made when offering professional development opportunities? Firstly, they must be geared to the **professional development needs** of lecturers in relation to IT use<sup>27</sup>. This demand from lecturers is based on several lecturer characteristics. These include knowledge and experience in the field of IT<sup>28</sup>, willingness to participate and self-confidence<sup>29</sup>, or their general attitude and disposition towards IT innovations<sup>30</sup>. It will also be necessary to look at the current teaching practice of lecturers<sup>31</sup>.



Furthermore, the content, form and duration of the **supply** available for **professional development** will need to be scrutinised. Research shows that many professional development programmes focus on basic IT skills. However, it is actually more effective if the focus is on use of IT in the teaching and learning environment<sup>32</sup>. IT is not an end in itself, but a means to achieve learning<sup>33</sup>. For this reason, the content of professional development must focus on the subject matter, subject-specific teaching methods and the learning process of students in a specific subject<sup>34</sup>. Effective forms of professional development are characterised by an emphasis on active learning and learning together with colleagues<sup>35</sup>. The relationship with the lecturer's own teaching practice will also be important, for example, and can be aided by using authentic examples. The duration of professional development refers to the period and number of hours spent on training tasks<sup>36</sup>. Research has shown that the time needed on task is significant. A one-off training session will therefore have little impact.



Lecturers need **time, money and space** for professional development activities<sup>37</sup>. **Facilitating in terms of time** can be ensured by ensuring lecturers can reserve the time in their rosters or by making hours available<sup>38</sup>. Lecturers also need time to experiment with what they have learned in their teaching practice<sup>39</sup>. **Facilitating in terms of money** means that financial resources are needed to ensure lecturers can actually follow a programme of training. **Facilitating in terms of space** means that lecturers should have a certain degree of freedom of choice in shaping their own professional development. This freedom of choice has an impact on the motivation of lecturers<sup>40</sup>.



Lecturers also need space **to share their knowledge**<sup>41</sup>. This sharing of knowledge can take place within the institution among colleagues, such as pioneers who share their innovations within the institution<sup>42</sup>. External knowledge sharing is also possible, for example, with lecturers observing best practices at other institutions<sup>43</sup>. In both cases, knowledge sharing leads to access to and provision of new information.



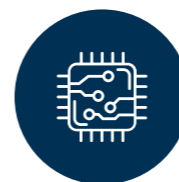
Finally, professional development must be focused on the desired **benefits for the teaching practice**<sup>44</sup>. This is a question of the impact on students and not of the new knowledge and skills of the lecturers. The degree of the impact will depend in part at least on the focus of lecturers and the responsibility they feel for achieving the desired effects<sup>45</sup>.

### IT Infrastructure pillar

Literature has shown that the availability, accessibility and quality of the infrastructure is an important condition for the implementation of IT<sup>46</sup>. If staff members do not have access to the infrastructure, it goes without saying that they will not use it<sup>47</sup>.



Access to infrastructure is therefore crucial. First of all, this means that lecturers and students must have current **software** and that suitable programmes and digital learning resources that support learning and teaching are available<sup>49</sup>.



Access to **hardware** is also needed<sup>50</sup>. For example, a sufficient number of computers must be available and connected to the network<sup>51</sup>.



Finally, enduring **IT and educational support** is needed with technical or pedagogical and didactical questions<sup>52</sup>. For instance, when a staff member's computer crashes. If this technical help is lacking, it can cause frustration and discourage the use of IT<sup>53</sup>. Educational support is needed when the employee needs help in organising the teaching with the use of IT<sup>54</sup>. It is important that this IT and educational support works in tandem and actually facilitates the staff<sup>55</sup>.

### Summary: pillars and indicators

The table below schematically depicts the pillars and indicators of the IT motion sensor. The four pillars correspond to the four discussion cards that can be found in the appendix to this guide. These discussion cards contain the definitions and some sample questions for each indicator. This helps get the discussion about educational innovation and IT going.

Pillars	Indicators
Vision and Policies	Vision on education and educational innovation using IT Policy: Objectives relating to educational innovation using IT Policy: Management of educational innovation using IT Policy: Monitoring developments in educational innovation using IT Policy: Professional development and rewards
Leadership	Role models Pacemakers Culture of learning and experimentation
Professional Development	Professional development needs Professional development supply Facilitation in terms of time, money and space Sharing of knowledge Benefits for the teaching practice
IT Infrastructure	Software Hardware IT and education support

## Working method

It is recommended that a person in charge be designated for the successful deployment of the integral IT motion sensor. That person can then focus on planning the discussions and reporting back within the institution. Furthermore, it is important to:

1. Talk to the right stakeholders
2. Facilitate a good discussion
3. Secure the outcome of the discussion

### Talking to the right stakeholders

As already mentioned, the responsibility for educational innovation using IT cannot lie solely with the lecturers: the entire organisation will need to commit to it. An integral view is necessary in order to truly appreciate the value of using IT for educational innovation within the institution.

To achieve this, it is necessary to ensure that you talk to the right stakeholders. These include the executive board (or a delegated member of the board) and faculty management, study programme managers, HR managers, HR and HRD advisers, educationalists and others involved in professional development, IT education advisers, and representatives from the IT department<sup>11</sup>. Instead of using the instrument at the institutional level, it can also be used at the level of faculties and study programmes, albeit with an appropriately defined scope.

### Getting started

1. Decide which stakeholders you want to talk to. To do this, it is a good idea to consider in advance who might be able to provide useful input based on the pillars and indicators, either from the perspective of their own role and expertise or because they can offer a critical perspective. To do so, a table has been included as an appendix to this guide. Aim for 6 to 8 participants for each discussion so that everyone can be actively engaged.
2. Consideration should be given to checking in advance the extent to which the intended discussion partners might be expected to contribute to the envisaged pillars and indicators, for example, by sharing the relevant discussion card(s) (see appendix).

An example of an internal communication message to inform relevant stakeholders within the institution about the motion sensor is also included. This message can be customised depending on how the motion sensor is deployed.

### Facilitating a good discussion

How does the institution support lecturers in their professional development? To use IT in an effective and meaningful way in education? This is, in any case, what the discussion should be about. The pillars and indicators described will help by providing a common language. They provide structure and a starting point and will help prevent blind spots. Arrange for a moderator (either internal or external) to moderate the discussion.

<sup>11</sup> Of course, the naming conventions may differ from one institution to another, e.g. faculty, academy or institute, study programme director, team leader or education manager, HR adviser, HR business partner, etc.

### The moderator

The moderator's job is to facilitate the discussion and keep it on track. Experience in a role as host, process facilitator, or moderator is needed to ensure a focused and effective discussion. Having some affinity with the topic helps.

