



**Master thesis**

Faculty of Behavioral, Management and Social Sciences

**Understanding change in organizational routines:  
A study on the occurrence of change within the  
testing and assessment routine of teachers in the  
context of Dutch higher education**

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### **Abstract**

This qualitative exploratory study aims to provide a better understanding of the occurrence of change within organizational routines. Educational organizations are a consistent theme when it comes to research on change within organizational practices being treated as routines. The implementation of technology and, more critically, the outbreak of Covid-19 are important factors for changes in educational organizations. To deal with these changes, teachers can modify routines in various ways. Whether teachers engage in change behavior can be explained with the theory of planned behavior. This study provides an explanation of the constitution of change within organizational routines by describing how and why teachers engage in routine change. This is done by focusing on a single routine, namely the routine of testing and assessment in the context of Dutch higher education. Semi-structured interviews were conducted with twenty teachers of six different universities of applied science in the Netherlands. Teachers' attitude, subjective norm and behavioral control towards change behavior are related to the way in which teachers (not) changed the routine. Interview transcriptions were all coded by applying a deductive coding strategy, after which a cross-case analysis was conducted to analyze interviews. The results showed that the more positive people's attitude, the more confidence they have in their abilities and the more they feel facilitated by the organization, and the less they perceive a subjective norm to engage in change behavior, the greater and the more complex changes to the routine will be. This research offered valuable contributions for organizations who seek to understand how and why routine changes actually come about. Specially, it provides managers with guidelines to elicit employee's beliefs about change behavior. This may be used to consider effective change supportive interventions that can enhance both the continuity and efficiency to perform organizational routines.

**Keywords:** Organizational routines, routine change, theory of planned behavior, higher education, testing and assessment

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### **Understanding change in organizational routines: A study on the occurrence of change within the testing and assessment routine of teachers in the context of Dutch higher education**

Organizational change is ubiquitous in research on organizations in the social sciences (Wee & Taylor, 2018). Changes in organizations are the adjustments or alterations of current ways of working that affect an organizational system in its entirety (Herold & Fedor, 2008; Pettigrew, Woodman & Cameron 2001). Educational organizations are a consistent research context when it comes to the study of organizational change (Sherer & Spillane, 2011). Particularly, the proliferation and implementation of technology in education led to changes from the beginning of the twenty-first century (Stone & Zheng, 2014). Especially in Dutch higher education, the possibilities for online teaching increased significantly (Kolikant, 2019; Law, 2016). Moreover, as a consequence of the outbreak of the Covid-19 pandemic, educational organizations were forced to suspend all on-campus activities. They were impeded to switch to a complete online form of education. However, a shift from face-to-face to online teaching possesses particular challenges. One challenge for teachers is to find a suitable way for testing and assessment (Nelson, Voithofer & Cheng, 2019). Testing and assessment is an important practice in higher education. This is because it is used by teachers to support and evaluate students' learning processes with the aim of preparing them for their future careers (Boitshwarelo, Reedy & Billany, 2017). However, the way in which teachers can change the practice of testing and assessment can differ for individual teachers. It is important that the way in which teachers can change that practice is understood. This is necessary for educational organizations to harness the possibilities afforded by technology to facilitate teachers in their work. In that way, teachers can effectively support students with their learning and be able to contribute to high learning outcomes (Boitshwarelo, Reedy & Billany, 2017). To achieve this, the changes implemented by teachers to test and assess their students need to be explored.

One way to explore these changes is by studying the practice of testing and assessment via organizational routines. This is important because the study of change in organizational routines allows to see how people behave within the organization (Becker, 2008). Understanding people's behavior in organization is necessary to adapt organizational change strategies effectively. Feldman and Pentland (2003) defined an organizational routine as "a repetitive and recognizable pattern of interdependent actions, involving multiple actors" (p. 96). Testing and assessment as a practice fits very well to study how it is changed by applying the concept of organizational routines. This is because testing and assessment implies more than just constructing test questions and assessing students performances on an exam (Boitshwarelo, Reedy & Billany, 2017). Van Berkel, Bax and Joosten-ten Brinke (2017) described the practice of testing and assessment in Dutch higher education. They defined testing and assessment as a process of four global phases that include goalsetting, measuring, grading and deciding (Van Berkel, Bax & Joosten-ten Brinke, 2017). Testing and assessment is a recognizable process, it repeats itself, actions are interdependent and it involves multiple actors to complete it. Understanding the occurrence of change in such a routine can be achieved by studying the dynamics through which the routine is constructed and emerged (D'Adderio, Feldman, Lazaric & Pentland, 2012). Formulated

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differently, studying practices via organizational routines requires to see them as alive, flexible and their potential for change (Pentland & Feldman, 2008). Applying this research strategy allows for an understanding of change in work practices by treating them as organizational routines.

Routines are created to organize work and ensure stability in the accomplishment of tasks (Pentland & Feldman, 2008). However, routines are simultaneously a source of organizational change (Feldman, 2000). Ideally, the constitution of changes in organizational routines are fully understood and it is exactly clear how people behave within the organization. However, Aroles and McLean (2016) indicated that it is often unclear how routines are actually performed in practice. This is because there is still a lot unknown about routines. Especially about the underlying psychological processes that explain people's motivation to engage in routine change (Wee & Taylor, 2018). It could be that change is affected by the job itself or there might be other mechanisms that play a role. In other words, it is not completely clear what drives people to change routines. This is problematic because understanding why people change routines is a powerful mechanism for organizations to foster efficiency and facilitate in work conditions to improve the accomplishment of work (Sherer & Spillane, 2011). A lack of understanding about how routine changes come about can be a barrier for organizations to adapt its organizational strategies effectively (D'Adderio et al., 2012; Kozlowski, Chao, Grand, Braun & Kuljanin, 2013; Wee & Taylor, 2018). In that sense, a further investigation of the underlying psychological processes that determine people's motivation to engage in change behavior is necessary. This contributes to a clarification of the mechanisms behind the constitution of change in organizational routines (Wee & Taylor, 2018). Because of this, the current study aims to seek for an explanation of the behavioral factors that motivates people to engage in routine change. This will be done by exploring how and why teachers change the routine of testing and assessment in the context of Dutch higher education.

One important way to study change behavior in organizations is by using the theory of planned behavior from Ajzen (1991). The theory of planned behavior is created to investigate human behavior. It can be used in a wide range of situations to predict people's engagement in specific behavior (Ajzen, 1991). The theory of planned behavior has been applied earlier in the fields of organizational behavior and change behavior in an attempt to contribute to organizational change management (e.g., Dawkins & Frass, 2005; Jimmieson, Peach & White, 2008; Yang, Choi & Lee, 2018). In that sense, the theory of planned behavior is a useful research model to study change behavior via organizational routines. Ajzen (1991) stated that behavior is determined by the beliefs people have about the behavior. Beliefs predict the extent to which one is likely to engage in behavior or not (Fishbein & Ajzen, 2010). In the context of the current study, the theory of planned behavior can be used to indicate the beliefs teachers have to engage in change behavior. This allows to explain the underlying mechanisms behind the constitution of change in organizational routines.

To summarize, the implementation of technology and the outbreak of Covid-19 forced educational organizations to make rigorous changes in many teaching practices. Testing and assessment

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is one important practice in Dutch higher education that may have been changed significantly. The aim of the current study is to get a better understanding of the occurrence of change within organizational routines. This is done by applying the concept of organizational routines on the process of testing and assessment in the context of Dutch higher education. Using the theory of planned behavior, teachers' beliefs about change behavior will be explored in an attempt to explain their motivation to (not) change their routine. This contributes to a clarification of the occurrence of change within organizational routines. Understanding routine change is useful for educational organizations to consider supportive strategies that facilitates teachers to work effectively and improve their educational practices.

### **Theoretical framework**

The theoretical concepts that are studied in the current research are described in the following paragraphs. At first, organizational routines will be defined and the possible ways in which people can change them will be described. Subsequently, the theory of planned behavior and in which way the model relates to change behavior will be explained. Finally, derived from the theory of planned behavior, expectations regarding teachers' change behavior within organizational routines are formulated to study the constitution of change within the testing and assessment routine in Dutch higher education.

### **Organizational routines**

An organizational routine can be compared to a script that is executed by employees to complete a given task. Feldman and Pentland (2003) indicated that routines can be defined by considering two aspects, namely the performative aspect and the ostensive aspect. The ostensive aspect is the routine in principle and can be seen as the global script (Pentland & Feldman, 2008). It is the abstract idea that people have about how actions should be performed and can be identified as standard operating procedures and taken-for granted norms (Feldman & Orlikowski, 2011). In other words, the ostensive aspect is the part of the routine that explains how behavior should occur, but not how actions are actually performed in practice. Feldman and Pentland (2003) give the hiring routine in organizations as an example of an organizational routine. In almost every organization, hiring entails attracting candidates to apply, screening applicants, choosing applicants and extending one an offer (Feldman & Pentland, 2003). There may be written hiring procedures or applications forms for specific positions within the organization. Here, an example of the ostensive aspect would be employees' interpretation about how to work with these rules and guidelines in practice (Feldman & Pentland, 2003).

The performative aspect refers to the actions that are performed by people, in specific places and times (Feldman & Pentland, 2003). It concerns how actions are actually executed by people and can be seen as the performance of the ostensive aspect in practice. However, how organizational routines are actually performed is often misunderstood (Cohen, 2007; Pentland & Feldman, 2008). Routines are frequently seen as mundane, mindless or rigid (Cohen, 2007). However, Pentland and Rueter (1994)

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described that the performance of a routine should be seen as an effortful accomplishment. In addition to that, Feldman and Pentland (2003) stated that, even though it seems the same people perform the same actions within the same organization, the performative aspect is inherently improvisational. This is because the context in which the routine is executed changes on greater or smaller details for every repetition (Orlikowski, 2000). Routine participants are required to modify the way in which they perform actions every time that they are engaged in the routine (Feldman, 2000). So, the performative aspect is the part of the routine that defines how people actually execute the routine in the organizational practice. An example of the performative aspect of the hiring routine would be the actual performances of the written hiring procedures in practice. To sum up, the ostensive aspect describes the general idea of a routine, the performative aspect explains the performance of the routine in practice. Both aspects are necessary to define routines. Without one aspect, it is not possible to talk about a practice as an organizational routine (Pentland & Feldman, 2008).

Feldman and Pentland (2003) argued that the dual nature of the performative and ostensive aspect within routines are interrelated. When a routine is performed, the ostensive aspect is created. Every repetition recreates this aspect, but can also change it (Feldman & Pentland, 2003). Conversely, the ostensive aspect enables performance, but also limits routine participants to not deviate from the prescribed script. This interrelation is described as the potential of endogenous change (Feldman & Pentland, 2003). Endogenous change stems from the performative aspect of the routine that reflects individual agency (Feldman & Pentland, 2003). Agency can be identified in every action that is performed by any individual human being within an organization (Emirbayer & Mische, 1998). Routine practitioners can perform actions to advance both individual goals and organizational goals (Howard-Grenville, 2005). Emphasizing on a particular goal can change the way in which actions are performed in practice. People continuously alter and adjust, often unconsciously, patterns in the performance of routines because of the different purposes they may have (Feldman, 2000). These modifications are selected by others and will or will not be reconsidered as the ostensive aspect of the routine (Feldman & Pentland, 2003). In other words, the ostensive aspect enables performances and each performance can lead to new ostensive aspects of the routine (Feldman & Pentland, 2003). This potential of endogenous change explains why routines are a source of organizational change (Wee & Taylor, 2018).

In short, the performances of routines differ for every repetition. The repeatable appearance of changes in organizational routines tend to accumulate and will eventually emerge into changes that affect the organization as a whole (Feldman, 2000; Wee & Taylor, 2018). Changes can occur in the ostensive aspect as well as in the performative aspect of the routine. As the two aspects are interrelated, a change in one aspect may lead to a change in the other, resulting in endogenous change within organizational routines (Feldman & Pentland, 2003). To explore how routine changes occur, the present study focuses on changes within a single organizational routine, namely the routine of testing and assessment in the context of Dutch higher education.



**Testing and assessment as a routine.** Testing and assessment is commonly understood as the process of designing a test for a course, administering a test and assessing the performances of students on the exam with a grade (Boitshwarelo, Reedy & Billany, 2017). In the current study, the definition of Van Berkel, Bax and Joosten-ten Brinke (2017) is used to describe testing and assessment as a routine. They explain it as a process in which teachers use instruments to evaluate students' learning processes and decide upon their knowledge, skills and attitudes (Van Berkel, Bax & Joosten-ten Brinke, 2017). Boitshwarelo, Reedy and Billany (2017) added that the purpose of testing and assessment is to measure whether a student seems to possess the required competencies that are necessary to become a professional in practice. So, it concerns all activities with the aim of making decisions about students. This could be a summative decision (i.e., a passing or failing mark) or a formative decision (i.e., monitoring performance). Examples of testing methods are knowledge tests with multiple choice questions, oral exams like presentations, or written assignments such as writing an essay.

Van Berkel, Bax and Joosten-ten Brinke (2017) provided a detailed description of the process of testing and assessment in Dutch higher education. They indicated that, in essence, testing and assessment, in any form, can be identified as a standard operating procedure consisting of four global phases. Each phase includes steps, that together compose a cycle of repeatable and interdependent actions (Van Berkel, Bax & Joosten-ten Brinke, 2017). Performing the steps is regulated by policies of the educational institution in which the practice will be performed. The four phases include goalsetting, measuring, grading and deciding. The first phase of goalsetting includes two steps, namely formulating the intention of testing and assessment (i.e., why a testing should be taken) and a formulation and concretization of the aim of the test (Van Berkel, Bax & Joosten-ten Brinke, 2017). The second phase is measuring and includes the steps of designing a test, organizing test taking and an analysis of the test results (Van Berkel, Bax & Joosten-ten Brinke, 2017). Here, the first step is to choose the right testing method (e.g., a practical assignment or a knowledge test) that is line with the aim of the test. Secondly, test taking includes the organization of conditions under which the testing will be administered by students in practice. Usually, students are provided with instructions beforehand to be aware of what they can expect during the test. Third, depending on testing method, the test results are analyzed immediately, as with oral presentations, or shortly afterwards, like written assignments or a multiple-choice test (Van Berkel, Bax & Joosten-ten Brinke, 2017). Based on the analysis of the test results, points will be allocated and a grade will be assigned in the third phase of grading. And finally, the fourth phase of deciding includes an assessment in which teachers take a decision whether students passed or failed for a test. This phase includes also an evaluation of the performances on the test and reporting the results for improvements of future exams (Van Berkel, Bax & Joosten-ten Brinke, 2017).

The four phases of testing and assessment are an example of the ostensive aspect. The ostensive aspect shapes the perception of what the routine is (Feldman & Pentland, 2003). The standard operating procedures (e.g., the institute for higher education's assessment policy) are part of the ostensive aspect of the routine. The performative aspect refers to the enactment of these actions in practice. As

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mentioned, the way in which the routine is performed differ for every repetition (Pentland & Reuter, 1994). This is because routine outcomes provide new understandings of what can be achieved and the consequences of actions in the routine performing process (Wee & Taylor, 2018). As a result, people may change the way in which they perform the routine within new enactments in practice. There are various ways in which a routine can change.

### **How organizational routines can change**

In the context of higher education, technological innovations are the cause of several changes in many teaching practices. From the beginning of the twenty-first century, there has been rapidly growing implementation of technology in higher education (Kolikant, 2019). The use of technology has become self-evident and is increasingly promoted in daily teaching practices (Du Toit & Verhoef, 2018). These technological changes are an important factor for change in educational organizations. In addition, and even more critically, the outbreak of the Covid-19 pandemic has had enormous impact on higher education. Due to social distancing policies, educational organizations were imposed to transform all on-campus activities into complete online forms of teaching. This have had a great impact on many teaching practices in higher education. Testing and assessment are important practices that may have been changed significantly. To deal with these changes, teachers can modify the routine in three different ways that can change the performative aspect as well as the ostensive aspect of the routine. The three possible change responses are repairing, expanding or striving (Feldman, 2000).

First, one can repair a routine if intended outcomes are not achieved, or if unintended or undesired outcomes are produced (Feldman, 2000). People repair actions within the routine in such a way that it continues to produce outcomes that are similar to the ones that have been produced in a previous performance of the routine (Feldman & Orlikowski, 2011). Repairing is change behavior that is aimed at preventing problems by rephrasing or refining actions. In other words, actions are repaired, and the routine is restored into the organization (Feldman, 2000). An example can be found in the five-week assessment routine, which involved assessing students in an urban elementary school every five weeks in reading, writing, and mathematics (Sherer & Spillane, 2011). The assessments provided insights into students' learning processes through an identification of their strengths and weaknesses (Sherer & Spillane, 2011). The participants repaired this routine by a replacement of regular teacher meetings into the cycle of actions (Sherer & Spillane, 2011). Teacher meetings were left out in a previous performance of the routine and were replaced by an online discussion form about students' results (Sherer & Spillane, 2011). Because this did not result in the intended outcome, the routine was repaired by scheduling teacher meetings again. There was insufficient support within the school to analyze and talk about the decisions to be made (Sherer & Spillane, 2011). The repair of rescheduling teacher meetings solved this problem. Relating to this how routines would change, a repair of the routine is expected to change the performative aspect. This is because people who repair actions try to generate

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outcomes that better complies with the intended outcomes that are formulated within the ostensive aspect (Pentland & Feldman, 2005). Although that a repair is usually expected to result in a change of the performative aspect, the repair to the routine changed the ostensive aspect in the example given above. The repair to the five-week assessment routine changed the steps into the operating procedure of the routine (Sherer & Spillane, 2011).