### What's needed

Several resources are needed to start the discussion of the IT motion sensor and to evaluate it afterwards. What can you use?

- The **inspirational cartoon** for the IT motion sensor. This includes all pillars and indicators. The inspirational cartoon will encourage participants to think about the substance of the discussion. Use a printed version in A2 format with enough space to make notes. A version with a wide white border is also available.
- The **discussion cards** showing the indicators, definitions, and sample questions for each pillar. These cards are included in the appendix of this guide. Ensure that all indicators are covered. These discussion cards therefore also function as a checklist for the moderator.
- The **reflection cards** to report on the outcomes of the discussion. These are four cards (one for each pillar), which the participants can use to evaluate the current state of affairs within their own institution. Use a large-format printed version (e.g. A3 or A2) and place it on the table. This way, no one will lose sight of the reflection/evaluation.
- If all participants agree, you could consider recording the discussion. This will allow you to replay it and analyse the discussion at a later time.

### Discussion guide

The discussions based on the motion sensor are about the four pillars: Vision and Policies, Leadership, Professional Development, and IT Infrastructure. In the case of small institutions, it may be possible to bring together all the relevant parties for all the pillars in one comprehensive discussion. In medium-sized and large institutions, several will probably be needed for each pillar. At some of the large institutions, there will be little centralised control and faculties (or schools, academies, etc.) will pursue their own autonomous policy. If this is the case, a cycle of discussion can then take place 'locally'. Hint: if there is more than one discussion session, it may be possible to aggregate the outcomes of the various sessions before sharing them.

### Substance

The appendices contain a **discussion card** for each of the pillars. These discussion cards show the indicators for each pillar, including a definition of what each indicator means. It also includes sample questions to get the discussion based on the IT motion sensor started. It is not necessary to address all the questions; this is highly dependent on how the substantive aspect of the discussion progresses. In addition to the four pillars, please dedicate attention to all the indicators.

### Discussion format

What format should you choose for the discussions? Several options are available, such as:

- One-on-one discussions with stakeholders about (primarily) the pillars and indicators that the relevant stakeholder has information on.
- Group discussions with various, similar stakeholders (or contrasting ones) about specific pillars and indicators (or all of them).

### Discussion session calendar

The estimated duration of the discussions<sup>iii</sup> may vary: where all discussion partners participate in a single session, two hours would be a good duration. If separate discussions are held for each pillar, one hour per discussion is probably sufficient.

Discussion item	Substance
Introduction (approx. 5 minutes)	<p>Name, position of moderator</p> <p>Introductions round, where necessary</p> <p>Purpose of this discussion: awareness of the integral approach to educational innovation using IT. A discussion in which it becomes clear that the entire organisation is on the move. This also means that there will be sensitivity towards the interdependence of organisational units, in particular in relation to vision and policies, leadership, professional development (HR) and infrastructure (also refer to the inspirational cartoon).</p> <p>Nature of the discussion: non-controlling, non-competitive, but rather for internal reflection and awareness.</p> <p><i>Corona measures. Say something along the lines of: presumably, under the influence of the Corona situation, you have also seen big changes in the daily realities of education. Almost all lecturers have experienced online education. This could already be seen as an educational innovation using IT. Yet I can imagine this is not the type of innovation that the institution is looking to achieve. I can't wait to hear more...</i></p> <p>Explanation of the discussion. Name the pillars, indicators, and review the sample questions. The indicators will all be covered, either with or without questions. At the end, the participants will fill in the four reflection cards (see appendix), indicating which discussion (pillar X) they are referring to and the corresponding indicators. See also the inspirational cartoon.</p>
Substantive discussion (approx. 45 minutes)	<p>Opening question: when has this discussion been useful for you?</p> <p>Engage: see the discussion cards in the appendix for pillars, indicators and suggested questions.</p>
Conclusion (approx. 10 minutes)	<p>Reporting: how do you rate your institution in the reflection cards (spiderweb)? You can also do this during the discussion, but make sure to conclude it properly here.</p> <p>Looking back on this discussion: what have you gained from the discussion?</p>

<sup>iii</sup> The estimated times allowed have been determined on the basis of discussions for each pillar. For discussions which address all pillars in a single session, the time allowed will have to be amended accordingly.

### Focus areas

- During the discussion, remember to 'LSA': listen, summarise, ask. Try to be aware of differences within the group. Check regularly whether what is said ('I think that...') applies to all participants in the group discussion.
- Nurture what is already in place and ask in particular about what the institution will do *in addition or differently* to bring about educational innovation using IT. In this way, the focus will remain on what can still be developed. There are various discussion techniques that can be used here<sup>iv</sup>. This is part of the moderator's role. Further discussion of this is outside the scope of this document.
- Be alert to *window dressing*, where only the positive points are highlighted or where things are perhaps presented a little too optimistically. Don't be afraid to ask about things that are not going well, but without being judgmental. Focused questioning often helps in this respect.
- Make connections between the various pillars: here they say this, but there they say that: can you explain this? But also: do employees who speak about one pillar (e.g. members of the executive board, those in leadership roles, etc.) consult with people who are Introduction responsible for another pillar (e.g. IT support staff)? Why? Or why not? How can this be improved within the organisation?

### Securing follow-up of the outcomes of the discussion

#### Reflection and reporting

At the end of the discussion – using the IT motion sensor – take a moment to reflect briefly on the outcomes. Briefly summarise topics that have been covered. Participants can then decide together how they can move IT innovation forward within the institution from that moment on. This reflection should therefore always be based on the wishes or ambitions of the institution itself: Where do we stand now, where do we want to go, and what can we do to achieve our goals?

Four different **reflection cards** are available to lend visual support to this joint reflection (see the appendix at the end of this guide). Each card focuses on one of the pillars, with the definition for each pillar also briefly stated. Furthermore, each reflection card shows the indicators within the pillars, divided into quarters of a circle. This contains a scale from 0 to 3, where 0 stands for 'not yet developed/barely present in relation to our ambitions' and 3 stands for 'fully developed/present in relation to our ambitions'. Based on previous outcomes in the discussion, the participants may work together to conclude where they think the institution stands with respect to a particular indicator. If, for example, the vision on educational innovation at the institutional level is fully developed and has been shared within the institution, this indicator can be coloured all the way to the third line. If there is already a vision, but there is room for improvement in terms of propagating this vision within the institution, the participants may then decide to rate this indicator with 1 or 2 points.

<sup>iv</sup> For example, derived from appreciative inquiry or progress-oriented working.



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The moderator guides the reflection session and ensures that every participant has a chance to speak. Each indicator and each pillar will also be covered. At the end of the reflection session, the four quarters of the reflection cards can be laid out alongside each other to help you arrive at an overall picture. It will then be possible to see at a glance which pillars or indicators are well represented, and which pillars or indicators still need further development work by the institution. This too may be briefly discussed.