Second, people can expand the routine if generated outcomes offer challenges that create opportunities for improvement (Feldman, 2000). The routine will be changed by taking on these challenges to benefit from the possibilities provided (Feldman, 2000). Routine participants expand their notion of what can be achieved with actions (Feldman & Orlikowski, 2011). Expanding is the idea of doing things differently through an expansion of actions (Feldman, 2000). It is change behavior that is aimed at improving actions to improve the routine performances. An example of expanding in the five-week assessment routine was about how teachers could make sense of students' weaknesses. As an outcome of the routine, the data provided challenges to analyze students' weaknesses. Teachers expanded the routine in the sense that they involved other teachers in the routine (Sherer & Spillane, 2011). They consulted with colleagues to help them select the right tools to provide students with additional support to improve their weaknesses (Sherer & Spillane, 2011). The routine was expanded by an increase of interaction in terms of forming a committee of teachers to discuss the outcomes of the routine, aiming at an improvement of student support. Again, this is an example that changed the ostensive aspect of the routine. Discussing the outcomes of the assessment routine within a committee adds an actual step into the procedure of the routine. Pentland and Feldman (2005) indicated that routine participants tend to expand their notion of what can be achieved with the routine, that would change the abstract idea of the routine. So, an expansion of the routine is expected to change the ostensive aspect.

Finally, striving stems from the situation that outcomes, whether or not produced as intended, lead to changes in the routine because people see improvements that could be made (Feldman & Orlikowski, 2011). Feldman (2000) referred to this as outcomes falling short of ideals. People will completely change the routine in an attempt to attain something that is more difficult, or even impossible, to attain (Feldman, 2000). They strive to realize outcomes that more fully capture their ideals (Feldman & Orlikowski, 2011). However, having achieved this goal will lead to changes to produce even better outcomes. People have a never-satisfied desire to continue to realize outcomes that seems better to them (Feldman, 2000). Formulated differently, striving is change behavior that is aimed at making improvements that transcend prior outcomes, driven by a desire to realize outcomes that are way more difficult to achieve. According to Feldman (2000), striving is a continuous change response because participants will never fully satisfy their ideals. Striving as a change response in the five-week assessment routine was focused on the extensive use of data (Sherer & Spillane, 2011). Sherer and Spillane (2011) indicated that teachers used data about students to change the classroom instruction. Teachers changed the routine by using the data to create small groups of students with different ability levels. Students then could work together and help each other by improving their strength and

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weaknesses (Sherer & Spillane, 2011). Although that this contributed to students' learning, the teachers indicated that they wanted to establish even higher learning outcomes. They continuously changed the routine to more fully realize their ideals. Here, striving towards better outcomes is expected to change the ostensive aspect because people change their expectations of what they hope to achieve by attempting to attain outcomes that are more difficult to attain (Pentland & Feldman, 2005). It changes their imagination of what they think they could achieve with the routine.

In addition to the different ways in which a routine can change, it might also be that it does not change. When people do not engage in routine change, Pentland, Hærem and Hillison (2011) indicated that people produce a fixed response that leaves the routine in its current state. Here, an important factor to not change the routine is the institutionalization of habitual behavioral patterns (Schulz, 2008). Habitual patterns are automatic behaviors that people perform without being aware of it (Wood, Quinn & Kashy, 2002). Such patterns are created through frequently repeating the same actions in a context that is relatively stable (Wood, Quinn & Kashy, 2002). These habits will then be institutionalized to the collective level, which means that action patterns transform in taken-for-granted norms (Schulz, 2008). In other words, actions are recognized and adopted as a routine with the aim to create stability in task accomplishment (Pentland, Hærem & Hillison, 2011).

To summarize, Feldman (2000) indicated that there are three ways in which routines can change. The way in which routine participants engage in change behavior depends on their interpretation of the produced outcomes. In case of unintended outcomes, people can repair the routine to prevent problems in an attempt to realize outcomes that are similar to the ones that have been produced previously. People can expand the routine if outcomes provide opportunities to improve the routine. Actions are added in order to take advantage of the possibilities that earlier outcomes provided. And, whether intended outcomes are produced or not, people can change the routine because they strive towards outcomes that more fully capture their ideals. It may also be that people produce a fixed response on previous outcomes that does not change the routine. This explains how routines can change. The type of change behavior that will be engaged in has also to do with the motivation people have to engage in change behavior. In the upcoming paragraphs, it is described why people would change their work by explaining the factors that determine people's motivation to engage in change behavior.

### **Why people engage in change behavior**

The motivation people have to engage in behavior can be explained with the theory of planned behavior from Ajzen (1991). This is an empirically validated model to explain human behavior and can be applied in a wide range of situations and human behaviors (Yang, Choi & Lee, 2018). As stated in the model, an explanation for behavior can be found within three variables that determine an intention to engage in behavior (Ajzen, 1991). The three variables are the attitude towards behavior, the perceived subjective norm and the degree of perceived behavioral control (Ajzen, 1991). First, the attitude towards

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behavior refers to a person's or negative feelings about the behavior and indicates whether people think that engaging in the behavior would be a good idea (Ajzen, 1991). Second, the perceived subjective norm is the extent to which a person perceives social pressure of important others to engage in behavior. Third, the degree of perceived behavioral control refers to both a person's self-efficacy and the associated controllability with regards to the behavior (Fishbein & Ajzen, 2010). Self-efficacy is the confidence people have in their abilities to engage in the behavior (Bandura, 1982). Controllability is the extent to which people believe to have the right resources and information at their disposal that they deemed to be necessary to engage in the behavior (Rhodes & Courneya, 2003). As a general rule, a favored attitude, a positive perceived subjective norm and a positive perceived behavioral control will lead to an intention to engage in behavior (Fishbein & Ajzen, 2010).

However, there is criticism on the relationship between intentions and actual behavior, as suggested within the theory of planned behavior (Baruch-Mordo, Breck, Wilson, Kenneth & Broderick, 2009; Miller, 2017; Webb & Sheeran, 2006). Although that earlier research used the model to study the intention to engage in organizational change events (e.g., Dawkins & Frass, 2005; Jimmieson, Peach & White, 2008; Venkatesh, Morris, Hall, Davis, Davis & Walton, 2003), Miller (2017) claimed that there is a scarcity of research relating intentions to actual behavior in research on organizational change. In addition, it is not clear whether a change in people's intention to engage in behavior will also lead to a change in actual behavior (Webb & Sheeran, 2006). As a consequence, there may be a lack of confidence to assume that intentions will always predict actual human behavior when using the theory of planned behavior as a research model (Miller, 2017). Since the current study focuses on actual routine performances in the past, people's intention is replaced by actual engagement in change behavior. Whether teachers engaged in change behavior is an actual consequence of the beliefs they hold with regards to the attitude, subjective norm and behavioral control towards change behavior. There is no intention because teachers already engaged in the behavior, and thus is directly predicted by the three variables. Each of the three motivational variables will be described in greater detail below.

**Attitude towards behavior.** The attitude is created by the behavioral beliefs that people hold about the outcomes or attributes of engaging in the behavior (Ajzen, 1991). This means that beliefs are formed through the expected consequences of the behavior and the expected effort that is associated with the behavior. According to Ajzen (1991), people favor behavior when they believe that performing it will provide them with desired outcomes. In contrast, expectations of undesirable outcomes create an unfavorable attitude towards the behavior of interest (Ajzen, 1991). This implies that the more behavior is favored, the more likely it is that behavior will be performed. In the context of change behavior in organizations, a favored attitude implies that people feel positive to insert changes in their work. They see advantages for change and are willing to invest effort in other ways of working. Translated to the current study, teachers who favor to change are likely to change the testing and assessment routine. Moreover, it is expected that a favored attitude relates to striving for better outcomes.

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The reason for this is that change behavior that is aimed at making a significant improvement by going beyond what is formally required (i.e., striving) is activated through a person's intrinsic motivation rather than influences of external factors (Chun, Shin, Choi & Kim, 2013; Grant & Ashford, 2008; Salanova & Schaufeli, 2008; Yang, Choi & Lee, 2018). Routine practitioners who strive for more have a never-satisfied desire to realize outcomes that are more difficult to attain because they want to comply with their ideals more (Feldman, 2000). They change the routine in an attempt to improve circumstances or creating new ones. This kind of behavior is similar to one important characteristic of proactive change behavior that Grant and Ashford (2008) described as creating an intended impact. This is the emphatic inclination of people to change the way they act to make a significant difference (Grant, 2007). They want to make meaningful changes to improve the context in which they are situated in (Grant, 2007; Grant & Ashford, 2008). In addition, people tend to search for meaningful improvements when they obtained favorable evaluations and positive outcome expectations of behavior they engaged in earlier in their lives (Fedor, Caldwell & Herold, 2006). In that, the intrinsic motivations people have to perform behavior with which they are familiar with relates most strongly to a tendency of making a change to improve the current situation (Yang, Choi & Lee, 2018). Hence, it is reasonable to expect that a favored attitude to engage in change behavior relates to striving for better routine outcomes. And so, teachers who favor to change are expected to change the testing and assessment routine by means of striving to realize outcomes that seems better to them.

**Perceived subjective norm.** The subjective refers to the extent to which a person perceives social pressure to engage in behavior (Ajzen, 1991). The perceived social pressure stems from the normative beliefs individuals hold about an important referent group (Ajzen, 1991). This is the perception of an individual that others, who are associated by that individual as important others, approve or reject the performance of the behavior in question (Fishbein & Ajzen, 2010). In other words, whether a person believes that other people think that he or she should perform the behavior or not. According to Ajzen (1991), the more favorable the subjective norm with respect to the behavior, the more likely it is that the behavior will be performed. So, people who perceive that others approve the behavior are likely to also engage in that behavior. It is therefore assumed that teachers who perceive a subjective norm to change their work are likely to change their routine. Here, a perceived subjective norm is expected to result in an expansion of the routine. This has to do with the motivation people have to comply with important others who exert social pressure to improve the performances of the routine.

Subjective norms are expectations of others that one should engage in behavior (Carmeli & Schaubroeck, 2007). These expectations serve as a self-fulfilling prophecy to establish higher self-standards with regards to the behavior of interest (Carmeli & Schaubroeck, 2007). This is because of the Pygmalion effect (Eden, 1984), which implies that expectations of others impact the beliefs of the person in question. For example, in the context of work, when colleagues have high performance expectations of an employee, the actions of those colleagues will reflect these expectations in terms of

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appreciation and recognition for that employee (Eden et al., 2000). In turn, that person will act accordingly by trying to comply with the expected performances (Eden et al., 2000). The reason for this is because when people believe to be appreciated and feel that others care about what they do, a self-fulfilling prophecy emerges that increases a person's self-standards to improve the performances of actions (Carmeli & Schaubroeck, 2007; Kirrane, Lennon, O'Connor & Fu, 2017). Relating this to routine change, expanding is change behavior in which people add actions with the aim of improving the routine (Feldman, 2000). In this regard, a perceived subjective norm will motivate people to change the routine to improve the performances of it (Yang, Choi & Lee, 2018). Because of this, it is reasonable to assume that a perceived subjective norm to engage in change behavior relates to an expansion of the routine.

**Perceived behavioral control.** Behavioral control is the ease or difficulty that is associated with the behavior (Ajzen, 1991). This is created through control beliefs people have about the behavior. Control beliefs relate to whether people think that they are capable to perform behavior and the resources and information they possess to act accordingly (Fishbein & Ajzen, 2010). Behavioral control reflects a person's self-efficacy and the associated controllability with regards to the behavior (Ajzen, 1991). Self-efficacy is the confidence people have in their abilities to perform behavior (Bandura, 1982). According to Ajzen (1991), the more confidence one has, the more likely it is that the behavior will be performed. Within the present study, this means that teachers who report a positive self-efficacy are assumed to be confident in their abilities to engage in change behavior. Controllability is the extent to which a person believes to have control over his or her decision to engage in behavior (Rhodes & Courneya, 2003). It is reflected by the access one has to resources and information that is necessary to act accordingly (Ajzen, 1991). In light of the current research, teachers who report a positive controllability are assumed to possess the right resources and information to engage in change behavior. According to Ajzen (1991), behavior is likely to be performed when people are confident in their abilities and if they believe have control to engage in behavior or not. Relating this to routine change, the type of change behavior is expected to be a repair of the routine.

The reason for this is that it is assumed that people who are confident in their abilities and who believe to be in control are likely to perceive to be in control to generate routine outcomes that they are familiar with (Yang, Choi & Lee, 2018). Generally, in work, people perceive to be in complete control when they are engaged in behavior with which they are familiar with (Dawkins & Frass, 2005). They know what they have to do, how they have to do it and which sources they need because they have past experiences with actions (Bandura, 1982; Dawkins & Frass, 2005). With respect to organizational change, Yang, Choi and Lee (2018) indicated that people who believe to possess the right resources and information and who are confident to engage in change behavior will do what is minimally expected from them to insert changes successfully. This is because people who possess positive control beliefs are also expected to prevent personal embarrassment (Bandura, 1982; Moss, Sanchez, Brumbaugh & Borkowski, 2009). Moss et al. (2009) stated that people tend to avoid behavior that lie beyond their

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abilities and will change actions so that they are sure that they can generate the desired outcomes (Moss et al., 2009). With respect to routine change, repairing means that actions are restored in an attempt to produce similar outcomes (Feldman, 2000). Within the current study, this means that teachers who perceive high levels of behavior control to engage in change behavior are most likely to repair actions within the testing and assessment routine.

In summary, there appeared to be still a lot unknown about organizational routines. Especially about the psychological processes that can explain people's motivation to engage in routine change. This is problematic because organizations can use this knowledge to understand how people behave and support them in work conditions to improve the accomplishment of tasks. One useful way to understand people's motivation to change is by applying the theory of planned behavior. The current research uses the model to explore how the attitude, perceived subjective norm and perceived behavioral control relate to change behavior within organizational routines. This will provide insights into the, yet unexplored, underlying psychological mechanisms that can be used to explain how and why people change routines. Moreover, It can provide guidelines to consider effective change supportive interventions that can enhance both the continuity and efficiency regarding the performances of organizational routines.

### **The present study**

The above-mentioned literature showed that higher education is an important research context when it comes to changes in organizational routines. The implementation of technology, and more critically, the Covid-19 pandemic are important factors for change in educational organizations. To deal with these changes, teachers can modify routines in three different ways that summarizes how routines can change. Whether teachers engage in change behavior can be explained with the theory of planned behavior. The present study aims to explore in which way teachers' routine change behavior relates to their attitude, perceived subjective norm and degree of perceived behavioral control towards change behavior. This will be done by studying the constitution of change in teachers' routines for testing and assessment within the context of Dutch higher education. To study this, the three following research questions are formulated:

1. *'Which routines do teachers have with regards to testing and assessment in Dutch higher education and how did they (not) change that routine?'*
2. *'What is teachers' attitude, perceived subjective norm and degree of perceived behavioral control to engage in change behavior?'*
3. *'How does teachers' attitude, perceived subjective norm and degree of perceived behavioral control to engage change behavior relate to the way in which they (not) change the testing and assessment routine?'*



## Method

### Design and participants

This study is a qualitative research in the form of an exploratory study. An exploratory research approach is appropriate to catch the reality of behavior of those involved in the study and the real-life context in which they act (Cohen, Manion & Morrison, 2011). The particular strength of exploratory studies lies in their focus on the complexities and dynamics of events within the context in its own right (Yin, 2009). So, this research method allows to zoom in on teachers' change behavior to provide an explanation for change within their routines. A purposeful critical case sampling method was used to approach teachers to participate in the study. In critical case sampling, participants are selected on the basis of their link with a phenomenon and enables to obtain specific information about that phenomenon, which cannot be obtained without including them in the study (Onwuegbuzie & Leech, 2007). As this study focuses on teachers' own thoughts and feelings about change behavior, critical case sampling is an appropriate sampling method to include the teachers themselves into the study sample.

In total, 20 teachers (11 males and 9 females) from 6 universities of applied science in the Netherlands participated in the study. Participants ranged in age from 27 to 58 years ( $M = 41.60$  years,  $SD = 8.70$ ). The majority reported a Master degree as their highest educational degree (70% of the participants). Participants' work experience ranged from 2 to 25 years ( $M = 7.55$  years,  $SD = 5.54$ ). Differences in the type of employment were equally divided (10 parttime and 10 fulltime). The average tenure of participants in their current function was 6.30 years. The demographic information is summarized in Table 1.

Table 1  
Summary of participants demographic information

		Number of participants
Age	20 – 29 years	1
	30 – 39 years	8
	40 – 49 years	7
	50 – 59 years	4
Highest educational degree	Bachelor degree	3
	Master degree	14
	PhD	3
Work experience in higher education	0 – 9 years	14
	10 – 19 years	5
	20 – 29 years	1

### **Instrumentation**

Semi-structured interviews were used for data collection. Interview questions aimed at identifying teachers' routines for testing assessment, whether teachers engaged in change behavior and the motivation they had to (not) change their work. Semi-structured interviews are useful in this regard because they have the unique strength of encouraging participants to elaborate upon answers to measure their true thoughts and feelings (Tuckman & Harper, 2012). They allow for reciprocity between the interviewer and interviewee and enable the interviewer to ask follow-up questions based on the answers given (Kallio, Pietilä, Johnson & Kangasniemi, 2016). Interview questions were created using several scientific articles. In addition, a short introductory text was created to explain the purpose of the interviews. Questions and exploratory text were written in Dutch. Next to that, demographic information was gathered for later data analysis. The complete interview guide can be found in Appendix A. The first part of the interview was used for the questioning of teachers about their routines. They were questioned about both the ostensive and performative aspects of the testing and assessment routine. The ostensive aspects were studied by asking the school's assessment policy that regulated actions regarding the routine. The performative aspects were studied by asking how teachers enacted actions in practice.

**Routine change behavior.** Teachers' change behaviors were measured using the framework from Feldman (2000), positing repairing, expanding and striving as the three ways to change routines. Interview questions were adapted from Conley and Enomoto (2009) to identify routine change. They specified six key questions to define change in the student-attendance routine they studied. Questions were formulated to indicate the problem or stimulus that caused the change, which actions were taken, and whether these actions resulted in better or worse outcomes (Conley & Enomoto, 2009). In addition, questions aimed at whether actions met intended goals, whether there were possibilities that generated resources for improvement, and which next actions were taken (Conley & Enomoto, 2009). These six questions were modified for the interviews in the present study. Since teachers' change behaviors were focused on influences from the Covid-19 pandemic, questions were asked to what extent regulations installed by the government affected teachers working methods. Particularly, in which way a forced shift to online education affected change in the testing and assessment routine. An example of a question is 'Could you indicate the extent to which the consequences of the Covid-19 regulations have led to changes in your working methods?' and 'What was the reason for you to make these changes?'. Teachers were prompted to explain their reasoning in greater detail by asking what actions were taken and which new outcomes were generated. This made clear whether teachers repaired actions, expand upon possibilities or strived to achieve better outcomes (Feldman, 2000). In case teachers did not change the routine, the frame of Pentland, Hærem and Hillison (2011) of a fixed response was assigned to indicate that the routine was not modified at all.

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**Motivation to change.** The description of Fishbein and Ajzen (2010) to construct a theory of planned behavior questionnaire was used to formulate interview questions that measured teachers' motivation to change. First, the attitude was measured by asking teachers how they felt about change behavior and what they saw as the (dis)advantages of changing their work (Fishbein & Ajzen, 2010). An example of a question is: 'What do you see as the advantages/disadvantages of implementing change in your work?' and: 'Why did you feel positive/negative about the change?'. Second, the subjective norm was explored by asking to what extent others influenced whether teachers would change their work. An example of a question is: 'To what extent do others in the organization, such as colleagues, affect the way that you do your job?' and: 'What role do these people have in the organization?'. Finally, the behavioral control was measured by asking questions about teachers' self-efficacy and the associated controllability. Teachers' self-efficacy was explored by asking the extent to which they felt confident in their abilities to implement change in their work. For example, a question was: 'Can you tell me to what extent you think that you are able to implement changes in your work easily? The controllability was measured by asking teachers' beliefs about the factors that would make it easy or difficult to engage in change behavior (Fishbein & Ajzen, 2010). Here, an example of a question is: 'Which factors or circumstances made it easy or enable you to implement change?'

### **Procedure**

Prior to data collection, ethical permission was asked at the Ethic Commission of the University of Twente to conduct the research. After approval, teachers from all kinds of study programs of different universities of applied science in the Netherlands were recruited for the interviews. Teachers were personally approached by the researcher via an email in which they were informed about the aim of the research and the purpose of the interviews. An informed consent form was included within the email. After signing the consent form, the first interviews took place. Teachers were asked whether they could link the researcher to other teachers to approach for participation in the study using snowball sampling. This sampling method involves utilizing well informed people to identify informants who are able to provide relevant information about the phenomenon of interest (Cohen & Crabtree, 2006). Eventually sufficient participants were included in the study sample.

The interviews had a duration of 45 to 60 minutes. Initially planned face-to-face conversations were not possible due to social distancing measures because of Covid-19. Therefore, interviews were conducted by means of an online video call. At the beginning of each interview, permission was asked to record the conversation. Then, the researcher explained the purpose of the interview and the goal of the research. Teachers were asked to indicate general demographic information, after which the content related questions were asked for the research. At the each interview, a summary of the conversation was made in consultation with the participants. After the interviews, the researcher created full transcripts of the conversations. A copy was sent to participants so that they could indicate whether they agreed with

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the content to be used in the research. In this way, a member check was realized (Ponterotto, 2006). This ensured that participants' perspectives were taken into account prior to a translation of the interviews into data (Ponterotto, 2006). All participants agreed and gave permission to use the interview transcriptions for further data analyses.

### Data analyses

All twenty interviews were conducted via Microsoft Teams. Conversations were video recorded and written transcripts were made using AmberScript. Pseudonyms were used in the transcriptions to ensure the anonymity of participants. Interview transcriptions were all coded by applying a deductive coding strategy using Atlas.ti. A codebook was created with four main categories: ostensive aspects; performative aspects; routine change behavior; motivation to change. The codebook can be found in Appendix B. Reliability of the interview data was established by letting another researcher code 20% of the interviews. In this way, the inter-coder reliability was measured by calculating Krippendorff's Cu-alpha coefficient. Krippendorff's Cu-alpha was calculated because it allows to assess the reliability of interview data that is coded interchangeably by two different coders instead of two coders who code data independently (Xie, 2013). Whereas other measures, such as Cohen's Kappa, only allow to see a general value of (dis)agreement, Krippendorff's Cu-alpha gives an exact indication that can be used to make specific improvements of the codes that are created for data analysis (Krippendorff, 2018).

To establish an acceptable reliability coefficient, a value for Krippendorff's Cu-alpha of .800 is recommended, but values above .667 can be considered as acceptable (Krippendorff, 2018). Initially, a Krippendorff's Cu-alpha of  $c_u\alpha = .534$  was established. Differences between coders were mainly about the interpretation of codes that reflected the ostensive and performative aspects. The second researcher initially applied codes of the performative aspects to interview fragments in which teachers explained the ostensive aspects. There was also disagreement about the application of codes that reflected teachers' change behavior. Interview fragments reflecting an expansion of the routine were confused with striving towards better results. After adjusting the codebook, the second researcher coded the same interviews again to establish an acceptable coefficient for the inter-coder reliability. Eventually, a Krippendorff's Cu-alpha of  $c_u\alpha = .707$  was calculated, which ensured the inter-coder reliability of the analysed data.

The definition from Feldman and Pentland (2003) of the ostensive and performative aspects was used to code teachers' routines. Codes were based on the four phases (i.e., goalsetting, measuring, grading and deciding) that reflect the testing and assessment routine (Van Berkel, Bax & Joosten-ten Brinke, 2017). The ostensive aspects were coded when teachers addressed their perception of rules, expectations, norms and plans stated in the school's assessment policy about the routine. Codes were also applied to agreements that have been made about the routine. Codes of performative aspects were assigned to actions taken by teachers in practice. Further, teachers' change behaviors were coded using Feldman's (2000) framework of repairing, expanding and striving. The operationalization of the change

behaviors within the theoretical framework was applied to code for corresponding behavior. Interview fragments in which teachers indicated that they did not engage in change behavior were coded as 'fixed response' (Pentland, Hærem & Hillison, 2011). Behavioral beliefs explaining teachers' motivation to engage in change behavior were coded using the variables of Ajzen's (1991) theory of planned behavior. By means of a cross-case analysis, similarities and differences were identified that provided insights into the ostensive and performative aspect and teachers' change behavior within the routine. In addition, by intensively studying the interview data, routine change behaviors and teachers' beliefs to engage in change behavior were analysed in relation to each other that resulted in patterns of change behavior within the testing and assessment routine.

### Results

The results of the conducted interviews are structured on the basis of the research questions of this study. The results for all of the twenty interviewed teachers are described together. At first, teachers' routines are described by presenting how they explained the ostensive and performative aspects of testing and assessment. Second, the way in which teachers changed their routines are addressed by presenting the routine change behaviors that were identified among the interviewees. Third, teachers' motivation to engage in change behavior is explained by describing their attitude, perceived subjective norm and degree of perceived behavioral control to implement changes their work. The results of teachers' motivation allowed for a comparison with the way in which they changed their routines. The relationship between teachers' motivation to change and their routine change behavior are explained for each of the three motivational variables separately. This enabled to see patterns of behavior that allowed to explore the occurrence of change in organizational routines for testing and assessment. The results are presented below.

#### Routines of testing and assessment

The first research question was formulated as: *'Which routines do teachers have with regards to testing and assessment in Dutch higher education and how did they (not) change that routine?'*. Below, an overview is provided of the routines that are found among the interviewed teachers. First, the ostensive aspects are presented, after which the performative aspects will be addressed. The results are structured on the basis of the four phases of testing and assessment in Dutch higher education.

**Ostensive aspects.** In the interviews, three groups could be distinguished for the way in which teachers explained the ostensive aspects of the routine. The groups were based on contextual details that interviewees described to indicate how they thought of the global script. A majority of the interviewed teachers (12 out of 20) described their routine in the context of written exams such as multiple-choice tests or writing an essay. Another group (6 out of 20) explained the routine from the perspective of

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practical assessments in which students were assessed in a real professional setting (e.g., internship assignments). A minority (2 out of 20) described their routine in the context of assessment as learning. They indicated that students work on a personal portfolio throughout their study by taking on challenges from real organizations in practice. The three groups were used to present the results of the ostensive aspect regarding each of the four phases that reflect the testing and assessment routine. The way in which these contextual differences resulted in different ideas of how teachers perceived the ostensive aspect is described in greater detail below within the paragraph that summarizes these results.

**Goalsetting.** The majority (12 out of 20) who described testing and assessment in the context of written exams explained the ostensive aspect of goalsetting as a translation of the aim of education into concrete learning outcomes for the student. Here, the aim of education reflects the learning objectives that are formulated for a course. These learning objectives will be operationalized as measurable outcomes in terms of the goals for a test. Interviewees indicated that they followed the education and examination regulations (EER) to formulate test goals. As one teacher described: *'We have the EER in which the learning objectives are formulated for the courses of the upcoming year, so your test goals are determined prior to the start of the course'*. Teachers in this group mentioned that they were bound to specific rules and conditions laid down in the school's assessment policy. One important rule was the necessity to get a basic qualification in examination (in Dutch: BKE). The BKE is necessary to be assigned as senior lecturer, who is responsible for the goalsetting for testing. In addition, interviewees referred to a national educational profile that contains a set of professional competencies for Bachelor studies in Dutch higher education. They indicated that the learning objectives derive from these competencies and determine the goalsetting for testing. For example, one teacher said: *'We work with competencies that are formulated into learning objectives. Based on those objectives, we look at what test goals should be formulated that we want the student to achieve'*. In all, it seemed that teachers in this group perceive the ostensive aspect of goalsetting as a demarcated part of the routine in which they are guided by official documents to decide how actions should be performed.

The second group (6 out of 20) described the routine in the context of practical assessments. They explained the ostensive aspect of goalsetting approximately similar. Teachers in this group did also mention that they worked with a national educational profile. Moreover, they did also refer to the BKE as a prerequisite to work as an examiner within their school. As one teacher said: *'As a prerequisite, every teacher needs to have at least the BKE to ensure that the general conditions for testing and assessment are clear'*. Other than the teachers who described goalsetting in the perspective of written exams, participants in this group mentioned that the learning outcomes should be adapted to the phase of the study in which students are arrived in. They indicated that test goals are more theoretical for students in the first year and will be practical in nature in the latter years of the study. As one teacher described: *'In the first year, learning objectives are less complex with the aim of learning students the basics. Later in the study, the aim of testing will be on preparing students for their work as a professional'*

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*in practice*'. Teachers in this group also reported an abstract idea of goalsetting as a demarcated process in which they were guided by regulations laid down in the school's assessment policy. However, it seemed that the way in which test goals are formulated depends on situational factors such as the group of students and the study program where the testing and assessment takes place.

In contrast, a minority of teachers (2 out of 20) indicated that the educational system within their study program was completely based on assessment as learning. They explained that students who follow their study program create a curriculum on their own. As one of the two described: *'For a few years now, we designed our educational program primarily on the basis of assessment as learning in which students create their own curriculum by taking on challenges from organizations in practice'*. Here, no learning objectives are formulated in advance since teachers do not know what kind of challenges an organization has to offer for the students. One teacher commented in this regard: *'The aim of our study program is to prepare students for 'the unknown', so you cannot make certain objectives for this in advance, because you do not know what they should look like'*. Students choose the aim of their study themselves by formulating their own learning objectives that belong to the projects they will be working on. Formulated differently, the goalsetting for testing is achieved by the students themselves.

Taken together, it appeared that teachers varied in their perception of the ostensive aspect of goalsetting. The results showed that teachers who explained their routine in the context of written exams perceived goalsetting as following the guidelines laid down in the school's assessment policy. They seem to have a relatively rigid perception of goalsetting. The group that described the routine in light of practical assessments seem to have a less rigid idea of goalsetting. Although that they perceived relatively strict rules and requirements, they explained that the way in which actions should occur can vary because of a specific study year in which the assessment takes places. The minority that used the context of assessment as learning described the goalsetting as a part of the routine that is up the students themselves. It seems that they perceive flexibility in the ostensive aspect because it can be different for different individual students.

**Measuring.** The phase of measuring includes the steps for designing a test, organizing test taking and analysing test results. The majority (12 out of 20) who described the routine from the perspective of written exams explained the ostensive aspect as choosing the right testing method and selecting a proper assessment instrument that aligns with the aim of education. The teachers in this group referred to the EER that includes a prescription of the way in which the learning objectives will be tested during a year of college. As one teacher described: *'The EER is operationalized to the level of our study program. The testing method is already described in this document, whereby you can and may make some further specifications on certain points as a teacher'*. In addition, the teachers in this group appear to be bound to specific rules and requirements regarding the actions in this phase. An important requirement that was mentioned in the interviews was that the testing must adhere to the standards of validity and reliability. Here, teachers referred to the EER in which it was stated that the designed test

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and the assessment instrument should always be peer reviewed by at least one other teacher. For example, one teacher said: *'When it comes to the construction of a test and the assessment form, the principle of using two pairs of eyes is always leading and is also something that we do for every kind of testing'*. Next to that, interviewees mentioned that the testing should be a logical consequence of the content of lectures and the structure of a course. As one of the interviewees described: *'The way in which the course is taught and the way of testing go hand in hand with each other'*. In other words, the phase of measuring cannot be separated from the content of lectures and the setup of a course. In all, teachers in this group seem to perceive the measuring as a relatively regulated procedure that is covered by specific rules and requirements laid down in the school's assessment policy.

The group of teachers (6 out of 20) who described their routine in the context of practical assessments indicated that they perceive the ostensive aspect of measuring as assessing whether students are able to show professional behavior that is necessary for practice. They referred to the importance of the professional setting as the point of focus regarding the design and administration of a test. As one teacher described: *'Our study program is focused on the professional context in which we want to educate students, so that is your point to focus on when you engaged in designing the testing'*. Moreover, teachers explained that they aimed at a limitation of written exams within their study program as much as possible. They indicated that testing should be on the level of critical thinking and problem solving rather than fact checking by reproducing knowledge. One teacher exemplified this as: *'There is information anywhere and anytime, so we think that is important that students can quickly search the right information and apply that in situations rather than pounding lots of facts in your head and forget about it the next day'*. Interviewees indicated that the process of designing and test taking should be interwoven into practice. As one teacher described: *'We implemented a from called design-based education. This entails that our testing is shaped on the basis of co-creations with real organizations'*. Here, practice is involved in the process of designing the test in the sense that teachers created the test in consultation with professionals in practice.

The third group (2 out 20) that described the abstract idea of measuring from the perspective of assessment as learning reported an ostensive aspect in which the measuring is up to the students themselves. As explained earlier, the teachers in this group indicated that students take on challenges from organizations by working on assignments. As one of the two commented: *'We have partnerships with 140 companies that provide students with various assignments. Student choose their own challenges, we are only there to provide assistance to help students find some sort of direction'*. They explained that students create a portfolio in which they bundle all the assignments that they have been working on during their study. Students add the feedback that they got on their assignments and their reflections about what they learned from it. In this regard, the abstract idea of measuring appeared to be the creation of a personal portfolio that students will be working on throughout the study.

Taking together, the perception of the ostensive aspect of measuring varied among the three groups of teachers. It appeared that teachers who used written exams to explain their routine perceive



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measuring as mainly following official guidelines laid down in the school's assessment policy. They seem to have a relatively rigid idea of the ostensive aspect of measuring. Teachers who described their routine in the context of practical assessments seem to have a relatively flexible idea of measuring. They were focussing on developments in the professional field that shape the way in which they perceive how the testing should look like. The minority that explained their routine in the context of assessment as learning seem have a relatively flexible perception of measuring as well. They indicated that it may vary for each of their students individually.

**Grading.** The phase of grading implies the rewarding of test results by allocating points to students' performances on the testing. The minority of teachers (2 out of 20) who described their routine in the context of assessment as learning indicated that they did not work with grades at all. They described the abstract idea of grading as assessing the personal development of a student throughout their time at college. As one of the two explained: *'We do not grade students, they create a portfolio in which they show what they have been working during their study. This result in a personal portfolio in which students show their growth and development as a professional'*. Teachers determine whether students are ready for practice instead of assigning grades to their performances on tests.

The majority of teachers (12 out of 20) who did grade their students described the ostensive aspect from the perspective of grading test results of written exams. Interviewees in this group explained the script for grading as awarding points to students performances on tests on the basis of prescribed criteria laid down in assessment rubrics. As one teacher explained: *'We work with rubrics that describe in detail what students will be assessed on and what they have to do to get a passing mark'*. Here, the principle of using two pairs of eyes was again mentioned as the leading policy. Interviewees mentioned also that they usually shared the rubrics with their students prior to the actual grading process. The school's assessment policy stated that there should be a sufficient level of transparency and guidance for students in this regard. For instance, one teacher commented: *'When you look at the grading of a single student, we will show the assessment rubrics in advance, together with the assignment, conditions and requirements. We use this policy to help students find direction and for ourselves that we can account for the constitution of a grade in case of discussion afterwards'*. Formulated differently, the abstract idea of grading appeared to be reviewing the test results on the basis of predefined assessment criteria for teachers in this group.

The group of teachers (6 out of 20) who explained their routine in the context of practical assessments mentioned that they graded the learning processes of students as they were working on a project during a given period. Teachers indicated that they were particularly interested in the learning progress instead of scoring students on a single testing at one moment in time. For example, one teacher said: *'Sometimes we see that students do not score sufficiently on the exam, but they did show particular behavior that we want to see. We give them feedback and when they show that they understand that by acting upon our comments, than that is even more important than the scores achieved on the different*

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*part laid down in an assessment form*'. Here, it appeared that teachers did also make use of assessment rubrics. The way in which students process the feedback and used that to develop themselves appeared to be decisive in the constitution of a grade.

Taking together, the results showed that teachers had a comparable perception of grading. Teachers who used the context of written exams as well as teachers who described grading from the perspective of practical assessments seem to perceive grading as the process of allocating points to test results by using a set of prescribed assessment criteria. While the group that used written exams appear to focus on official documents for grading, teachers who used practical assessments seem to perceive it as rewarding student's learning processes throughout a course. They did not seem to follow official documents for grading that strictly. Teachers who used assessment as learning did not use grades at all.