Take a photo or make a scan of the reflection cards to record the outcomes of this reflection session which you could use for the next follow-up session, where you use the IT motion sensor to help plan your next steps.

#### Evaluation of the use of the motion sensor within the framework of the Acceleration Plan for Teaching Innovation using IT

The IT motion sensor was developed by the 'Facilitating Professional Development for Lecturers' zone of the Acceleration Plan for Educational Innovation with IT. The zone would like to hear about your experiences of the discussion using the integral IT motion sensor. We therefore ask all participants and moderators to complete a short questionnaire immediately following the discussion, preferably using the online response form. Completing this questionnaire will take no more than 10 minutes of your time. The results of this evaluation will be fed back into the development process to help improve the integral IT motion sensor for future use.

#### Who is it for?

There is a questionnaire for the participants in the discussion as well as a separate questionnaire for the moderator.

#### How?

The questionnaire can be completed online or on paper; the online version is strongly preferred. The appendix entitled 'Evaluation questionnaire for participants and moderators' contains the links and QR codes to the online version as well as a paper version of the questionnaires. If paper questionnaires are used, they can be printed and sent to:

University of Twente, Faculty of Behavioural, Management and Social Sciences  
Ravelijn 4343  
For the attention of: Dorien Hopster/Marlies ter Beek  
PO Box 217  
7500 AE Enschede  
the Netherlands

Paper questionnaires may also be scanned and emailed to:  
Dorien Hopster-den Otter, [d.denotter@utwente.nl](mailto:d.denotter@utwente.nl)  
Marlies ter Beek, [m.terbeek@utwente.nl](mailto:m.terbeek@utwente.nl)

## Appendices



## Appendices

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## Example of an internal communication message when using the motion sensor in the context of the Acceleration Plan for Educational Innovation using IT

### Rationale

The integral IT motion sensor was developed on the initiative of the Acceleration Plan for Educational Innovation with IT, Facilitating Professional Development for Lecturers' Zone. The aim of this discussion instrument is to help institutions to work purposefully on accelerating educational innovation using IT. The integral IT motion sensor consists of four conditional pillars and sixteen associated indicators needed to support lecturers in using IT for educational innovation. We want to deploy this tool to all higher education institutions involved in the acceleration zone.

### Purpose of an integral IT motion sensor

Our aim for the integral IT motion sensor is to facilitate a substantive discussion about educational innovation using IT between various stakeholders, such as the executive board, HRM, the internal academy, IT and those in leadership roles. But it raises questions, such as:

- How can we provide our lecturers with the best possible incentives and support in the use of IT in education?
- What barriers can we remove and what incentives could we offer?
- Who will be responsible for doing what, and based on which roles and expertise?

The basic premise of the motion sensor is that accelerating educational innovation using IT will only succeed with the commitment of stakeholders at all levels and within all organisational units. We cannot leave this to our lecturers alone.

### Design of the discussions

[For each institution to decide].

### Required effort

[Depends in part on choices made.] We expect a time investment of [two to four hours] times the number of participants. I am asking you for [...].

### Support offered

A comprehensive guide is available for the deployment of the integral IT motion sensor. This guide outlines the rationale, purpose and basic principles of the motion sensor, offers practical tools for its organisation and implementation, and sketches the outline of a discussion framework. The guide also provides a suggested format for reporting.

### Questions

If you have any questions, please contact [...] in advance.

# the MOTION SENSOR

I SEE A BRIGHT FUTURE FOR IT IN EDUCATION

AND IT'S NOT JUST VIRTUAL ... HOW ARE WE GOING TO DO THIS?

10% OF THE WORKLOAD OF LECTURERS SHOULD CONSIST OF IT DEVELOPMENT!

**VISION & POLICIES**

LET'S DO IT!

WORK VISION PLACE

**Acceleration plan**  
Educational Innovation with IT  
lecturer's professionalisation

**PROFESSIONAL DEVELOPMENT**

YES! EXPERIMENT WITH IT?

KEEP AN EYE ON THE TIME!

- \* Vision on education and educational innovation with IT
- \* Objectives regarding educational innovation with IT
- \* Managing in regard to educational innovation with IT
- \* Monitoring development of educational innovation with IT
- \* Professional development and appreciation

- \* Professional development needs
- \* Professional development offer
- \* Facilitate in time, money and space
- \* Sharing knowledge and experiences
- \* Benefits for educational practice

**LEADERSHIP**

- \* Role models
- \* Pacemakers
- \* A culture that values learning and experimenting

**INFRASTRUCTURE**

THIS WAY PLEASE...

4 THE FUTURE!

IT & EDUCATION COACH

NEED HELP?

- \* Software
- \* Hardware
- \* IT and educational support



## Discussion card – Vision and Policies pillar

*Definition: the views on the relevance and added value of IT within education, and the way in which the institution directs policies to these.*

Stakeholders: executive board, faculty board, dean, (senior) management, team leaders

Indicators	Definitions	Questions
Vision on education and educational innovation using IT	Views on the relevance and added value of educational innovation using IT as it relates to learning and teaching, and the extent to which there is support for this within the institution.	<p>What is the generally accepted view of IT in education within the institution? Think in terms of using IT to innovate in the education process, IT in the context of IT literacy for living, learning, and working, and IT in the back office of education?</p> <p>Has an institution-wide vision been formulated for educational innovation using IT?</p> <p>Why was this vision adopted?</p> <p>To what extent is this vision based on academic knowledge on this subject?</p> <p>Who is involved in the creation of this vision: staff, students, professional practitioners?</p> <p>To what extent is the vision supported within the institution?</p> <p>To what extent does the field of professional practice demand more IT literacy from future professionals?</p> <p>What impact has the COVID-19 crisis had (e.g. measures such as working from home, digital teaching, exams, etc.) on your vision?</p>
Policy: Objectives for educational innovation using IT	The objectives that the institution is aiming for over a period of time with regard to educational innovation using IT, and the extent to which all the institution's staff are aware of them.	<p>What place does educational innovation using IT within the education process have in the strategic agenda/quality agenda or forward-looking policy plans of the institution?</p> <p>What place does the institution see IT occupying in education in 2025?</p> <p>To what extent are employees of the institution aware of these objectives?</p> <p>Is this supported by mid-level management, lecturers, students and the professional field?</p> <p>What has been the impact of the COVID-19 crisis (measures such as working from home, digital teaching, exams, etc.) on your policies?</p>