**Deciding.** Finally, the fourth phase of deciding implies that teachers give a final assessment that indicated whether students past or failed for a test. The majority of teachers (12 out of 20) who used written exams to describe their routines explained the script for deciding as an evaluation of the assessment process by investigating whether the grades were assigned correctly. Interviewees indicated that they should be conducting a critical evaluation of the test criteria laid down in the assessment rubrics to see whether the grades were constituted correctly. For example, one teacher said: *'We evaluate critically whether the assessment criteria measured what they intend to measure after the test has been taken. We check whether things could have been interpreted ambiguously and may then correct the scores before we take the final decision'*. Teachers in this group referred to the BKE in which guidelines are formulated that should be followed to ensure a proper evaluation of the assessment process. After the decision has been taken, the examination board must give permission whether the assessment meets the standards of validity and reliability. As one teacher described: *'The examination board is there to see whether the process went correctly, whether the policy of using two pairs of eyes was applied and with that, whether that decision is based on the judgment of two competent teachers'*. A report of the test results is also used for quality evaluation to see whether future exams could be improved. In all, this group of teachers perceive deciding as a process of determining whether test results were assessed correctly in accordance with the requirements laid down in the school's assessment policy. They seem to perceive it as a structured procedure that is relatively similar over time.

The group (6 out of 20) who described deciding from the perspective of practical assessment explained the ostensive aspect as determining whether students showed professional behavior that is required to work as a practitioner in the field. Teachers in this group indicated that they should be well informed by the company or organization where the student completed his assignment. Here, the feedback from practice and reflection of the student on his own learning are decisive for the final decision. For example, one teacher said: *'The idea is that on the basis of the test that has then been assessed, we then give feedback on: 'What do we notice? What could you bring with you for the future? What can you develop on?'*. That is what the student describes. Those reflections of the student are

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*decisive in this, they should be especially looked at*'. In this regard, interviewees indicated that the assessor must have at least a Master's degree to be allowed to take a final decision regarding any assessment within their study program. Teachers mentioned also that it is important for the assessment of a graduation project that the two pairs of eyes policy is applied by two independent assessors. As one teacher described: *'For the final project, students have a supervisor who provides feedback and guide the student during the project. For the actual assessment, there is a second assessor who assess the work independently. This is to ensure that the decision is completely objective on the basis of two independent assessors'*. So, the perception of the ostensive aspect of deciding seemed to be the assessment of students in their role as professional practitioners for this group of teachers.

The minority of teachers (2 out of 20) who explained their routine in the light of assessment as learning described an ostensive aspect of deciding as the judgement whether students are ready for practice. They explained that they decided upon the extent to which students showed that they developed as a professional within their portfolio. This is a bundle of all the challenges students worked on during their study, including all reflections on the feedback that they received from practice. As one teacher explained: *'The student's portfolio is valuable, because that depends on that judgment and growth. That is what comes about and is in fact assessment as learning. With that, the student builds his own curriculum, so these people also receive a personalized diploma'*. It is the evidence of the student that he or she is grown to the level of a full-fledged professional.

Taking together, the results showed that most teachers appear to perceive the abstract idea of deciding as checking whether the assessment process went correctly. Teachers who used written exams to explain their routine seemed to perceive the abstract idea of deciding as a fine-grained pattern. It appeared that they are completely guided by official documents to decide whether students meet the formulated standards. The teachers who used practical assessment as well as the teachers who described their routine in the light of assessment as learning perceived this part of the routine as assessing whether students are able to show professional behavior in practice.

To summarize, the results showed that teachers seemed to be familiar with and had a good understanding of the rules, norms and requirements laid down in official policy documents for testing and assessment. Moreover, interviewees seemed to be aware of the division of roles and responsibilities for actions within each phase of the routine. This suggests that teachers perceive clear guidelines on how they should perform actions with respect to testing and assessment. However, it appeared that teachers' perception of how actions should occur depend on contextual details in which the routine will be carried out. The results showed that the majority of teachers who described their routine in the context of written exams had a relatively rigid idea of the ostensive aspect. Official documents laid down in the school's assessment policy seem to be the frame that shapes the idea of what the routine is for this group of teachers. The teachers who used practical assessments to explain the routine seemed to have a flexible idea of the ostensive aspect. Although that these teachers seem to have a clear idea of the school's

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assessment policy, their idea of how actions should be performed vary because of specific details in professional settings in which the routine can take place. The group of teachers who described the routine in the context of assessment as learning appear to have a flexible idea of the ostensive aspect as well. They indicated that each student creates his or her own personalized portfolio, leading to a different perception of what the routine is. In all, the results suggests that the more the context of the routine shifts towards practice, the higher the level of flexibility and the more variation within the perception of the ostensive aspect seemed to be.

**Performative aspects.** As with the description of the ostensive aspects, the same three groups could be distinguished for the way in which teachers described the performative aspects of the routine. However, not all teachers described their actions for each phase of the routine. This is because there were participants who indicated that they did not perform actions within one or more phases at all. Nonetheless, the results showed that the teachers who used the same context to explain their routine provided similar descriptions of how they actually perform actions in practice. Therefore, the same three groups that are used to describe the ostensive aspects are used to present the results of the performative aspects of the testing and assessment routine. The way in which the contextual differences resulted in different performances of the routine is described in detail below within the paragraph that summarizes the results of the performative aspects.

**Goalsetting.** The majority of teachers (12 out 20) explained their actions from the perspective of written exams. Within this group, there were three interviewees who indicated that they did not perform actions regarding the goalsetting at all. These teachers mentioned that they used a testing method for which the goals were similar over the years. As one of them commented: *'The courses I teach have an assignment that is simply fixed in advance. For example, for one course, students have to do a career research with a person of their own choice, the testing has been almost the same over the years so I do not have to propose new goals'*. Hence, they did not perform actions to formulate goals for a test.

The interviewees in this group who did perform actions reported a performative aspect in which they used the learning objectives to formulate learning outcomes in terms of what students are expected to know, understand and/or be able to demonstrate after completing a course. The results showed that teachers followed official documents to formulate goals for a test. Teachers attended to the EER of their educational program in which the learning objectives were drawn up for the courses they taught. For example, one teacher described: *'I start with the end goal: 'Where do I want a student to be after taking the course?'. From there I go back reasoning: 'What outcomes belong to that and how could I test that?'. This then results in the goals you describe for a test.'*. In other words, the learning outcomes that are formulated for a course represents the goals for testing and assessment. Further, the interviewees in this group mentioned that the goalsetting differs for different types of studies and different types of

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students. For example, in the first years of management studies, test goals will be more theoretical in nature, whereas test goals for first-year students in healthcare studies will be on the level of applying theory in practice. As one of the teachers explained: *'In the first years, the aim of testing is providing students with a theoretical base. Later in the study, students have to show that they can apply that theory in practice. That's the underlying thoughts that I use to create the test goals'*. So, the way in which teachers formulate goals for testing depends on both the study program and the students as the target group. Next to that, teachers mentioned that they had to make some adjustments in the way in which they formulated goals for testing due to the outbreak of the Corona pandemic. They indicated that they were suddenly forced to reformulate the test goals that would fit an online exam. As one teacher commented: *'It's a different way of approaching tests, I had to change the aim of the exam because of Corona in such a way that the test goals would also be valid in an online situation'*. So, teachers had to adjust their way of thinking in how to formulate goals for an exam. Interviewees did not report any other specific changes for goalsetting because of the Corona pandemic.

The group of teachers (6 out of 20) who described their routine in the context of practical assignments reported a performative aspect in which they primarily focused on trends and developments in the professional field. Teachers in this group explained that they conduct both desk and field research to create an overview of relevant topics that they may want to use in formulating goals for a test. As one teacher described: *'I keep myself up to date by reading the news, keeping track of the latest developments in the field and I ask professional about their experiences in practice. This helps me to formulate test goals that comply with the future work environment of the student'*. In addition, interviewees mentioned that they implemented a practical component in the test goals in terms of tasks and responsibilities that students will be confronted with within their future jobs. As one teacher commented: *'I ensure that the goals are practice-oriented by indicating the benefits for the employer with regards to the aim of the assessment'*. In this regard, the teachers in this group indicated that they formulate test goals on the level of application in terms of concrete behavior that students have to show in practice. Here, the outbreak of the Corona pandemic did not lead to specific changes for the way in which goals were formulated. Teachers did mention that they had to reformulate initially stated test goals, but the way in which they did that was not different than before the Corona crisis.

The minority of teachers (2 out of 20) who described their routine in the context of assessment as learning indicated that they did not perform actions for the goalsetting at all. They indicated that students work on several self-chosen projects at real organizations for which they define the aim of the projects themselves. As one of the two explained: *'A student could say: 'I'm going to do the software engineering track'. He or she selects potentially interesting projects and the student defines the performance indicators by those project by his or herself. An that's how the curriculum is actually created by the students themselves'*. The interviewees in this group mentioned that they guide students in the role of a coach, but the students have to take the initiative to ask for additional support. These teachers did not mention any specific changes of their actions because of Corona.

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Taking together, it appeared that teachers varied in their perception of the performative aspect of goalsetting. Moreover, there were teachers who did not perform actions for goalsetting at all. Teachers who used the context of written exams appear to be guided by official documents to formulate test goals. The group that described the routine in the context of practical assessment were less guided by official documents. They focused on trending topics in the professional field to create the goals for testing. The minority that described the routine in the context of assessment as learning did not formulate test goals at all. They let students create the aim of a testing themselves. In all, it seemed that teachers have to rely on their own expertise and creativity for the goalsetting when practice is involved in the testing process.

**Measuring.** Teachers (12 out of 20) who described their actions in the context of written exams reported a performative aspect in which they were guided by the school's assessment policy to create an examination plan. Within such an examination plan, teachers write down what testing method will be used and the assessment instrument that is applied to measure the prosed learning objectives. In this regard, one of the teachers explained: *'I look at the learning objectives, what is already available for testing about this topic and also what I personally think that is important to pass on to the students. On that basis, I create the test matrix in which I specify how I'm going to test the learning objective of the course'*. The examination plan is as the blueprint for teachers to setup the testing and assessment. The results further showed that teachers who used the context of written exams applied the two pairs of eyes principle when they were engaged in the process of measuring. Here, they used email or communicated via the school's platform to check each other's work. For example, one interviewee said: *'Some teachers actually sit together, I just send the testing via email and ask a colleague to look at it. That's how I apply the two pairs of eyes policy'*. This is the case for both the design of the testing as well as for the analysis of test results after test has been taken by students in practice.

Five of the teachers who described their routine in the context of written exams specifically mentioned that they attend to online data bases to create test questions for an exam. They select the questions they consider to be important to assess the learning objectives. As one teacher explained: *'We have a digital database with over a 100 test questions that we select. It is then just simply a single press on a button and the exam is ready for administration'*. Further, teachers in this group mentioned that they attend to the testing of previous years to construct the exam. For example, one teacher described: *'I have to say that I never created a course all out of nothing, so I design the testing by using a piece of education from previous year'*. However, the outbreak of the Coronavirus forced them to make some adjustment in the designing process. They were used to create a single testing for all students. Social distancing policies required them to design a personalized examination. As one teacher explained: *'Test taking on a centralize location was no longer possible and the testing method became a take-home exam. Therefore, I created an exam for each student individually instead of one exam for all students together'*. In all, it seemed that teachers in this group followed a structured actions pattern laid down in the school's assessment policy to design a test, organize test taking and to analyze test results.

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The teachers (6 out of 20) who described their routine in the context of practical assessments described their actions regarding measuring from the perspective of assignments for students doing an internship. Teachers in this group indicated that the essence of the period in which a student works as an intern is to learn all the ins and outs of the job. One way of doing that is by working on a number of assignments to show evidence of their professional behavior. In this regard, teachers explained that they create a manual in which they provide students with guidelines for assignments that they are allowed to do at the organization. The manual contains instructions and a set of performance indicators to assess the learning objectives for the internship. For instance, one teacher described: *'Based on the learning objectives, I formulate the burden of proof the student must provide to meet those goals. I'll just name one: 'The student can create support', which is very difficult to determine when someone can or cannot do this. For this, the student must gather feedback within the organization that shows that he can do this. The student must describe it from theory and need to reflect on it from his own perspective'*. Students are guided by a supervisor at the workplace during the internship. The supervisor provides students with feedback on their professional behavior and on the assignments. The assignments, together with reflections on the feedback, are bundled in a report that will be assessed at the end of the intern period. Two teachers in this group explained that students also have to take a performance assessment as a means of an aptitude test at the end of the internship. Students have to do a specific action or task to show that they are also able to perform under pressure. However, the Corona pandemic forced teachers to create an alternative assignment. As one of the two described: *'Due to Corona, a practical situation was no longer possible and I have now written a simulated case scenario that the student must solve by means of a description in report form.'* The other interviewees did not mention any specific changes because of the Corona pandemic.

Finally, the minority of teachers (2 out of 20) who described their routine in light of assessment as learning indicated that they did not perform actions regarding the designing and administration of tests at all. They explained that the testing is created by the student because they have to search for projects at real organizations themselves. As one of the teachers described: *'We don't have to create the assignments, students deal with challenges at real organizations in practice. So the time that you normally spend on designing and reviewing of testing is now available to have a conversation with students'*. Interviewees in this group indicated that they did perform actions regarding the analysis of test results. They explained that they assessed a portfolio in which students describe the outcomes of the projects and reflect on their learning by working on those projects in practice. Compared to the other groups, teachers in this group were primarily focused on the reflections of students on their learning, the actual outcome of the assignments seemed to be less important to them.

Taken together, the results showed that teachers varied in their perception of the performative aspect of measuring. It appeared that teachers who described their actions in the context of written exams were mainly guided by official documents to design a test, organize test taking to review test results. The group that was concerned with the measuring of assignments of students doing an internship seemed

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to be following the guidelines laid down in the school's assessment policy as well. They create an instruction manual that needs to align with official standards. It appeared that teachers who applied the context of assessment as learning assisted their students when they are engaged in an assessment. So again, it seemed that teachers have to rely on their own expertise and creativity when the testing is placed in a practical context.

**Grading.** The minority of teachers (2 out of 20) who explained their routine from the perspective of assessment as learning indicated that they did not grade their students. They mentioned that students can complete their assignments when an organization indicates that they are satisfied with the results. For this reason, interviewees did not give a passing or failing mark on the assignments.

Participants who were placed in the other two groups indicated that they did grade students with a passing or failing mark. The teachers (12 out of 20) who described their routine in the context of written exams indicated that they allocate points to test results by using predefined test criteria laid down in an assessment rubric. As one teacher described: *'The assessment rubrics is created in advance. Once the testing has been taken, I will score students on each part of the exam, give feedback where necessary, after which I determine the final grade with a simple calculation'*. So, they relied on official documents for actions regarding grading. Here again, an important requirement appeared to be the policy of using two pairs of eyes. Teachers mentioned that they have their test results checked by at least one other colleague to ensure that all the points are allocated correctly. However, teachers indicated that the grading has become a more time-consuming process because of the Covid-19 measures. Since a centralized exam is no longer an option, students now get a personalized exam. As one teacher indicated: *'I now have to assess each student individually, whereby the criteria are slightly different each time. So I actually assess each exam separately'*. Teachers have to grade all the exams one by one with different criteria instead of grading all the exams in a similar manner.

The teachers (6 out of 20) who described their actions in the context of practical assessments indicated that they used assessment rubrics for the grading as well. However, they mentioned that they did not adhere to all the criteria that strictly. Teachers explained that the assignment is more than just a product at the end. Students receive feedback and write reflections on it to show what they learned during the period of working on the assignment. Because of this, teachers indicated that they were mainly focused on students' professional development throughout a period. As one teacher described: *'We do not use the rubrics that strictly because the development of students cannot be assessed by simply thick of a couple of criteria that you put on an assessment form'*. The teachers in this group appear to put their attention to their impression of the learning process by looking at the reflection on the feedback students got from the workplace. One of the interviewees exemplified this as: *'We are gradually working towards such a test and it has already preceded moments where the student has received feedback and wrote reflections on that. I then enter into a conversation with the student in order to determine whether everything is sufficient or where improvement may be needed'*. Here, the assessment criteria are used as



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underlying frame. The choices that students made during the internship and the reflections of their learning determines the final grade.

Taking together, it appeared that teachers perceived the performative aspect of grading relatively similar. It seemed to be that it is a relatively small part of the routine in which teachers award points to test results that indicate whether students passed or failed for a test. Teachers who used the context of written exams as well as the teachers who explained their actions from the perspective of practical assessments were guided by official documents for the grading. They used predefined criteria laid down in an assessment rubrics to assign the grades. However, the minority of teachers who used the context of assessment as learning to describe their routine did not grade at all. It appeared that they were guided by the judgement of the organization to assess whether students completed an assignment successfully or not.

**Deciding.** All of the interviewees did provide a description of their actions regarding the phase of deciding. The majority (12 out of 20) who used the context of written exams to describe their routines indicated that they evaluated the criteria laid down in the assessment rubrics to decide whether the grades were constituted correctly. As one teacher said: *'After I assigned the grades, I check the assessment criteria again and look at all the test questions to see whether there were formulated in the right way and if some of them need to be changed because they may be interpreted in the wrong way'*. In this way, the distribution of test scores are checked and the quality of exams is evaluated. The evaluation is performed by at least two examiners. However, five teachers in this group mentioned that they did not always follow the two pairs of eyes policy that strictly. As one of the teaches commented: *'Normally, we take the decisions individually. If it is on the verge of a pass we apply the four eyes principle, otherwise not'*. The other teachers indicated that they did follow this policy for every exam. Further, not all of the interviewees were concerned with the reporting of exam results. Four teachers in this group described that they report the analysis of the exam results specifically to the examination board within their school. As one of the teachers described: *'We have the exam committee, in this case I am also the senior lecturer, so I'm also involved in reporting those test results to that committee'*. The other interviewees mentioned that they consult with each other about the quality of exams. They did not mention that they report to any committee within their school. The results did not reveal that teachers in this group changed their actions because of the measures taken because of the Corona pandemic.

The interviewees (6 out of 20) who described their actions in the context of practical assessments explained a performative aspect in which they decide whether students showed a required development as a professional. Teachers indicated that the essence of the assignment is to assess the degree to which students can conduct themselves as a professional. The product is the evidence in which students have to show their learning and development as a professional on the job. Students will be assessed on the assignments together with the collected feedback within practice. For example, one teacher said: *'I look at that professional development. I look in the final report to see if I see that out, the student should be*

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*able to tell me what he has done and how he could possibly do this differently or better next time, that is what I focus on*'. Teachers indicated some difficulties because of the Corona pandemic to this end. The interviews showed that the decision making process has become more intensively as students cannot be visited anymore. As one teacher commented: *'When you talk about assessment, it is now quite difficult to determine digitally whether someone is at the right level'*. New forms of online remote assessment make it more difficult to monitor the development of students during a period to estimate the required level at the end.