Indicators	Definitions	Questions
Policy: Management of educational innovation using IT	The way in which tasks and responsibilities relating to educational innovation using IT are delegated across the various departments and employees of the institution, and, in particular, the role of the executive board.	<p>How is the executive board involved in educational innovation using IT?</p> <p>Does the institution have a project plan, project group, or project manager for educational innovation using IT? If so, what is the specific assignment? If not, how is policy on educational innovation using IT managed?</p> <p>To what extent is educational innovation using IT embedded in the existing organisation?</p>
Policy: Monitoring of developments on educational innovation using IT	The way in which progress (measured against the objectives) on educational innovation using IT in education is evaluated, reflected on, and reported.	<p>Has the institution formulated "hard" targets? For instance, 75% of lecturers will.</p> <p>How is the progress on developments in educational innovation using IT monitored? Who is responsible for this within the institution, and at what other levels?</p> <p>What benchmarks is progress judged against? And who is responsible for doing this?</p>
Policy: Professional development and rewards	How lecturer professional development in the field of educational innovation using IT is integral into the institution's human resources policies. This could include a competence profile for employees, the professional development initiatives available, the (financial) valuation and assessment in job appraisal interviews, and the role of IT skills during the recruitment process.	<p>Does the organisation implement policies on professional development with regard to educational innovation using IT?</p> <p>Does the personnel policy take account of educational innovation using IT, for example, by including a specific competence profile in the profile for lecturers?</p> <p>Is competence in the use of IT in the learning process part of the R&amp;O<sup>v</sup> cycle?</p> <p>Is competence in using IT resources included in job advertisements and in job appr</p> <p>How are those in leadership positions trained in relevant IT skills so they can lead education and IT projects?</p> <p>To what extent is there cohesion between the policies on educational innovation using IT and the professional development activities offered within the institution?</p> <p>To what extent are IT competencies part of the basic teaching qualification/basic qualification of teaching competence?</p> <p>What IT competencies do new employees have when they enter the institution? How are IT competencies taken into account in the recruitment process?</p> <p>What has been the impact of the COVID-19 crisis (measures such as working from home, digital teaching, exams, etc.) on professional development policies?</p>



## Discussion card – Leadership pillar

*Definition: The way in which formal or informal leaders encourage the use of IT in education and stimulate the use of IT in related lecturer professional development in order to help realise the institution's vision and policies.*

Stakeholders: those in leadership positions, managers, line managers, lecturers

Indicators	Definitions	Questions
Role models	The extent to which formal or informal leaders are inspirational role models for other lecturers in relation to the use of IT in teaching, for example, through their positive attitude or expertise.	<p>Who serves as an inspiring example for the use of IT within the institution (departmental managers, teaching coordinators, deans, programme directors, colleagues)?</p> <p>What is the evidence for this?</p> <p>Do lecturers feel that they are supported, encouraged, inspired and motivated by formal or informal leaders to engage in educational innovation using IT?</p> <p>What has been the impact of the COVID-19 crisis (measures such as working from home, digital teaching, exams, etc.) on these role models?</p>
Pacemakers	The extent to which formal or informal leaders encourage educational innovation using IT.	<p>Who acts as the driving force with respect to the use of IT within the institution (department heads, teaching coordinators, deans, training directors, colleagues)? What is the evidence for this?</p> <p>How do these pacemakers ensure that all employees are involved in the developments? Not just the enthusiastic pioneers, but also the laggards and those in the middle?</p> <p>To what extent does the closest formal manager encourage educational innovation using IT among lecturers in a relational way (personal contact, close connection and trust-giving)?</p> <p>How does the formal leader closest to me use policy to guide educational innovation using IT? Make a distinction between IT that is used to improve education (IT as a means) and IT that is used to improve the substance of education (IT as an end).</p> <p>Are the pacemakers sufficiently aware of the need in the field of professional practice for IT literacy for living, learning and working?</p> <p>What has been the impact of the COVID-19 crisis (measures such as working from home, digital teaching, exams, etc.) on those in leadership positions as driving forces?</p>

Indicators	Definitions	Questions
Culture of learning and experimentation	The way in which the professional culture within a department is geared to joint lifelong learning and experimentation in the context of educational innovation using IT, for example, by means of extra facilities for lecturers, the scope for innovation, (critical) reflection, feedback, and the sharing of experiences.	<p>To what extent is the professional culture within the institution at a decentralised level geared to safe and shared learning (a learning organisation)?</p> <p>How is this evident?</p> <p>What facilities are available for this? Will lecturers be given extra facilities to develop their IT competencies?</p>



## Discussion card – Professional development pillar

*Definition: The formal and informal opportunities for staff to develop their skills with regard to the use of IT in their teaching, and the conditions that encourage that development.*

Stakeholders: HR management, HR(D) advisers, those in leadership positions, lecturers

Indicators	Definitions	Questions
Professional development needs  Point of attention: it is possible that the questions concerning professional development (see vision and policies) will have to be answered by the discussion partners in this section.	The professional development needs that lecturers within the institution have in relation to IT, based on their current 1) knowledge and skills, 2) attitude and convictions and 3) IT use.	What are the professional development needs of lecturers?  To what extent is insight available into the IT competencies of lecturers?  To what extent is insight available into the attitudes and convictions of lecturers regarding IT in education?  To what extent is there insight into the current IT use of lecturers?
Professional development supply	The professional development opportunities available to lecturers within the institutions in the field of IT, such as courses, training and professional learning communities. The format, duration and content are all relevant here.	Is there a range of professional development activities for educational innovation using IT?  If not: How else are lecturers engaging in professional development in the context of innovation of the education process using IT?  If so: Have specific principles been formulated for professional development activities relating to educational innovation using IT? How is this supply decided? Are lecturers involved in this process?  Does the supply-side offering meet the specific needs of lecturers in terms of their own professional development?  Is what's on offer being used? If so, by whom?  How is participation by lecturers encouraged?  Does the institution have enough well-equipped trainers or coaches who can work in a goal-oriented way on developing lecturer competencies?  What is the substance of professional development activities focused on: A. basic technology skills B. subject-matter content, subject-specific teaching methods and the learning process in a specific subject area  Is the supply of professional development activities continuous and long-term?

Indicators	Definitions	Questions
Facilitation in terms of time, money and space	The time available, the financial resources, and the freedom of choice to form the professional development activities for lecturers in the longer term.	How much (extra) time are lecturers given to experiment with new forms of teaching using IT?  To what extent is space made available in the timetable?  How do you ensure that all lecturers participate in professional development activities?  To what extent can lecturers themselves decide how they wish to develop in the area of teaching using IT?  Who manages the financial resources when it comes to lecturer professional development using IT?  What has been the impact of the COVID-19 crisis (measures such as working from home, digital teaching, exams, etc.) on the facilitation of professional development activities?  How is knowledge about educational innovation using IT shared within the institution?  Is this valued within the institution?
Sharing knowledge	The extent to which knowledge of IT in education is shared internally (among staff) or externally (with other institutions).	Are colleagues more likely to find each other as a result of knowledge-sharing sessions?  Is there any research linked to professional development activities (e.g. design-based research)?
Benefits for the teaching practice	The extent to which professional development leads to desired effects in the teaching practice (for students). This depends on the focus and responsibility of those involved in achieving these effects.	Is any insight available into the (desired) effects on the teaching practice?  If so, what is it and where is it available?  And how do you find this out?  How would you assess digital learning during the COVID-19 crisis?