In contrast, the minority of interviewees (2 out of 20) who described their actions in the context of assessment as learning provided an alternative description of their actions regarding deciding. They explained that their decision is solely based on the competence growth students show throughout the study program. As one of the two exemplified: *'It is all about competence growth. We use the HBO-i competencies structure in formulating the performance indicators with which we measure whether students passed for the study program'*. The teachers mentioned that they did not have separate courses within their study program. Students show their growth and development by working on several projects at real organizations during their education. They bundle all the assignments in one performance portfolio that will decide whether they master an acceptable level of the necessary competencies.

Taking together, it appeared that teachers varied in their perception of the performative aspect of deciding. The results showed that teachers seem to use official documents more strictly when they are concerned with fact checking of a written exam. They appear to rely on their own knowledge and expertise when they are engaged in testing and assessment in practice. Teachers who described deciding in the context of written exams focused on the correctness of formal criteria, the other teachers seemed to be focused on the deciding upon the learning progress of the student as a professional.

In summary, the performative aspects of the testing and assessment routine varied among the interviewed teachers. Moreover, it appeared that not all of the participants performed actions in each phase of the routine. Variations in how teachers perceived the performative aspects appear to be the result of different contexts that teachers used to explain how they enacted the routine. In addition, personal factors (i.e., what teachers personally thought to be important to focus on) seem to be affecting the performance of actions. The majority of the participants who described their actions in the context of written exams appeared to be mainly attending to procedures and guidelines laid down in official documents to perform the routine. The teachers who described their actions in the context of practical assessments appear to be less guided by official documents. They seem to be relying on their own experience and expertise as a teacher to perform the routine. The minority who described their actions in the context of assessment as learning shifted the performance of the routine to the students themselves. It appeared that they take the role of a coach to guide and support students when they are working on challenges at real organisations in practice. In all, it seemed that the more the context of the routine shifts towards practice, the higher the level of improvisation and the more teachers will rely on their

own expertise to perform the routine. This suggests that contextual differences in terms of the testing methods determine the way in which teachers actually perform the routine in practice.

### **Routine change behavior**

The second part of the first research question was about teachers' change behavior within their routines: '*[...] how did they (not) change that routine?*'. In this study, routine change was examined in light of technological changes and the changes in higher education because of Covid-19. Important to note is that the contextual differences that were used to describe perceptions of the ostensive and performative aspects will not be applied to describe the teachers' change behaviors within their routines. The reason for this is that the teachers who were engaged in a particular type of routine change behavior did not use the same context to describe the ostensive and performative aspect of the routine. Moreover, there were participants who described several ways in which they changed the routine, resulting in a deviation of participants among multiple groups that represented how teachers changed their routines. Because of this, the sizes of the groups that indicate how teachers changed their routine are higher than the total number of teachers who participated in this study. An overview of the change behaviors that are found among the interviewed teachers is presented below.

**Repairing.** Twelve out of the 20 interviewed teachers repaired their routine. The results showed that teachers repaired their routine in various ways. An example of a repair of the routine was a change of the way in which teachers designed tests and organized test taking during the Corona pandemic. Social distancing policies taken by Dutch government forced teachers to make a shift towards online remote assessment. Because of this, teachers replaced a written exam, that would normally be taken within the exam halls at the university building, by an online take home exam. Teachers wanted to ensure that students would still be able to finish their courses by taking the exam in an online situation. Because of this, teachers designed the testing in another manner so that it would also be appropriate for an take home exam, thus making a change in the way in which they designed the testing and organized test taking. For example, one teacher said: '*The exam was suddenly useless. We had to design a new exam in one go, but we weren't ready to test students online yet. I replaced the testing for an alternative exam in the form of an online test*'. This repair changed the performative aspect as it is an one-time modification of the way in which actions are performed.

Other examples of teachers repairing the routine were focused on students taking an online exam individually. Teachers tried to avoid cheating by changing the way in which they usually designed the testing. For example, one teacher described: '*The Physics exam is now an online test, so I recreated the exam with specific questions for each student individually to prevent fraud as much as possible*'. Again, this example of a repair of the routine changes of the performative aspect since the same actions are performed in a different way at one moment in time. Another example of teachers repairing the routine

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to prevent that students would commit fraud was the use of online proctoring tools during the exam. As one teacher indicated: *'Testing on a centralized location was not an option anymore. To still guarantee the individuality of students, we now do our surveillance online via the webcam while students take the exam at home'*. Here again, performing surveillance via webcam instead of physically at a centralized location is an example of a repair that changes the performative aspect. Actions are changed at one moment in time.

Further, teachers provided descriptions of them repairing the routine because they experienced problems with the assessment of testing with psychometrical purposes (i.e., students demonstrating their skills in practice). Teachers replaced a physical assessment by an online method. As one teacher explained: *'The problem is the assessment of practical skills. We can't do this physically anymore, so we reached out to other ways like a simulation or online presentations as temporary replacements'*. Here, once again, the repair to the routine changes the performative aspect as actions for assessment were replaced at one specific moment in time. Next to that, the results showed evidence of teachers repairing the routine that were not related to measures taken because of the Coronavirus. An example given in the interviews related to a problem that had to do with current assessment methods. Teachers indicated that they anticipated difficulties to distinguish between students who performed great or excellent and bad or highly below standards. As one teacher described: *'We changed our assessment method by replacing our rewarding scales by means of assessment rubrics. A colleague and I critically looked at what we actually want to achieve with the assessment and redevelop the whole assessment structure'*. In this case, a repair of the methods for assessment changes the ostensive aspect because of a procedural replacement. It changes a step in the standard operating procedure of the routine.

Nine of the participants who repaired their routine were teachers who described the ostensive and performative aspects in the context of written exams. There were three teachers who described the routine in light of practical assessment. None of the interviewees who repaired the routine used the context of assessment as learning to describe the routine. The results pointed out that the teachers who repaired the routine had a relatively rigid perception of the ostensive aspects. They indicated that the school's assessment policy contains specific rules and requirements that they have to follow in order to perform the routine. For example, one teachers said: *'There are some clear requirements that you will have to follow for testing that are all drawn up within the EER. The learning objectives are formulated where you have to work with as a teacher, it is also stated which methods you will be using for testing and how you should assess students at the end'*. So, teachers who repaired their routine seem to perceive clear guidelines within the school's assessment policy with respect to testing and assessment. This is in line with the way in which they described how they actually performed actions in practice. The participants who repaired actions were the same people who indicated that they were guided by official documents to perform actions. For instance, the interviews illustrated that these teachers followed guidelines laid down in the school's assessment policy to design the testing, whereas teachers who did not repair the routine were focused on their own knowledge and expertise to design the testing. This

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suggests that there is variation in the way in which actions are actually executed. It seemed that teachers who repaired the routine relied more heavily on a prescribed script compared to teachers who changed their routine in an attempt to improve it.

Taking together, it appeared that teachers repaired the routine in various ways. They changed the performative aspect more frequently than the ostensive aspect. Teachers replaced actions in the performative aspect to deal with the changes in education because of the Coronavirus. Participants changed steps in the ostensive aspects to be able to generate more desirable outcomes. Next to that, the teachers who repaired the routine had a relatively rigid perception of the ostensive aspect. These teachers seem to be guided by the school's assessment policy to perform the routine in practice. A closer look at the results showed that five out of the 12 teachers were only engaged in routine change behavior that reflected a repair of the routine. Six teachers who repaired actions did also reported changes that related to an expansion of the routine. There was one teacher who described changes that could be labelled as a repair of the routine and as striving towards better results. None of the teachers who repaired the routine reported changes that reflected to all of the three ways in which routines can change.

**Expanding.** Eight out of the 20 interviewed teachers expanded the testing and assessment routine. The results showed that teachers expanded the routine primarily because the Corona pandemic confronted them with challenges to create online remote assessments. Teachers indicated that they did not have the knowledge and expertise regarding the possibilities for online testing and did not know how to properly use technological tools to this end. Because of this, they expanded the routine by reaching out to colleagues to get support for using online tools for testing. For example, one teacher described: *'I'm not that familiar with all the online tools out there so I tried to find somebody who could help me with that to create a suitable testing. There is an ICT helpdesk, but it is mainly that we help each other as teachers in this regard'*. Here, an increase of interaction among teachers to design the testing changes the ostensive aspect as it adds an additional step to the operating procedure of the routine.

Another example of an expansion of the routine was an increase of formative assessments because of new challenges with exam preparations in an online situation. An unexpected shift towards online teaching led to a limited interaction between teachers and students. To take on the challenges of exam preparations in online education, teachers expanded the routine by adding additional formative assessments. As one teacher explained: *'We noticed that students had difficulties to find their way in this new situation, the challenge for us as a teachers is to ensure that students actually work with the teaching material. Because of this, we build additional formative assessments and encourage them to dive further into the material by providing constructive feedback with that assessment'*. Again, the expansion changes the ostensive aspect since the implementation of formative assessments adds an actual step to the routine. Despite that teachers indicated that they had difficulties in finding their way in the online world of testing, they also see chances for improvement. There were teachers who indicated that they used the technological features to facilitate students during the administration of online exams.

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For example, one teacher described: *'I added a hyperlink in the test question so that students can search things up easily. In that sense, I used the features of online examinations to help students taking the test'*. The functionality of the digital environment is used to improve students performances on the test. This is an example of expanding that changes the performative aspect since it involves an additional act being performed at one moment in time.

The interviews pointed out that most of the teachers who expanded the routine described the ostensive and performative aspects of the testing and assessment routine in the context of written exams. Six teachers who described their routine in the context of written exams changed their routine by an expansion of actions. There were two teachers who described their routine from the perspective of practical assignment who were also changing their routine by expanding it. None of the teachers who used the context of assessment as learning expanded the routine. Relating this to how teachers described the ostensive aspects, the interviews showed that participants who expanded the routine perceive relatively clear guidelines within the school's assessment policy for testing and assessment. This is comparable to the perception of participants who repaired their routine. This can be explained by the observation that the majority of teachers who expanded the routine were same people who reported changes that reflect a repair of actions. So, teachers who expanded the routine perceive stability within the ostensive aspects of the testing and assessment routine. Looking at how participants who expanded the routine described their perception of performative aspects revealed that they were also relying on the school's assessment policy to perform the routine most of the time. Moreover, it appeared that the teachers who perceived a clear assessment policy to execute actions were the same teachers who described their routine in the context of written exams. This suggest whether teachers perceive rigidity within the routine depends for a major part on contextual details in which the routine takes place.

Taking together, the results showed that teachers expanded the routine because they were confronted with challenges in the area of using online remote assessment because of Covid-19. They expanded the routine by adding steps into procedural structures that changed the ostensive aspect. In addition, a shift towards online teaching provided opportunities to improve the routine. Teachers used technology to add features to the exam to increase the performances of students on the test. This changed the performative aspect of the routine. It appeared that participants who expanded the routine had a less rigid idea of the ostensive aspect, as compared to teachers who repaired actions. They seem to perceive clear rules and conditions to perform actions but did also feel that they were allowed to interpret actions by themselves. Zooming further into teachers' change behavior revealed that teachers who expanded the routine reported behavior that showed evidence of a repair of actions. Six out of eight teachers who expanded the routine did also changed the routine by repairing actions. Two teachers who expanded the routine did also strived for more. This means that there were no participants who were merely adding actions to the routine. Teachers who expanded the routine were also engaged in routines changes that could be labelled as repairing actions or changing actions in order to strive for better results.

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**Striving.** Seven out of the 20 teachers changed their routine because they strove for better outcomes. Unlike repairing, teachers refined and/or replaced actions in an attempt to attain something that is far more difficult to attain. Examples of striving were mainly aimed at improving the methods for testing in an attempt to create an assessment that is more realistic to situations in a professional setting. For example, one teacher described: *'I regularly propose new things to improve education, I already started with online testing for one of my courses and I developed simulations together with a colleague. With all that kind of things, I try to improve education to better prepare students for practice, all from an ideal image of how I think that it could be improved'*. The interviews showed that a shift towards online teaching resulted in teachers starting to experiment with online tools for testing in an attempt to improve education. As one teacher said: *'Because of the crisis, we are in the middle of a huge educational experiment with all those new tools for testing and assessment, so now is the time to try things out'*. It is a process in which teachers continuously consider what the best option would be to make testing and assessment even better. Here, an adjustment of the methods for testing is an example of change within the ostensive aspect of the routine. It is a contextual adjustment that changes the abstract idea of the testing and assessment routine.

Other examples of routine changes in which teachers strived for more were found in the areas of assessing students' performances on the test. In addition to teachers assessing students, interviewees indicated that they used assessment for further improvements of education. An example of a change of the assessment method was taking another approach in designing the assessment. As one teacher described: *'I always try to improve, also by making all kinds of adjustments in the way of assessment. I try all kinds of things with students, also let students assess each other. In a certain sense, I design the assessment together with students, also because I want to think together with them about how I can improve my teaching'*. Here again, the inserted change modified the ostensive aspect of the routine since the abstract idea assessment changes into peer assessment. Another example of changes that aimed at improving education were focused around the way in which teachers designed the content of exams. There were teachers who indicated that they tried to guide students as good as possible to contribute to their exam performances. For example, one teacher described: *'I added components to the exam, gave additional instructions and, above all, I consciously think about: 'How can we improve our courses by using other strategies for examination to make the results are as good as possible?' Those are things that keep me busy'*. Again, this is an example of a change to the ostensive aspect since a change of a strategy of design exams changes the idea of how teachers think of the global structure of the routine.

The interviews pointed out that teachers who strove for better outcomes varied on contextual details that they used to describe the ostensive and performative aspects. Three out of the seven teachers who strived for more explained their routine in the context of practical assessments. Two teachers used the perspective of written exams. The other two teachers in this group described their routine in the light of assessment as learning. Participants who engaged in change behavior that was labelled as striving for better outcomes reported that they perceived flexibility within the school's assessment policy. For

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example, one teacher said: *'There are some guidelines to formulate the test goals and to design the testing. However, rules are not that strictly, it is often 'wet finger work' in which you have a lot of freedom as a teacher'*. So, these teachers seem to perceive a lower extent of rigidity within the ostensive aspects compared to teachers who indicated that they repaired actions and/or expanded the routine.

The results further showed that teachers who strived for better outcomes seem to perceive that they are allowed to interpret the school's assessment policy by themselves. It seemed that they were less strictly required to follow specific procedures. This suggests that teachers who changed the routine in an attempt to strive for better outcomes relied on their own expertise to perform actions, whereas teachers who repaired actions and/or expanded the routine were mainly guided by the school's assessment policy. Here, teachers who relied on their own expertise described the routine in the context of an assessment that aim at skills and attitudes that students need acquire to behave as a professional in practice. This suggests that the more the context of the testing and assessment routine shifts towards practice, the higher the flexibility and improvisation within the enactment of the routine.

Taking together, teachers who strived for better outcomes were mainly focused on changing the design of the testing to improve it. Changes were identified in the ostensive aspects of the routine. These changes had an overall aim of improving the quality of education by altering the testing and assessment processes. It seemed that teachers who strived to more fully realize their ideals perceive flexibility within the ostensive aspect and feel free to interpret how they perform actions in the performative aspect. Teachers who were engaged in testing and assessment in the context of practical assessment seem to perceive more flexibility in the routine, as compared to teachers who used written exams. There were four out of seven interviewees who reported change behavior that only related to striving for better results. Two teachers engaged in striving as well as change behavior that relate to an expansion of actions. There was one participant who strived towards better outcomes who also reported behavior that reflected a repair of actions within the testing and assessment routine.

**Fixed response.** Finally, a fixed response was produced by one of the interviewed teachers. Despite of the outbreak of the Coronavirus, the teacher indicated that it was not necessary to change the routine. As the teacher commented: *'I continued to use the testing methods that I was using. I can image that other teachers needed to change a lot, but for me personally nothing needed to be changed'*. There was no reason for this teacher to change the routine because actions could be performed in the same way, whether it was an online or offline situation. This teachers did not describe any behavior that relate to one of the three possible ways in which a routine could be changed. There was no evidence of change behavior within the testing and assessment routine for this participants. The one-member group who did not change actions described the routine in the context of written exams. The teacher seemed to perceive the school's assessment policy as stable. Performing the routine required a compliance with official documents that include formally stated procedures according to this teacher. So, the teacher who did not



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change the routine perceived relatively high levels of rigidity within the organizational routine for testing and assessment.

To summarize, the results pointed out that teachers repaired their routine more frequently than they expanded it or strived for more. It appeared that the teachers who changed the routine in an attempt to strive towards their ideals perceive high levels of flexibility within the ostensive aspects and seem to rely almost completely on their own expertise to enact the performative aspects of the routine. Teachers who repaired the routine and/or expanded the routine seem to perceive higher levels of rigidity within the ostensive aspect and are mainly guided by official documents to actually execute actions in practice. Here, participants who repaired the routine appear to have a more rigid idea of the routine than teachers who expanded the routine to make it better. There was one participant who produced a fixed response that did not change the routine. It seemed that this teacher also perceives a stable ostensive aspect and clear guidelines to enact the performative aspect. The results showed that there might be a relation between teachers' change behavior and their perception of the ostensive and performative aspect. It seemed that if teachers have a rigid idea of the routine and are guided by official documents to perform actions, the changes to the routine will be small and relatively uncomplicated. Routine changes seem to be large and relatively complex when teachers have a flexible idea of the routine and perceive to be allowed to rely on their own abilities to perform actions. This suggests that the more people feel free to interpret the routine and the more improvisation is allowed to perform actions, the greater and the more complex changes to the routine will be.

Further, examples of routine changes were most often focused on the design part of the testing in which teachers created an exam that would fit an online situation. They were forced to switch towards online remote education because of the Corona pandemic. Teachers repaired the routine in order to deal with problems that prevent them to perform the routine as planned. In most cases, they replaced actions in the performative aspects of the routine. Teachers expanded the routine by taking on the challenges with online remote assessment by adding steps into procedural structures that changes the ostensive aspects of the routine. Striving towards better results occurred most frequently in the area of changing the way in which teachers designed exams that changed the ostensive aspects of the routine. As teachers tend to repair the routine rather than expanding it or strive for more, their change behavior with regards to organizational routines seem to be relatively reactive in nature. Although that the interviews showed evidence of teachers engaging in expanding and striving, the majority of participants tend to change something if they perceive that there is no other option than a repair of actions. This suggests that teachers who participated in this study have a tendency to respond on changes by repairing their routine to prevent new problems when it comes to change behavior with respect to organizational routines.

### **Motivation to change**

Teachers' motivation to change was studied by measuring their attitude, perceived subjective norm and degree of perceived behavioral control to engage in change behavior. Hence, the second research question was formulated as: *'What is teachers' attitude, perceived subjective norm and degree of perceived behavioral control to engage in change behavior?'*. The results of teachers' motivation to engage in change behavior allowed for a comparison with the way in which they (not) changed their routines. This enabled to see patterns of behavior that answered the third research question: *'How does teachers' attitude, perceived subjective norm and degree of perceived behavioral control to engage change behavior relate to the way in which they (not) change their routine of testing and assessment?'*. Teachers' motivation to change and the change behaviors they in engaged in are described in relation to each other for each of the three motivational variables separately. This allowed to explain the occurrence of change in the organizational routine for testing and assessment. The results are presented below.

**Attitude towards change behavior.** The attitude is about whether teachers felt positive or negative to engage in change behavior. It reflects the expected effort and outcomes that they associate with making changes in their work. The results pointed out that none of the 20 interviewed teachers had a negative attitude towards change behavior. All of the interviewees indicated that they were open to change and that they were willing to invest effort in other ways of working. Although that none of the interviewees had a negative attitude, two groups could be distinguished for the extent to which teachers had a very positive attitude towards change behavior and those who were fine with changing their work. The two groups were based on the degree to which teachers indicated that they expected to attain desirable consequences of insert changes in their work.

One group of participants (9 out of 20) had a very positive attitude towards change behavior. They seemed to have a great willingness to change and appeared to be very much in favour of modifying their work. This is because teachers in this group indicated that they believe that changes are necessary to make improvements on the job. For example, one teacher described: *'I just love change, I regularly initiate new projects because I enjoy it. Also because I'm convinced that when things are changing, you will gain new insights that will help to improve things that can enhance your educational practices'*. It seemed that teachers in this group were very motivated to invest effort in other ways of working as they were in favour of taking the initiative to engage in change behavior. The results showed that almost all teachers in this group inserted changes within the routine with which they strived for better outcomes. For instance, one teacher described: *'In order to realize a better cross-pollination with practice, it is now the case that I actually go to the workplace to create the testing and organize testing in practice. We have more complex and more realistic cases so that we are able to look at the student together with practice to get a better picture'*. In this example, the adjustment of actions changed the ostensive aspect since taking another approach to design the testing and organizing test taking changed the abstract idea of the routine. Overall, the changes that were mentioned by teachers who had a very positive attitude

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appeared to be relatively complex adjustments. They tried to more fully capture their ideals in terms of realizing higher learning outcomes for the students who take the test. This suggest that teachers who have a very positive attitude towards change behavior tend to engage in routine change by means of striving towards better outcomes.

The other group included teachers (11 out of 20) who did felt positive about change, but were more reserved to take the initiative to invest effort in other ways of working. They were somewhat less positive because of the costs they attributed to engage in change behavior. For example, one teacher described: *'I see both positive and negative sights. Negative is that it takes a lot of time to adjust your methods, but I do think that once it has been realized it will provide us with positive outcomes and will also save a lot of time in the end'*. Teachers in this group indicated that they feel positive about the changes they implemented to deal with the Corona pandemic. At the same time, they described that is very likely that they would not have changed their work if they were not forced to do so. They seem to be quite satisfied with the current status quo. It appeared that the teachers who had a less positive attitude towards change behavior mainly repaired actions to prevent new problems. They showed reactive change behavior as they only changed their actions if there was no other option. Teachers seemed to be not motivated to take the initiative for change. For instance, another teacher said: *'As a consequence of the Corona measures, I had to adjust a lot of things for the Psychology exam. It was good to look again what I actually wanted to achieve with it, but I wouldn't have changed it if there wasn't a crisis'*. The reparations that were mentioned seemed to relatively small and uncomplicated. Teachers often changed the performative aspect as they modified actions at one moment in time. Here, it appeared that teachers who had a less positive attitude towards change behavior most often changed their routine by a repair of actions to prevent new problems.

Taking together, all of the 20 interviewed teachers had a positive attitude towards change behavior. However, there was a distinction between two groups that illustrated whether teachers were very positive or more reserved in their positivity to make changes in their work. It seemed that a very positive attitude towards change behavior relates to striving to generate better routine outcomes. Here, changes to the routine will often be large and relatively complex. This is because it turned out that the ostensive aspects will be adjusted, which will lead to other ideas of how actions should occur and tend to be permanent changes of how one will interpret the routine. Next to that, a less positive attitude towards change behavior appear to be related to a repair of the routine. Reparations tend to be small and uncomplicated modifications as the performative aspect will temporary be changed at one moment in time. In all, it seemed that the more positive one's attitude towards change behavior is, the larger and the more complex changes to the routine will be.

**Perceived subjective norm.** The subjective norm is about whether teachers perceived social pressure of important others to insert changes in their work. Two groups could be distinguished in the extent to which participants perceived a subjective norm. The two groups were based on the extent to

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which teachers attached importance to change because they believed that others expected from them that they would perform their actions in another manner. One group included teachers (11 out of 20) who indicated that they did perceive a subjective norm to implement changes in their work. The interviews pointed out that the teachers in this group believe that their colleagues encourage them to propose other ways of working and to initiate changes to improve their teaching. They seem to believe that people of the school's management were the ones who exert social pressure in this regard. This is because they had great influence on the organizational culture. Teachers indicated that they perceive a culture in which they were expected to be innovative. They indicated that they believe that there is a norm in which they should focus on realizing improvements of educational practices. For instance, one teacher explained: *'My colleagues certainly encourage me, also the people above you influence your way of working. I think that we have a culture in which teachers trigger each other to try new things to provide students with the best possible education'*. Teachers referred specifically to the changes in education because of the Corona pandemic that increased a norm to insert changes in their work. They changed their work to avoid that online education would damage students learning.

Further, the results showed that the teachers who indicated that they perceive a subjective norm to engage in change behavior varied in the way in which they changed their routine. It appeared that teachers in this group changed the routine by means of an expansion of actions more frequently than they repaired the routine. They did not change the routine in an attempt to strive for better outcomes. Examples of teachers who repaired the routine were primarily focused on replacing current testing methods by an online exam to deal with the measures taken because of Covid-19. Modifications of the routine changed the performative aspect since it were adjustments of actions at one moment in time. For example, one teacher described: *'When Corona arrived, we suddenly had to test the knowledge in another way. We replaced the centralized exam by an open-book exam'*. However, the majority of teachers in this group indicated that they tried to improve the routine by taking on the challenges with online remote assessment. In this regard, one teacher said: *'For testing purposes, it is now the case that we can plan online meetings for preparation, whereby I notice that a certain hierarchical relationship is disappearing. Students are more open and tell more than when I have a face-to-face conversation with them at school. It also offers more options to be flexible with scheduling appointments'*. In this example, the expansion of the routine changes the ostensive aspect since a procedural step was added to the routine. Overall, teachers who perceive a subjective norm to engage in change behavior seem to insert relatively uncomplicated changes to the routine. It appeared that teachers did not anticipate difficulties to perform the routine in another manner.

Another group included teachers (9 out of 20) who indicated that they did not perceive a subjective norm to engage in change behavior. They explained that they were merely intrinsically motivated to invest effort in other ways of working. They did not feel that their colleagues encouraged them to engage in change behavior. It appeared that participants in this group perceive a culture of islands in which teachers were not concerned with the work of others. For example, one teacher said: *'I*

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*don't consult with others and colleagues don't visit me neither, that's mainly because everyone has their own specialization. So, they are quite a bit of islands within our school in my point of view*'. The teachers in this group indicated that they did collaborate with their colleagues to design their education. They did believe to have a shared vision on teaching but they were not affected by others to perform actions in a certain way. The results showed that the teachers in this group mainly changed their routine by means of striving towards better outcomes. They changed their routine so that they were able to perform actions in a way that seems better to them. For example, one teacher said: *'I try to improve education to better prepare students for practice, all from an ideal image of myself, of how I think it could be improved'*. The teachers in this group indicated that they had their own ideas of how education should be improved and were less interested in a collective improvement plan. The changes mentioned in the interviews were most often modifications of the performative aspect. So, the group of teachers who changed their routine by means of striving for better outcomes seem to be the people who did not perceive a subjective norm to engage in change behavior.

Taking together, the majority of teachers in the current research perceived a subjective norm to engage in change behavior. They seem to feel that there is a norm within their school to invest effort in other ways of working. The results showed that teachers who perceive a subjective norm to engage in change behavior expand actions to improve the routine more frequently than repairing it to prevent problems. They did not change the routine by means of striving for better outcomes. Here, it appeared that changes to the routine are uncomplicated and reactive in nature. The ostensive aspect is often modified by routine practitioners in a response to changing circumstances. It seemed that teachers who did not perceive a subjective norm to engage in change behavior modified the routine that relate to striving for better routine outcomes. In this regard, routine changes are relatively uncomplicated in nature. The performative aspect is often changed at one moment in time in order to perform the job better. In all, it seemed that the more strongly one perceives a subjective norm, the less complex and more reactive changes to the routine will be.

**Perceived behavioral control.** Perceived behavioral control is about the extent to which teachers perceived to be in control to engage in change behavior. It reflects their self-efficacy and associated controllability to engage in change behavior. Three groups could be distinguished in this regard. The three groups were based on the extent to which participants were confident or felt insecure to change and whether they felt facilitated or impeded by resources and information for change.

The first group (7 out of 20) included teachers who perceived a positive self-efficacy and a positive controllability to engage in change behavior. It seemed that they were very confident in their abilities as well as they believed to have the right resources and information within their disposal to insert changes in their work. Teachers in this group seem to believe that they are able to switch easily to other ways of working. They appear to be convinced that engaging in change behavior will not cost them much effort. As one teacher described: *'I dare to say that changes usually go well for me, I'm*

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*really good at that. I'll be able to switch quickly and take a different approach to get things done'*. Teachers in this group seem to feel support of higher management and are satisfied with the provision of information about the school's plans for change. They appear to be especially positive about the communication during the Corona pandemic. They indicated that the availability of technological tools for online remote education were made clear to them. The teachers in this group most frequently changed their routine by refining actions in order to realize outcomes that seemed better to them. They strived for more realistic and practice orientated testing methods, and therefore changed the routine. As an example, one teacher said: *'We saw that students became 'professional test takes' instead of learners who develop themselves as a professional. That is one of the reasons that we skipped the whole design part of testing and let students actually go into practice and find assignments on their own'*. In this example, the ostensive aspect was changed due to a different approach that was taken for the designing of the test. Overall, teachers in this group mentioned relatively complex changes to the routine that were labelled as striving towards better outcomes.

There was a second group (7 out of 20) that included participants who perceived a positive self-efficacy but had a negative perception of the associated controllability to engage in change behavior. Teachers in this group were confident in their abilities to change but were less satisfied about the resources and information that they had to insert changes in their work. A lack of time appeared to be one important obstruction for these teachers to invest effort in other ways of working. They experienced a high workload in comparison with the hours that they worked as a teacher. Next to that, it appeared that they missed support from the school's management in terms of second-hand information about resources and opportunities for change. They were specifically unsatisfied with the support they got about the availability of technological tools to make a shift towards online teaching during the Corona pandemic. For example, one teacher described: *'I do think that we are limited in the resources that are offered to us from the organization to change things. And with the limited time you have, you are sometimes inclined to leave things as they are'*. Although that these teachers had a great willingness to change, they felt somewhat impeded to actually change their work because they perceived a lack of resource and time. Nonetheless, the results showed evidence of teachers changing their routine. Teachers in this group mainly added things to the routine as they took on challenges that enabled opportunities to improve the routine. An example of a change that was given in one of the interviews was: *'I understand that students sometimes thought: 'Gosh, they have not arranged anything here!' We have therefore started to focus more on the progress towards the final assessment and have designed additional sessions to practice before the assessment actually takes place'*. This expansion changed the ostensive aspect as additional sessions to practice with teaching material adds a procedural step. Here, it seemed to be a relatively small and uncomplicated change to the routine since they temporary modified the operating procedure to deal with changing circumstances within a given context.

Finally, a third group (6 out of 20) included teachers who perceived a negative self-efficacy as well as a negative controllability to engage in change behavior. They were not confident in their abilities

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to change and did not believe to possess the right resources and information to insert changes in their work. It appeared that these teachers had difficulties to consider what the best option for an alternative way of working would be. They struggled particularly with choosing the right methods for online teaching, mainly due to a lack of experience with it. As one teacher explained: *'Sometimes you don't know what is possible because of all those different options out there, so sometimes you can no longer see the forest for the trees'*. Next to that, the teachers in this group were unsatisfied with the communication from the school's management about information and opportunities for online education during the Corona pandemic. As more came to light about online teaching, the teachers did not get a clear view of the school's plans, particularly about testing and assessment. For example, one interviewee said: *'It feels like they say: 'Just do something'. That's very difficult for me to determine what I have to change then'*. Teachers did attach importance to change and were willing to invest effort in other ways of working. However, they anticipated obstacles for change. It appeared that these teachers rather tried to postpone the testing instead of doing it in another manner. Interviewees reported relatively uncomplicated adjustments that could be labelled as a repair of the routine. Changes aimed at preventing new problems to deal with the Corona measures. Here, one teacher described an example of a repair of the routine as: *'Because of Corona, we suddenly had to test the knowledge in an alternative way. I had to change the multiple choice test in the form of an open-book exam'*. This is a change in the design of the testing that changed the performative aspect of the testing and assessment routine.

Taking together, teachers varied in the degree to which they perceived behavioral control to change their work. It seemed that a positive perceived self-efficacy as well as a positive perceived controllability to engage in change behavior relate to striving for better routine outcomes. Here, the changes seemed to be large and relatively complex modifications of the ostensive aspects of the routine. A combination of a positive self-efficacy and a negative associated controllability seem to relate to an expansion of the routine, aiming at improving routine performances. A negative perceived self-efficacy and associated controllability seem to relate to a repair of the routine to prevent problems as well as to not changing the routine at all. In all, it seemed that the more confidence people have in their abilities and the more they feel facilitated by the organization, the greater and the more complex changes to the routine will be. When people are not confident and do not feel facilitated by the organization, the greater the chance that the routine will slightly be changed or will not be changed at all.

To summarize, the results of the current research showed that each of the three motivational variables relate differently to the possible ways in which routines can change. At first, a very positive attitude towards change behavior seems to be related to striving for better routine outcomes, whereas a less positive attitude seems to be related to a repair of the routine. This suggests that the more positive one's attitude towards change behavior, the larger and the more complex changes to the routine will be. Second, a positive perceived subjective norm to engage in change behavior seems to be related to a repair of the routine as well as to an expansion of the routine to improve it. A negative perceived

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subjective norm seems to be related to striving for better routine outcomes. This suggests that the higher the perceived subjective norm, the smaller and the less complex changes to the routine will be. Finally, the degree of perceived behavioral control seems to be related to change behavior within organizational routines in three different ways. At first, a positive perceived self-efficacy and a positive associated controllability to engage in change behavior seems to be related to striving for better routine outcomes. Secondly, a positive perceived self-efficacy in combination with a negative associated controllability appeared to be related to an expansion of the routine. Thirdly, both a negative perceived self-efficacy and associated controllability seems to be related to a repair of the routine to prevent problems or to not changing the routine at all. This suggests that the more confidence people have in their abilities and the more they feel facilitated by the organization, the greater and the more complex the changes to the routine will be.

### Discussion

The aim of the current research was to get a better understanding of the occurrence of change within organizational routines. This was done by studying how and why teachers changed their routines for testing and assessment in the context of Dutch higher education. Routine changes were examined as a result of technological changes and, more critically, because of the changes in education as a consequence of the Covid-19 pandemic. Teachers' motivation to engage in routine change was explored by relating their attitude, perceived subjective norm and degree of perceived behavioral control to engage change behavior to the way in which they (not) changed the testing and assessment routine. This resulted in patterns of behavior that provided insights into the, yet unexplored, underlying psychological mechanisms that can be used to explain the constitution of change within organizational routines. Below, the answers to each of the three research questions that were formulated for the current research are discussed first. Subsequently, the theoretical and practical implications that derived from this study are described. After that, limitations that were identified are presented and suggestions for future research will be provided. Finally, an overall conclusion will be given of this study.

### Routines of testing and assessment

The first part of the first research question was about the organizational routines for testing and assessment of the teachers who participated in the current inquiry: *'Which routines do teachers have with regards to testing and assessment in Dutch higher education [...]?'.* Perceptions of both the ostensive and performative aspects were explored to identify the routines among the interviewees. The current research found out that teachers varied in their perception of the ostensive aspect because of different contextual details that they used to describe their routines. This is in line with previous research by Feldman and Pentland (2003) who indicated that there are always contextual details that shape people's perception of what the routine is. Furthermore, the results showed that the flexibility in the



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interpretation of the routine seems to increase when testing and assessment is placed in the context of assessing practical skills in which teachers guide students in the role of a supervisor. Perceptions appear to become higher in rigidity when the routine is placed in the context of written exams where teachers have the role of an assessor who uses prescribed criteria to assess students' work. This aligns with research by Turner and Rindova (2012) and D'Adderio (2014) who stated that people have different ideas of what they perceive as being the routine, based on the different roles they may have as a routine practitioner. So, whether the ostensive aspect of the testing and assessment is seen as flexible or stable is because people perceive different roles as a teacher within a specific context.