## Discussion card – IT infrastructure pillar

*Definition: All facilities within the institution that enable or support the integration of IT in education.*

Stakeholders: IT professionals, teaching departments, IT service, IT coaches/advisers, lecturers

Indicators	Definitions	Questions
Software	The availability, accessibility, and quality of software that can be used within education. This includes digital learning resources, electronic learning environments, student management systems, apps, MOOCS, artificial intelligence, software programs or tools.	<p>Is the software available within the institution appropriate for educational innovation using IT?</p> <p>What extra work is being done to achieve educational innovation using IT?</p> <p>To what extent are investments made in paid versions of apps or software which are also available in a free version?</p> <p>What consideration is given to privacy and ethical aspects of the software?</p> <p>What opportunities do lecturers have to influence this?</p> <p>What impact has the COVID-19 crisis had (e.g. measures such as working from home, digital teaching, exams, etc.) on the availability, accessibility and quality of software?</p>
Hardware	The availability, accessibility, and quality of hardware that enables the practical use of software in the education process. This includes computers, laptops, tablets, smartphones, augmented reality/virtual reality, robots, interactive whiteboards, an accessible and fast (wireless) network, and licences for the use of software or cloud services.	<p>Is the hardware available within the institution appropriate for educational innovation using IT?</p> <p>What opportunities do lecturers have to influence this?</p> <p>Is there a departmental budget available for specific purchases?</p> <p>Is HR or the department responsible for professional development consulted about appropriate training?</p>

Indicators	Definitions	Questions
IT and education support	The availability, accessibility, and expertise of staff within the institution who support the process of IT innovation in education. This includes IT specialists who provide support for technical problems and IT coaches who provide educational support to the organisation of education using IT, and the extent to which these parties work together.	<p>Have IT coaches been appointed within the institution? What is their specific assignment?</p> <p>Is 'just-in-time' IT support available for lecturers?</p> <p>What barriers and/or incentives do lecturers experience in the use of IT in educational innovation?</p> <p>To what extent is the ongoing professional development of IT coaches being addressed?</p>



## Form for stakeholders

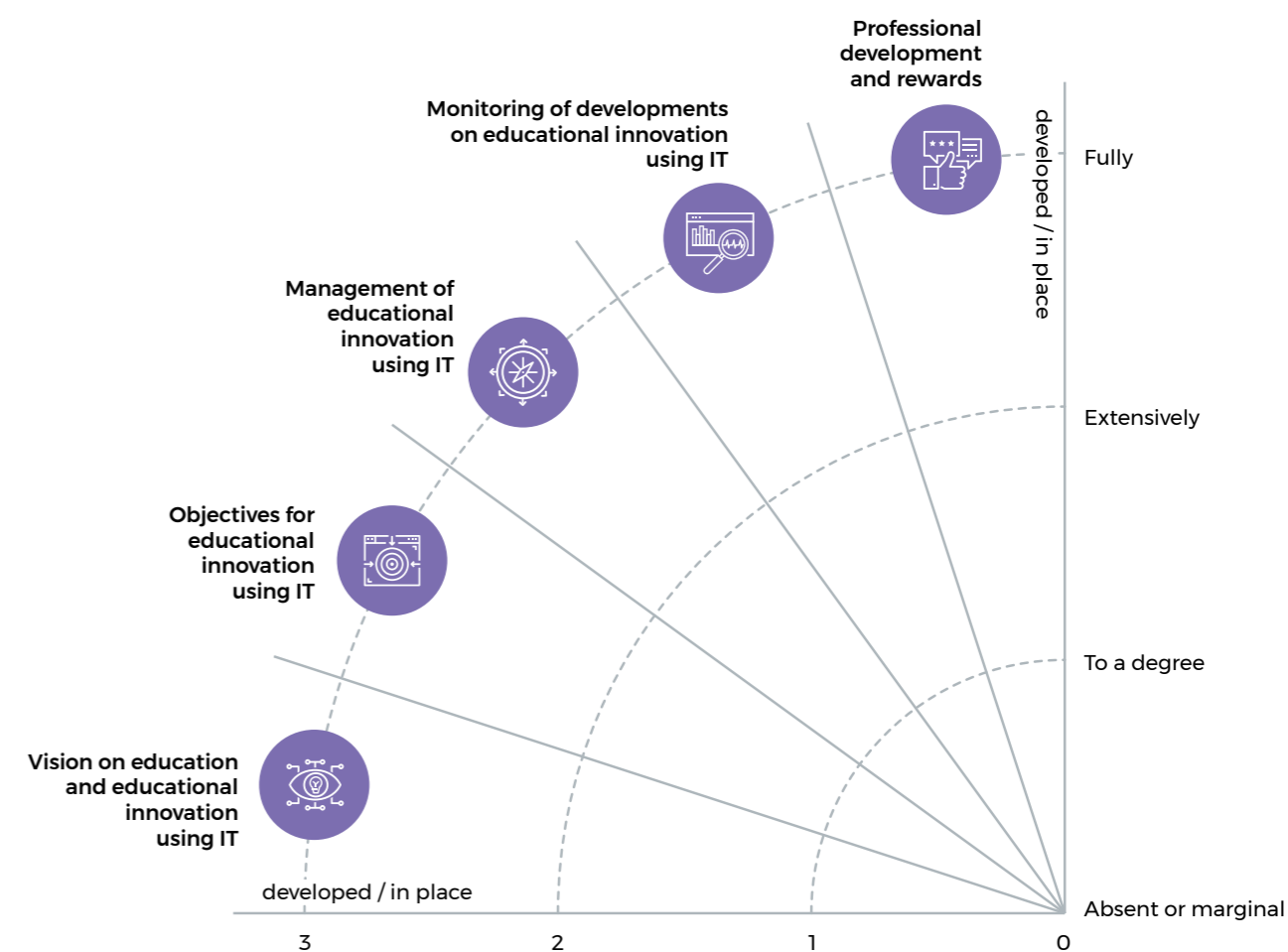
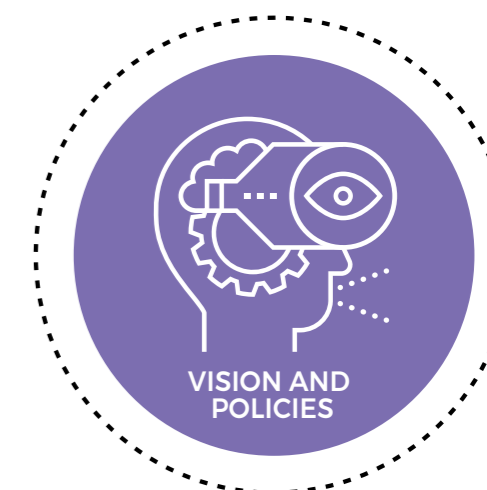
For each indicator, enter which stakeholder this indicator should be discussed with.