Next to that, it appeared that the context in which the testing and assessment routine takes place determines the learning objectives that need to be achieved by the student. Learning objectives form the basis of teaching in Dutch higher education. They guide teaching processes, give direction to students' learning processes and determine the examination method that will be used to achieve the learning goals (Van Berkel, Bax & Joosten-ten Brinke, 2017). The interrelationship between the learning objectives, teaching processes and students' learning processes may explain how an individual teacher perceives the ostensive aspect of the routine. However, learning objectives are formulated within the school's assessment policy and merely indicate what the intended outcomes of the testing and assessment routine will be. People's idea of what the routine is cannot explicitly be found in official documents within an organization. As claimed by Rerup and Feldman (2011), the ostensive aspect is always a matter of interpretation from the inside of those who perform the routine. Policies may only give outsiders some idea of what the routine would be (Dionysiou & Tsoukas, 2013; Rerup & Feldman, 2011). In addition, Biesenthal, Gudergan and Ambrosini (2019) indicated that there is a tacit component within the ostensive aspect that is likely to be different for different individuals in various contexts in which the routine is postulated. Although that this study was focused on teachers' perception of the testing and assessment routine, the outcomes suggests that people's idea of any given organizational routine is stored within tacit knowledge and will depend on contextual details in which the routine takes place.

Further, the current research showed that, even though it seemed that the same people carry out the same actions, the actual performances of those actions vary every time that teachers are engaged in their routine. Like with the ostensive aspect, variations in the performative aspect appeared to be the consequence of the different contexts that teachers can use to explain how actions are carried out. For instance, teachers who perform the routine in the context of written exams seem to be required to adapt their actions to specific rules and requirements to design the test, while teachers who design practical assessments seem to be free to rely on their own knowledge and expertise. These outcomes are in line with the findings in previous research by Orlikowski (2000) and Feldman and Pentland (2003) who indicated that the performative aspect should be understood as inherently improvisational. This is because routine practitioners need to adjust the execution of actions to features of the context in which they act (Orlikowski, 2000). The improvisation in the performance of routines involves attending to actions that are taken by others and focussing on changing details within a particular context (Feldman

& Rafaeli, 2002). The changes in education because of the Corona pandemic seem to be one important explanation of variations in the performative aspect of the testing and assessment routine.

The context in which the routine occurred suddenly changed into an online situation, leading to other interpretations of actions. Because of this, there may have been made other agreements about the routine that established new expectations for the way in which actions must be performed. As Howard-Grenville (2005) indicated, in any organizational setting, the performance of routines depend on specific features of the context. This can lead to other ways in which people interpret their role within the routine, resulting in different approaches to execute actions in practice (Howard-Grenville, 2005). Although that changes seem to temporal and relatively small, routine partitioners will store these new actions in their memory to be able choose from a wide range of possibilities to perform the routine in specific situations (Smets, Morris & Greenwood, 2012). This enables them to make variations in the execution of actions when greater or smaller changes in contextual details allow them to do so. So, this study contributed to literature that aims to find out why the same routine might be performed in another manner by the same people within specific places and times. It was found that changes in contextual details within organizations are useful to understand why people may vary in the performance of routines.

### **Routine change behavior**

The second part of the first research question was about the change behaviors teachers engaged in with regards to their routines for testing and assessment: *'[...] how did they (not) change that routine?'*. The results showed that teachers changed the routine in a variety of ways. They repaired the routine when they perceived a problem that impeded them to perform actions as planned. A repair of the routine was most often focused on the design part of the testing to deal with a forced shift towards online teaching because of Covid-19. Teachers expanded the routine mainly because they faced challenges with online remote assessment. They took on these challenges by using technological tools for testing to add features to the exam to increase students' performances on the test. Striving towards better routine outcomes occurred most frequently through a change of the way in which teachers designed exams. They modified actions in an attempt to establish higher learning outcomes of the students who take the test. In case teachers anticipated no problems, they produced a fixed response that did not changed the routine. The results align with the research by Feldman (2000) and Pentland, Hærem and Hillison (2011) who mentioned these change responses as the possible strategies that people can use to (not) change routines. So, this study contributes to existing literature that explains the different ways in which people can engage in routine change. Moreover, the present study provided insights into teachers' change behavior within the important practice of testing and assessment, which is not studied earlier in the context of Dutch higher education by applying the concept of organizational routines.

Further, the current research found out that there appears to be a relationship between the way in which people perceive the ostensive and performative aspect and how they may engage in routine

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change. It appeared that teachers who repaired the routine had a relatively rigid perception of the ostensive aspect and were completely guided by the school's assessment policy within the performative aspect. Teachers who expanded the routine also seem to have a relatively rigid idea of the ostensive aspect, but appear to be free in the interpretation of the performative aspect. Teachers who strived to more fully realize their ideals appear to perceive flexibility within the ostensive aspect and feel completely free to interpret how they perform actions in the performative aspect of the routine. This aligns with research by Tuominen, Edvardsson and Reynoso (2020) who claimed that change in organizational routines is a derivative of people's perception of a flexible or stable alignment between the ostensive and performative aspect. Flexibility in the alignment between the performances of actions and the prescribed script provides space to change actions in attempt to attain better routine outcomes (Tuominen, Edvardsson & Reynoso, 2020). People will try to prevent problems in order to generate similar outcomes when they believe to be bound to strict norms and expectations for the execution of actions. The extent to which people perceive flexibility within the alignment between the ostensive and performative aspect reflects a degree of individual agency that allows them to insert more complex changes to the routine (Feldman & Pentland, 2003; Howard-Grenville, 2005). While previous research often focused on different kinds of routine outcomes to explore how people may change routines (e.g., Cohendet & Simon, 2016; Conley & Enomoto, 2009; Danner-Schröder & Geiger, 2016), the present study illuminates that people's perception of the routine can also be used to identify how people may be engaged in routine change. It was found that the more people feel free to interpret the routine and the more improvisation is allowed to perform actions, the greater and the more complex changes to the routine will be. So, the current research expanded literature on routine change by illustrating that the perception of the ostensive and performative aspect gives a valuable indication for the way in which people may insert changes to routines.

Finally, the results of this study showed that there were teachers who applied several different changes to the routine, while others used a single change strategy. Teachers repaired their routine more frequently than they expanded it or strived for better outcomes. Teachers who repaired the routine mainly modified the performative aspect, whereas teachers who expanded the routine or strived for more changed the ostensive aspect most of the time. As some teachers used multiple change strategies, the changes to the routine related to both the ostensive aspect as well as the performative aspect of the routine. These results align with previous research by Pentland and Feldman (2005) who indicated that people can change both aspects within the same routine. As an example, they indicated that the ostensive aspect may serve a goal routine practitioners wish to achieve by performing actions as formulated within the prescribed script. People will leave the ostensive aspect as it is, while they will be repairing actions within the performative aspect in order to match better the ostensive part (Pentland & Feldman, 2005). It may also be that people expand their expectations of the routine because of new opportunities that are provided. This changes the ostensive aspect and leaves the performative aspect as it is. Furthermore, the research by Sherer and Spillane (2011) showed specifically how teachers changed the ostensive and

performative aspect of the organizational routine they studied. As within the current research, teachers mainly repaired the performative aspect, while they expanded and strived that changed the ostensive aspect of the routine. Moreover, a repair of the routine occurred more frequently, as compared to expanding the routine or striving towards better outcomes (Sherer & Spillane, 2011). So, the current research contributed to literature about how people change organizational routines, particularly the routine change behaviors of teachers within educational organizations in higher education.

### **Motivation to change routines**

The second research question of this study focused on the motivation of teachers to insert changes in their work. This was done by investigating their attitude, perceived subjective norm and degree of perceived behavioral control to engage in change behavior: *'What is teachers' attitude, perceived subjective norm and degree of perceived behavioral control to engage in change behavior?'*. The results of teachers' motivation to engage in change behavior were compared to the way in which they (did not) changed their routines in order to answer the third research question: *'How does teachers' attitude, perceived subjective norm and degree of perceived behavioral control to engage change behavior relate to the way in which they (not) change their routine of testing and assessment?'*. The results of teachers' motivation and their change behavior with regards to their routines were described in relation to each other. These descriptions were used to define patterns of behavior that allowed to explain the occurrence of change within the testing and assessment routine. Hereafter, the relationships between teachers' motivation and the possible ways in which teachers changed their routine will be discussed for each of the three motivational variables separately.

First, it was assumed that teachers who have a favored attitude to engage in change behavior are likely to engage in routine change. Moreover, it was expected that a positive attitude towards change behavior would relate to striving towards outcomes that more fully captured their ideals. As expected, the results of the current research pointed out that teachers who had a positive attitude to engage in change behavior were striving towards better routine outcomes. It was found that it seems that the more positive one's attitude towards change behavior, the larger and the more complex changes to the routine will be. This is in line with the research by Yang, Choi and Lee (2018) who found that employees who personally favour change will engage in change behavior in which they go beyond what is formally required to make a significant improvement of the status quo. Feldman (2000) stated that routine participants who strive for more have a never-satisfied desire to generate outcomes that are more difficult to attain. Within the current study, teachers who strived for more kept on changing the way in which they designed the testing, aiming at an assessment that is as realistic as possible to improve students' learning. This kind of change behavior is similar to an important characteristic of proactive change behavior that Grant and Ashford (2008) described as creating an intended impact. Striving for better routine outcomes by going beyond what is formally required is more strongly activated through a

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person's intrinsic motivation than through control factors or normative beliefs (Chun, Shin, Choi & Kim, 2013; Grant & Ashford, 2008; Salanova & Schaufeli, 2008; Yang, Choi & Lee, 2018). On this basis, this study revealed that a positive attitude towards change behavior is a valuable predictor for why people would strive for better outcomes through a change of their routine.

Second, it was assumed that teachers who perceive a subjective norm to engage in change behavior are likely to engage in routine change. Here, a perceived subjective norm was expected to be related to an expansion of the testing and assessment routine. The results showed that teachers who perceived a subjective norm expanded their routine to improve it more frequently than they repaired actions to prevent problems. The outcomes of the current research imply that the relation between a perceived subjective norm to engage in change behavior and an expansion of the testing and assessment routine is confirmed by the results of this study. This aligns with research by Carmeli and Schaubroeck (2007) and Kirrane, Lennon, O'Connor and Fu (2017) who stated that people are motivated to improve their performances of organizational practices when they believe that others in the organization expect that they would try to improve their work. Complying with the assumed expectations of others lead to beliefs of appreciation and recognition for an individual (Carmeli & Schaubroeck, 2007). Those beliefs serve as a self-fulfilling prophecy to show higher self-standards with respect to the performances of organizational practices (Eden et al., 2000). This can be related to expanding as change behavior within organizational routines. This is because an expansion of the routine implies that practitioners add actions in attempt to improve the performances of the routine (Feldman, 2000). For these reasons, a perceived subjective norm to engage in change behavior is a valuable predictor for why people change routines by means of expanding actions to improve it.

Finally, the degree to which teachers perceived behavioral control was about whether they had a positive or negative self-efficacy to engage in change behavior and the controllability they associated with it. As Ajzen (1991) stated, self-efficacy is the confidence one has to engage in behavior, while the controllability refers to beliefs about resources and information to perform the behavior in question. Within the current research, it was assumed that teachers who are confident in their abilities and who believe to be facilitated with the right resource and information to engage in change behavior are likely to engage in routine change. Moreover, teachers who feel capable to engage in change behavior and who feel facilitated by the organization were expected to repair the testing and assessment routine. In contrast to what was expected, the results showed that teachers who were confident in their abilities and who believed to be facilitated by the organization changed the routine because they strived for better outcomes. Teachers who did feel confident in their abilities but who did not feel facilitated by the organization were the ones who expanded the routine to improve it. When teachers were not confident in their abilities and did not believe to be facilitated, they appeared to be repairing the routine or did not change the routine at all. In this regard, it seemed that the more confident teachers were and the more they felt facilitated, the greater and the more complex changes to the routine appeared to be.

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The results of this study differ from the findings in previous research by Moss et al. (2009). They argued that employees who are unsure to deliver better results will avoid to change the performances of tasks because they want to prevent personal embarrassment by doing something that may lie beyond their capabilities (Moss et al., 2009). In addition, when people perceive that they are not facilitated with the right resource and information, they will not invest effort to act above their own personal standards (Kim, Hornung & Rousseau, 2011; Moss et al., 2009). When people repair routines, they refine or replace actions in an attempt to generate similar outcomes as were produced previously (Feldman, 2000). Therefore, it was expected that teachers who perceive behavioral control would repair their routine.

A possible explanation for why teachers changed their routines other than was expected has to do with the perceived self-efficacy to engage in change behavior. This can be explained with the research by Tierney and Farmer (2011) and Newman, Tse, Schwarz and Nielsen (2018). They found that employees who feel confident in their own abilities to produce better outcomes are more likely to engage in innovative behavior in comparison with people who are more insecure. Here, innovative behavior is about people who insert new ways of working by implementing new ideas that changes the performances of tasks with the aim of improving outcomes (Scott & Bruce, 1994). This can be compared to expanding the routine to improve it and striving towards better routine outcomes. This is because both expanding and striving aim at altering the routine in a way to establish higher standards of performing actions in an attempt to improve outcomes (Feldman, 2000). Based on this, it can be explained that the group of teachers who felt that they had control to engage in change behavior expanded the routine to improve it or strived towards better outcomes. They felt self-confident to implement new ideas within the routine to make the performances of actions better in order to generate higher routine outcomes.

### **Theoretical implications**

The present study provides several important theoretical implications to scientific literature in the areas of psychology and organization science. At first, prior researchers often studied routine change with a focus on endogenous change efforts through an investigation of the type of change behavior in a response to outcomes of the routine itself (e.g., Aroles & McLean, 2016; Deken et al., 2016). However, the individual psychological mechanisms that may clarify the occurrence of changes within routines remained relatively underexplored yet. As Wee and Taylor (2018) suggested, scholars of organizational change should focus on the different psychological processes that will explain people's motivation and effort to engage in routine change. Studying people's motivation to change routines can be a complex undertaking because there may be multiple different mechanisms that people can take into account to decide whether they would change routines or not (Parmigiani & Howard-Grenville, 2011). In response to this, the current research took an exploratory approach and used the theory of planned behavior from Ajzen (1991) as the research model that allowed to demarcate towards three specific psychological mechanisms that lie behind people's motivation to engage in routine change. Particularly, this study

showed that the attitude, perceived subjective norm and degree of perceived behavioral control towards change behavior are important antecedents for change in organizational routines. Moreover, this research revealed that insights into people's perception regarding these three motivational variables can be used to understand why people would choose to change routines in a particular way in a specific time and place. This brought valuable insights into the challenge raised by Kozlowski et al. (2013) and Wee and Taylor (2018) by taking the perspective of the individual employee to explore emergent psychological processes underlying the constitution of change within organizational practices. This study contributed to this by outlining that the variables of the theory of planned behavior are valuable psychological mechanisms to explore the occurrence of routine change. Scholars can benefit from this study as they are provided with important motivational variables that could be the starting point for future research efforts on the study of change in organizational routines.

Another important theoretical contribution of the present study is about the utility of the theory of planned behavior from Ajzen (1991) in relation to organizational change. Although that the intention to engage in behavior has been shown to be a useful predictor of actual behavior, the model has been applied to a limited extent to study actual engagement in change behavior within organizations (Hassan, Zhang, Ahmad & Liu, 2020). Scholars of organizational change purposed that it is desirable to further validate the theory of planned behavior in its full capacity by relating the three motivational variables to demonstrate how actual change behavior occurs (e.g., Jimmieson, Peach & White, 2008; Yang, Choi & Lee, 2018). The present study adhered to this by measuring the attitude, perceived subjective norm and degree of perceived behavioral control in direct relation to routine change. The theory of planned behavior has been proved to be a useful research model to study actual human behavior in organizations in the field of organizational change management (e.g., Kim, Hornung & Rousseau, 2011). The current research made a contribution to this particular strength of the model through a demonstration of its utility by explaining change behavior within organizational routines.

Further, this study contributed specifically to literature in organization science about routine dynamics. It brought insights into the important issue for scholars of routine dynamics raised by Feldman, Pentland, D'Adderio and Lazaric (2016) to explore how individual routines emerge and why people may change them over time. The current research provided relevant implications in this regard by taking a psychological perspective to explore the occurrence of change within a single routine, namely the testing and assessment routine of teachers in Dutch higher education.

### **Practical implications**

The current research provides relevant practical implications for managers, HR practitioners who seek to understand people's beliefs about change behavior within organizations to be able to support them in the accomplishment of their work. Particularly, this study provided insights into the underlying motivational antecedents of change behavior within organizational routines. Although that the research

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attended to changes within a single organizational routine in educational organizations, the insights offer meaningful implications that can also be used in other organizational contexts to understand how routine changes exactly come about. This is useful to consider effective change supportive interventions that can enhance both the continuity and efficiency in the performances of organizational practices.

At first, this study provides insights into the important practice of testing and assessment within Dutch higher education and how the interpretation of that practice can differ within various situations. As Feldman and Pentland (2003) indicated, there are always contextual details that determine how routine practitioners perceive what the routine is. The current study revealed that the more the context of testing and assessment shifts to practice, the more flexible teachers perceive the ostensive aspect and the more improvisation is allowed within the performative aspect of the routine. These insights are meaningful for HR professionals within educational organizations who are concerned with the optimization and development of testing and assessment. For example, as it turned out that teachers perceive rules and procedures more strictly when they want to use written exams, it may be an idea to explore whether the school's assessment policy is not a barrier for teachers to fully put their creativity in the design of exams. At the opposite, teachers who are concerned with practical assessments may be better off with more explicit guidelines to set up an assessment because they have to be required to rely on their own knowledge and expertise. As such, this research serves as a guidance to consider strategies for reconsidering a school's assessment policy in order to improve the practice of testing and assessment.