Pillars and indicators	Intended discussion partners	Participated (name, position, unit)
<b>Vision and Policies</b>		
Vision on education and educational innovation using IT		
Policy: Objectives for educational innovation using IT		
Policy: Management of educational innovation using IT		
Policy: Monitoring of developments on educational innovation using IT		
Policy: Professional development and rewards		
<b>Leadership</b>		
Role models		
Pacemakers		
Culture of learning and experimentation		
<b>Professional Development</b>		
Professional development needs		
Professional development supply		
Facilitation in terms of time, money and space		
Sharing of knowledge		
Benefits for the teaching practice		
<b>IT infrastructure</b>		
Software		
Hardware		
IT and educational support		

## Reflection card

### Pillar 1: Vision and Policies

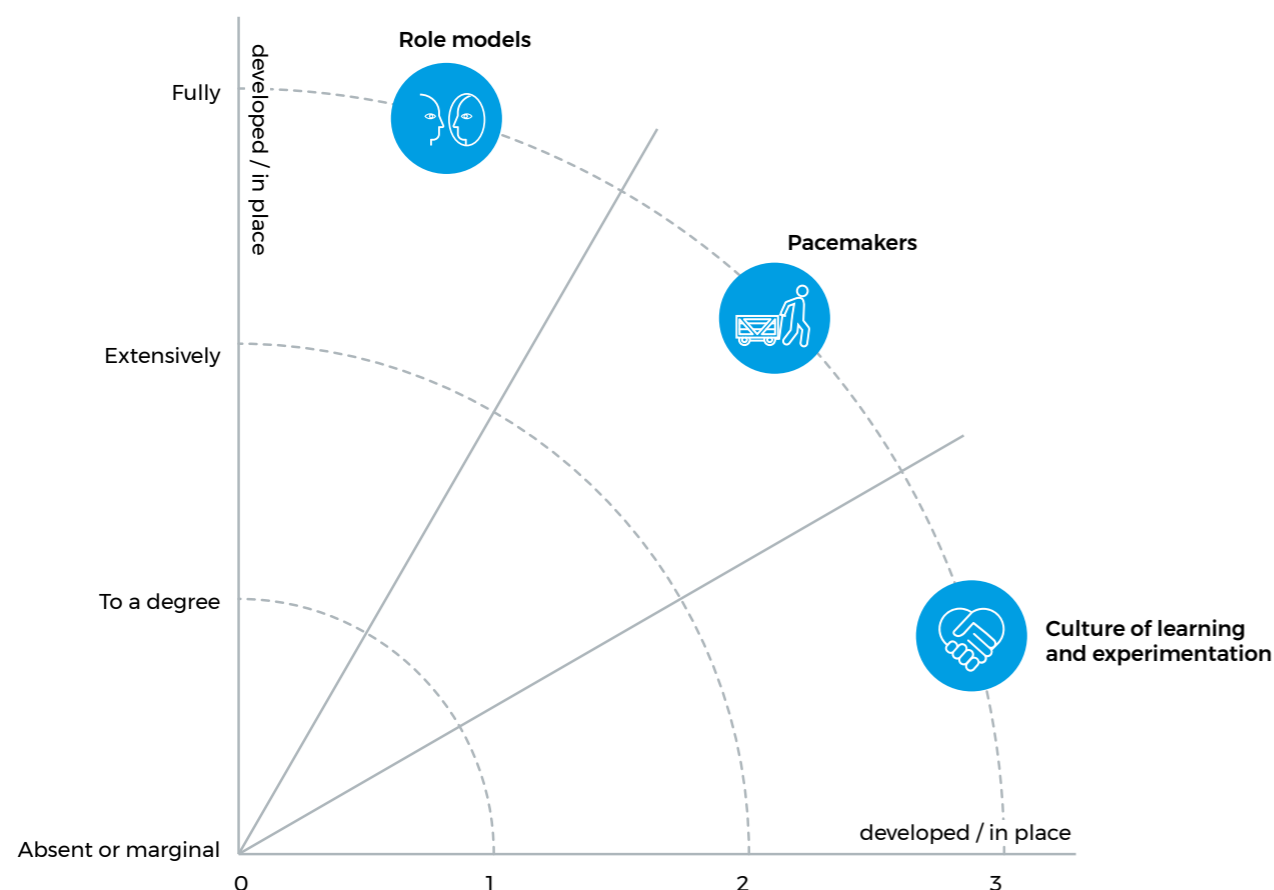
*The views on the relevance and added value of IT within education, and the way in which the institution directs policies to these.*



# Reflection card

## Pillar 2: Leadership

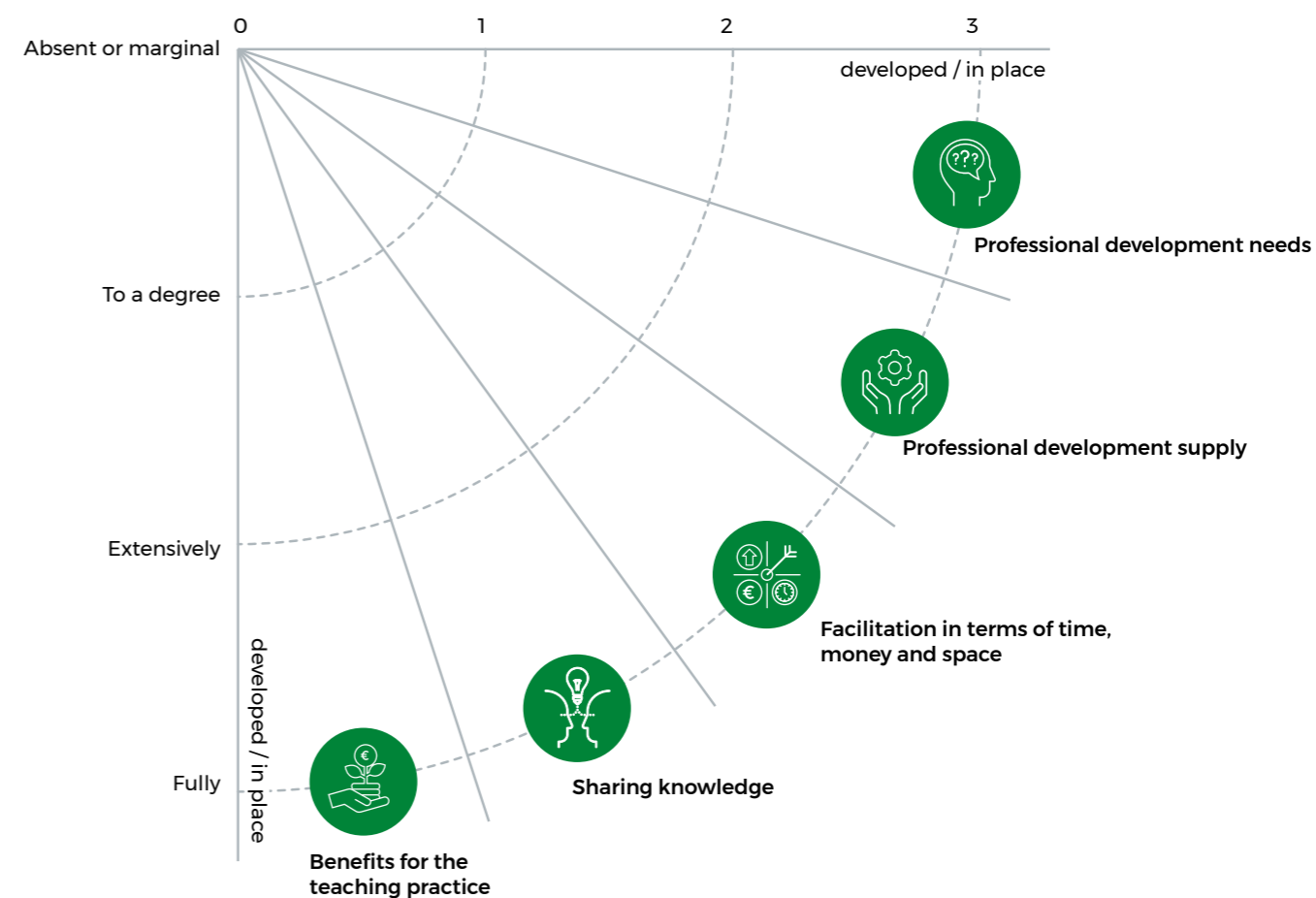
The way in which formal or informal leaders encourage the use of IT in education and stimulate the use of IT in related lecturer professional development in order to help realise the institution's vision and policies.



# Reflection card

## Pillar 3: Professional Development

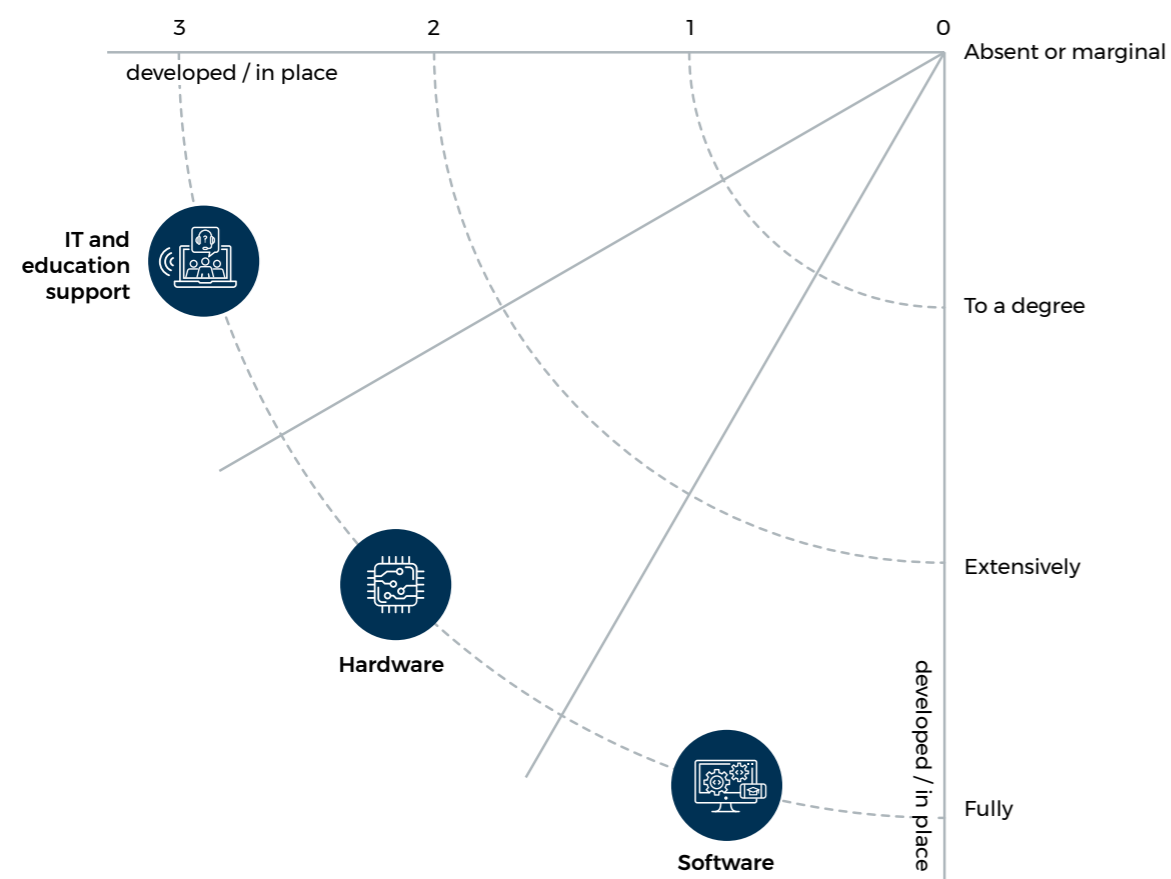
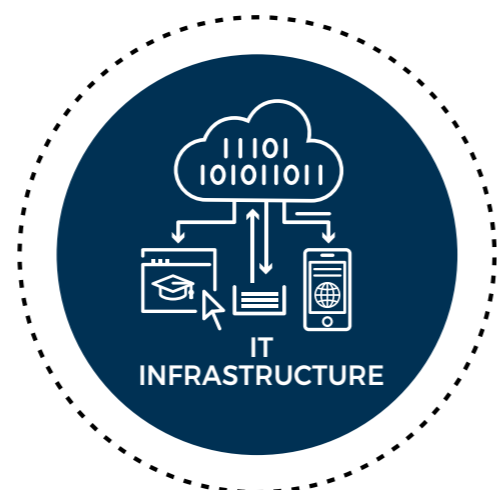
The formal and informal opportunities for staff to develop their skills with regard to the use of IT in their teaching, and the conditions that encourage that development.



# Reflection card

## Pillar 4: IT-infrastructure

All facilities within the institution that enable or support the integration of IT in education.



## Evaluation questionnaires for participants and moderators

### Questionnaire for moderators – Dutch

The Dutch version of the digital questionnaire for moderators can be found [here](#):  
Or scan the following QR code:



### Questionnaire for participants – Dutch

The Dutch version of the digital questionnaire for the participants can be found [here](#):  
Or scan the following QR code:



### Questionnaire for moderators – English

The English version of the digital questionnaire for moderators can be found [here](#):  
Or scan the following QR code:



### Questionnaire for participants – English

The digital questionnaire for participants can be found [here](#):  
Or scan the following QR code:



## Evaluation questionnaire for the integral IT motion sensor – Participants

Thank you for participating in the discussion using the integral IT motion sensor. The integral IT motion sensor consists of a inspirational cartoon, discussion cards and reflection cards in reference to four pillars (Vision and Policies, Leadership, Professional Development and IT Infrastructure).

By completing this questionnaire, you will be helping us by letting us know how you have experienced the discussion. The results will be used to improve the integral IT motion sensor.

1. I wish to participate in this study and give my consent for the use of my (anonymised) data.

- Yes, I give my consent
- No, I do not give my consent

2. What is your **overall impression** of the discussion based on the integral IT motion sensor? A rating of 1 means very dissatisfied, a rating of 10 means very satisfied.

1	2	3	4	5	6	7	8	9	10

3. What did you find positive about the discussion based on the integral IT motion sensor?

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4. How do you think the discussion based on the integral IT motion sensor could be improved?

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5. Progression of the discussion.

Please indicate to what extent you agree with the following statements.

	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree	N/A
I was adequately informed in advance of the nature and topics of the discussion.						
There was plenty of time to discuss the substance.						
I feel I was able to contribute enough to the discussion.						
There was a safe atmosphere during the discussion.						
The moderator managed the discussion effectively.						
The inspirational cartoon inspired me during the discussion.						
The inspirational cartoon contributed to my perception of educational innovation using IT.						
The discussion cards helped keep the discussion on track.						
The sample questions on the discussion cards were specific and clear.						
By filling in the reflection card(s), I now have a better idea of the current position of my institution in terms of educational innovation using IT.						

6. Outcomes of the discussion.

Please indicate to what extent you agree with the following statements.

	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree	N/A
The discussion based on the IT motion sensor prompted me to think about educational innovation using IT within my institution.						
This discussion has made me more aware of the role of educational innovation using IT within my institution.						
Due to this discussion, I am now keen to make further plans for educational innovation using IT within my institution.						
I am confident that the discussion based on the IT motion sensor will lead to more educational innovation using IT within my institution.						
I think it is relevant to have another discussion in the future about educational innovation using IT based on the integral IT motion sensor.						

7. Would you like to be kept informed about the follow-up and results of the research concerning the integral IT motion sensor?

- No thanks, I do not need to be kept in the loop.
- please keep me in the loop; my e-mail address is: \_\_\_\_\_

Thank you for completing this questionnaire.

## Evaluation questionnaire on the integral IT motion sensor – Moderators

Thank you for acting as the moderator during the discussion based on the integral IT movement sensor. The integral IT motion sensor consists of a inspirational cartoon, discussion cards and reflection cards in reference to four pillars (Vision and Policies, Leadership, Professional Development and IT Infrastructure).

By completing this questionnaire, you will be helping us by letting us know how you have experienced the discussion. The results will be used to improve the integral IT motion sensor.

1. I wish to participate in this study and give my consent for the use of my (anonymised) data.

- Yes, I give my consent
- No, I do not give my consent

2. What is the name of the institution where the discussion took place?

\_\_\_\_\_

3. Are you employed at the institution where the discussion took place?

- Yes, I am an organic (internal) employee at this institution
- No, I am affiliated with this institution as an external consultant

4. What was the composition of the group in which your discussion took place?

- One or more one-on-one discussions
- Homogeneous group (several stakeholders with similar positions at each session)
- Mixed group (multiple stakeholders with varying roles at a single session)

5. How many people attended the session? Please state the number by role.

Senior management (executive board, faculty board, other senior management)	
HR managers	
Those in leadership roles (department heads, teaching coordinators, deans, study programme directors, line managers)	
Lecturers	
Learning designers (IT professionals, educationalists, IT service, IT coaches)	
Students	
Other, please specify: .....	
<b>Total</b>	

6. Which pillars were addressed during the discussion based on the integral IT motion sensor? (several answers possible)

- Pillar: Vision and Policies       Pillar: Leadership  
 Pillar: Professional Development       Pillar: IT Infrastructure

7. What is your **overall assessment** of the discussion based on the integral IT motion sensor? A rating of 1 means very dissatisfied, a rating of 10 means very satisfied.

1	2	3	4	5	6	7	8	9	10

8. What did you find positive about the discussion based on the integral IT motion sensor?

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9. How do you think the discussion based on the integral IT motion sensor could be improved?

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10. Progression of the discussion. Please indicate to what extent you agree with the following statements.

	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree	N/A
I was adequately informed in advance of the nature and topics of the discussion.						
There was plenty of time to discuss the substance.						
Each participant was able to contribute adequately to the conversation.						
There was a safe atmosphere during the discussion.						
I felt that I was able to guide the conversation effectively.						
The inspirational cartoon inspired me during the discussion.						
The inspirational cartoon contributed to perceptions of educational innovation using IT.						
The discussion cards helped keep the discussion on track.						
The sample questions on the discussion cards were specific and clear.						
I believe that by filling in the reflection cards, participants will have a better idea of where the institution currently stands in relation to educational innovation using IT.						

11. Outcomes of the discussion.

Please indicate to what extent you agree with the following statements.

	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree	N/A
The discussion based on the IT motion sensor encouraged the participants to think about educational innovation using IT within their institutions						
This discussion made the participants more aware of the role of educational innovation using IT within their institutions.						
Due to this discussion, I now expect the participants to make further plans relating to educational innovation using IT within their institutions.						
I expect that following this discussion, this institution will make further developments in the field of educational innovation using IT.						
I am confident that the discussion based on the IT motion sensor will lead to more educational innovation using IT within this institution.						
I think it is relevant to have another discussion in the future about educational innovation using IT based on the integral IT motion sensor.						

12. Would you like to be kept informed about the follow-up and the results of the study concerning the integral IT motion sensor?

- No thanks, I do not need to be kept in the loop.
- please keep me in the loop; my e-mail address is: \_\_\_\_\_

Thank you for completing this questionnaire.

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## Endnotes

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