Second, the results of this study showed what actions were performed by teachers within each of the four phases of the testing and assessment routine and in which way teachers (not) changed it. According to Feldman (2000), changing routines is also a process of learning within an organization. People who are engaged in routines perform actions, reflect on actions and perform other actions, or perform the same actions in another manner (Feldman, 2000). Portraying the sequence of actions within the testing and assessment routine allows to see when teachers will reflect on what actions and which other actors might be involved within the routine performing process. Reflection is crucial for learning because it is a process of discovery and exploration to interpret experiences in order to form new ideas (Bennink & Fransen, 2007). Managers and HR professionals can anticipate on this by providing routine practitioners with opportunities for reflection. There are various ways to do this. For example, it could be of value that managers or HR staff remind teachers about the importance of reflecting on their actions when they are engaged in the routine. Another option could be to organize meetings in which teachers can reflect with each other upon their actions within the testing and assessment routine. This will give them time to evaluate how they enacted the routine and discuss what they did different than a colleague did. They can learn from one another and write a short reflection report about it. However, due to time issues, it may not always be possible to organize such meetings on a regular base. Therefore, another way to support reflection is to give teachers a specific goal for what Schön (1987) defined as reflection-in-action. This involves thinking about actions that will be performed during the actual execution of it (Anderson, 2019). For instance, teachers can be supported to formulate a learning goal with regards to



the assessment process. They focus on this goal during the actual assessment and adapt their actions based on this goal and write about it afterwards. Such a reflection report can be of great value for managers and HR practitioners to support teachers with their learning. For example, by facilitating in resources for assessment to improve the execution of that task.

A third practical contribution of this study derives from the way in which the theory of planned behavior variables can be applied to investigate change behavior within routines. It appeared that the more positive people's attitude, the more confidence people have in their abilities, the more they feel facilitated by the organization, but the fewer they perceive a subjective norm to engage in change behavior, the greater and the more complex changes to the routine will be. These insights are useful for managers in any organizational setting to apply the model from Ajzen (1991) to explore how people may react to organizational changes by (not) modifying their routines. Knowing people's motivation to engage in routine change is a power mechanism for organizations to adapt its operational management strategies by facilitating in work conditions to foster efficiency of people's performances on the job (D'Adderio et al., 2012; Sherer & Spillane, 2011). Managers can elicit people's beliefs about change behavior by asking specific questions that reflect each of the theory of planned behavior variables. This can be done by developing an intervention in the form of, for example, team meetings or one-on-one conversations in which the behavior will be discussed (Fishbein & Ajzen, 2010). Having identified beliefs about change behavior allows to estimate the magnitude and the complexity of routine changes. This can be useful for organizations to invest in a work environment that is resistant to changes, that are likely to occur in daily performed routines. One way to achieve this could be to establish communities of practice. In such communities, people can share understandings about what they are doing within the organization (Wenger, 2000). Understandings of routines can be exchanged in the community to make meaning of organizational routines as practices that are flexible and changing.

### **Limitations**

There are some limitations in the present study that need to be discussed. A first limitation is that the perception of the attitude, the perceived subjective norm and the degree of perceived behavioral control were not explored in relation to each other to explain whether teachers engaged in change behavior with respect to the testing and assessment routine. In a recent study, Ajzen (2020) described that behavioral engagement can be predicted by the interrelationships of the three variables within the theory of planned behavior. For example, it may be that the attitude is positively or negatively affected by the extent to which a person perceives social pressure to engage in behavior (Singh, Chakraborty & Roy, 2018). Although that motivation to engage in behavior is the result of the interrelationships of the three variables, Ajzen (2020) argued that a separate measure of each of the variables towards a given behavior does provide an accurate predication of behavioral engagement. Nonetheless, this paves the way for future scholars to use the theory of planned behavior for studying change behavior within organizational routines by account for the interrelationships of the variables within the model.

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A second limitation is that the current research relied on self-reported assessments of behavior from the teachers who participated in the interviews. Relying on self-reported data from one particular source can be problematic because subjective responses might offer biased estimates of self-assessed behavior (Jimmieson, Peach & White, 2008; Rosenman, Tennekoon & Hill, 2011). Biased estimates can occur for various reasons. For example, people may feel ashamed to admit that they find themselves not capable of doing something or it may be that people give socially desired answers because they wanted to look good (Rosenman, Tennekoon & Hill, 2011). In the current research, all teachers indicated that they had a positive attitude towards change behavior. This might be a result of spurious self-assessments because participants may thought that they gave a socially desired answer if they say that they were in favour of change. A possible way to overcome biased estimates of self-assessed behavior is to ask, for example, colleagues to rate how they think that others perceive the behavior (Cohen, Manion & Morrison, 2011). However, the present study aimed to gain specific information about teachers' own thoughts and feelings about change behavior. This information could not have been obtained without asking the teachers themselves about the behavior. Nevertheless, future scholars studying people's motivation to engage in change behavior could involve others in a study sample to overcome the shortcomings of same-source biased responses.

A third limitation of this study is that routine change behavior was studied at one moment in time. In previous research, Avital (2000) and Pettigrew, Woodman and Cameron (2001) argued that it may be not sufficient to use a single-snapshot method for researchers who try to provide an accurate picture of how organizational practices change over time. It is better to use a longitudinal study design to fully capture changes of organizational phenomena (Pettigrew, Woodman & Cameron, 2001). According to D'Adderio et al. (2012), studying change within organizational routines at the most valuable level would be to investigate the dynamics through which routines are constructed and emerged over time. Therefore, it might have been more appropriate to study change behavior within the testing and assessment routine over a longer time period. As it was decided to explore routine changes at a single moment in time, an interesting avenue for future researchers would be to study change behaviors of teachers within organizational routines using a longitudinal research design.

Finally, a fourth limitation of this study is the use of a single data collection instrument in the form of semi-structured interviews. As indicated by Kim, Hornung and Rousseau (2011), the research methods for data collection that are used to study change in organizations must reflect the dynamics of change as the topic of interest. With regards to the study of change in organizational routines, multiple observations of routine performances are of great value to understand how routine changes occur and maintain over time (Spillane, 2012). Because of this, a combination of interviews and observations would have been a better approach for this study. However, since the current research was conducted during the Covid-19 pandemic, observations were not an option. Furthermore, social distancing policies taken by Dutch government forced the researcher to conduct online interviews instead of face-to-face conversations. Nonetheless, the semi-structured interviews that were used adequately captured the

routine changes teachers engaged in. This is because the interview data was verified by providing participants with the opportunity to review the interview data afterwards.

### **Suggestions for future research**

The present study provides scholars with directions to guide future research on the study of organizational routines and how and why people may change them. At first, as Aroles & McLean (2016) indicated, routines are ever-changing phenomena that have a great impact on organizational life. Researchers are required to study the dynamics of routines to understand how and why people may change them (D'Adderio et al., 2012). The current research focused on changes within the routine of testing and assessment in Dutch higher education. Perceptions of the ostensive and performative aspects were explored to define testing and assessment as a routine. However, it might be fruitful to take other approaches to understand the dynamics of organizational routines. Pentland and Feldman (2005) argued that researchers who take organizational routines as the unit of analysis may reach a considerably better understanding of stability and change within routines when they consider the relationships between the ostensive or performative aspects and particular artifacts of a routine. Researchers can focus on artifacts of the ostensive aspects like a specific policy document or a written operating procedure, and/or artifacts of the performative aspects such as online tools to monitor work processes (Pentland & Feldman, 2005). While this study focused on the ostensive and performative aspects of the testing and assessment routine and how teachers changed them, it did not studied routine change as a result of the interrelationships of both the aspects, or in relation to artifacts of the routine. Hence, one interesting direction for future research could be to take the testing and assessment routine as the unit of analysis by focussing on artifacts of the routine in relation to the ostensive or performative aspects. One interesting example of an artifact is a specific type of assessment that is used by teachers when they are engaged in the testing and assessment routine. This can provide specific insights of routine change within a particular context.

Second, the current research contributed to an explanation of the occurrence of routine change by studying how and why teachers changed the testing and assessment routine. However, this study neglected to explore the extent to which changes to the testing and assessment routine affected other teaching practices within the organization. Moreover, this study showed why changes occurred and what aspects were changed within the routine, the new organizational routines for testing and assessment that may have emerged as a result of the changes within the routine were not defined. A more comprehensive understanding of the consequences of change within organizational routines can be achieved by observing how people create, implement and institutionalize new routines after they have changed them (Spillane, 2012). It is especially interesting to investigate how these new routines may change other teaching practices because the way in which teachers make sense of new educational changes can vary significantly from individual teachers due to their own conception of teaching (Luttenberg, van Veen & Imants, 2013). Because of this, future researchers are encouraged to take the next step in the study of

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change within organizational routines for testing and assessment. This can be done by investigating the creation, implementation and institutionalization of new routines and how they may affect other educational practices (Spillane, 2012).

Finally, the current research showed that the theory of planned behavior from Ajzen (1991) is a useful research model to study people's motivation to engage in routine change. This involved an exploration of how the attitude towards change behavior, the perceived subjective norm and degree of perceived behavioral control relate to behavioral engagement in routine change. However, it is plausible to think of other variables that can explain people's motivation to change routines. As Wee and Taylor (2018) suggested, future scholars should be encouraged to explore several different psychological process that can explain the motivation and effort to change organizational routines. In addition to that, Ajzen (1991) noted that the theory of planned behavior is open to the inclusion of additional predictors of behavior, as long as the influence of the three main variables stay the same. Hence, a third and final suggestion is that future scholars can find additional variables that can be added to the theory of planned behavior in order to study the constitution of change within organizational. In previous research, Herscovitch and Meyer (2002) indicated that commitment to change can be seen as a person's dedication to take actions in an attempt to make a success of the change. Commitment to change is used earlier by researchers and is supported to be a good predictor of behavioral engagement in in change behavior within organizations (Bouckenooghe, Schwarz & Minbashian, 2015; Fatima, Riaz, Mahmood & Usman, 2020). Therefore, one interesting avenue in this regard is to explore the extent to which people are committed to implement changes in their work. Furthermore, future research are encourage to look for other variables that could be added to the theory of planned behavior as a research model to study change in organizational routines.

### **Conclusion**

This study aimed to explore the occurrence of change within organizational routines by investigating how and why teachers changed the routine of testing and assessment in the context of Dutch higher education. The results of the present study provided meaningful new insights into the underlying psychological processes that explain the motivation of teachers to engage in routine change. Using the theory of planned behavior, this research revealed that the more positive teachers' attitude, the more confidence they have in their abilities and the more they feel facilitated by the organization, but the fewer they perceive a subjective norm to engage in change behavior, the greater and the more complex changes to the routine will be. These insights offered valuable contributions for organizations to better understand how routine changes come about. This can be used to consider effective change supportive strategies that can enhance both the continuity and efficiency with regards to the performance of organizational routines.

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## Appendices

### Appendix A. Interview guide

#### *Introductie*

Allereerst wil ik u hartelijk bedanken dat u de tijd heeft genomen om deel te nemen aan mijn onderzoek. Voordat we beginnen wil ik bij u checken of u de verkregen informatie op het informatieblad heb begrepen en hier wellicht nog vragen of hebt?

Dan zou ik nu verder willen gaan met het interview. Zoals u hebt kunnen lezen zou ik het gesprek graag op willen nemen, als laatste check wil ik u vragen of u hiermee akkoord gaat?

#### *Inleiding met uitleg onderzoek*

Het onderzoek gaat over de handelingen die uitgevoerd worden in een organisatie en de mate waarin deze over tijd veranderen. Hierbij richt ik mij specifiek op de wijze van toetsen en beoordelen van docenten in het hoger onderwijs en waarom en op welke manier zij hun werkwijze hebben veranderd door de veranderingen in het onderwijs. De vragen gaan over uw persoonlijke mening ten aanzien van uw eigen handelen. Er zijn dan ook geen goede of foute antwoorden mogelijk. Het interview zal ongeveer een uur duren.

#### *Algemene vragen*

Om te beginnen zou ik u een aantal algemene vragen willen stellen.

1. Wat is uw leeftijd?
2. Wat is uw officiële functietitel als docent?
3. Binnen welke faculteit / studieprogramma bent u werkzaam binnen uw onderwijsinstelling?
4. Wat is uw hoogste afgeronde schoolniveau? Welke studie / opleiding?
5. Hoe lang bent u al werkzaam als docent?
6. Hoe lang bent u werkzaam in uw huidige functie?
7. Hoeveel uur per week werkt u als docent?

#### *Inleiding voor inhoudelijk gedeelte interview*

Dan zou ik nu verder willen gaan naar de vragen die betrekking hebben op de wijze van toetsen en beoordelen binnen uw onderwijsinstelling. Hiervoor wil ik eerst kort uit willen leggen wat er met toetsen en beoordelen wordt bedoeld in het onderzoek.

Vanuit de literatuur wordt toetsen en beoordelen omschreven als een proces waarin docenten instrumenten inzetten om de prestaties van studenten te evalueren en daarmee te beslissen over hun kennis, vaardigheden en houding ten aanzien van een bepaald onderwerp. Bijv. kennistoets (tentamen),

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toetsen van adviesvaardigheden met adviesrapport, het toetsen communicatie vaardigheden d.m.v. een presentatie, maar bijv. ook een tussentijds verslag om de voortgang van studenten te evalueren.

En als we dan kijken naar de literatuur dan wordt toetsing en beoordeling in het Nederlandse hoger onderwijs als proces overzichtelijk uitgelegd in het boek van Henk van Berkel over toetsen in het hoger onderwijs. Dit helpt om toetsen en beoordelen als proces te begrijpen. In het boek wordt toetsing en beoordeling, in iedere vorm, namelijk uitgelegd als een proces dat in essentie is te herleiden naar vier globale fasen: doelbepalen (=wat moet student opsteken), meten (=vormgeven, afnemen en nakijken), waarderen (=zak/slaaggrens en cijfergeven), en beslissen over de beoordeling en rapportage ervan.

Nu is het natuurlijk goed denkbaar dat het proces van toetsen en beoordelen verschilt per onderwijsinstelling, maar ook voor verschillende opleidingen en diverse type docenten binnen dezelfde onderwijsinstelling. Om te beginnen zou ik daarom in willen gaan op het beleid omtrent toetsen en beoordelen binnen uw onderwijsinstelling en hoe dit wordt uitgevoerd door docenten in de praktijk (*ostensief en performeratief aspect*).

Om te beginnen zou ik in willen gaan op het beleid omtrent toetsen en beoordelen binnen uw onderwijsinstelling en hoe dit wordt uitgevoerd in de praktijk. (*Los van Corona*)

8. Kunt u mij meenemen wat uw opvatting is van het officiële beleid omtrent toetsing binnen uw onderwijsinstelling?
  - Kunt u voor mij globaal de stappen beschrijven die zijn vastgelegd is dat beleid voor toetsen en beoordelen?
9. Wie is er verantwoordelijk voor het bepalen van het doel voor een toets?
10. En wie is er verantwoordelijk voor het ontwerpen van toetsen? (*ostensief*)
  - Kunt u mij daarbij vertellen wat uw eigen werkwijze is? Wellicht aan de hand van een concreet voorbeeld van hoe u normaalgesproken een toets maakt voor uw vakken?
  - Heeft u hierbij contact met de verantwoordelijke partijen die het doel bepalen voor de toets? (*performeratief*)
11. Wie is er verantwoordelijk voor het beoordelen van toetsen? (*ostensief*)
  - Welke partijen zijn hier bij betrokken? (*ostensief*)
  - Hoe gaat u hierin te werk? (*performeratief*) Heeft u contact met partijen?
12. En wie is er verantwoordelijk voor het rapporteren van de toets uitslag voor bijv. de opleidingscommissie? (*ostensief*)
  - Welke partijen zijn betrokken? (*ostensief*)
  - En wat is uw werkwijze hierbij? (*performeratief*)

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13. Hoe vaak herhaalt het proces van stappen/fasen voor een vak?

14. Wat is volgens u het beoogde resultaat van toetsen en beoordelen?

Dan zou ik nu graag een aantal vragen willen stellen die gaan over de veranderingen die u hebt ervaren in uw werk als docent.

### *Inleidend stuk over verandering in werkwijzen*

Als we het hebben over verandering dan zegt de literatuur dat u als medewerker binnen een organisatie bepaalde handelingen uitvoert omdat u een doel/resultaat voor ogen heeft dat u wilt realiseren. Verandering in uw werkwijze ontstaat door een bepaald probleem (of stimulans) wat zich voordoet wat u ervan weerhoudt om dit doel/resultaat te realiseren wat u afhankelijk voor ogen had.

Nu is er door technologische innovaties veel veranderd in het onderwijs. Er is nu meer online onderwijs op afstand en online toetsing wordt steeds meer toegepast. Daarnaast, en meer specifiek, heeft Corona een grote impact op het onderwijs en de wijze van toetsen en beoordelen is hierdoor mogelijk veranderd. Ik ben dan ook erg benieuwd naar uw ervaringen met dergelijke veranderingen in het onderwijs. Echter zou ik eerst even 6 á 7 maanden terug gaan en wil ik het met u hebben over u ervaringen vóór Corona.

Ik kan mij namelijk voorstellen dat er binnen uw onderwijsinstelling mogelijk al beleid was ontwikkeld om als docent om te gaan met onverwachtheden om alsnog de beoogde doelen te behalen ([handvatten voor docenten o.i.d.](#))

15. Bestaat er dergelijke beleid? Kunt u mij hierin mee nemen?

### *Vragen over hoe docenten wel/niet veranderen (repairing, striving, expanding)*

16. En als u naar uzelf kijkt, wat ervaart u dan als voornaamste probleem (stimulans) waardoor u de handelingen die u uitvoert in het proces van toetsing en beoordeling veranderd?

- Wat heeft u dan precies veranderd? Waarom? (**in geval docent zegt: 'ik verander niks'** → **dan vraag je: Waarom heeft u uw werkwijze niet veranderd? Wat zijn daarbij uw opvattingen om niet te veranderen?**)
- Was u hierdoor beter in staat om uw handelingen in het proces uit te voeren? Waarom?
- Wat betekent dit voor het doel wat u afhankelijk voor ogen had, is dit hierdoor verbeterd? Waarom?
- En waren de resultaten van studenten hierdoor ook beter? Waar lag dit aan?
- Zijn er wellicht nieuwe mogelijkheden of kansen ontstaan door het aanbrengen van deze verandering? Welke?
  - Heeft dit u geholpen om uw werk beter uit te voeren? Waarom?
- Welke andere vervolgstappen heeft u overwogen om in de toekomst om te gaan met een dergelijk probleem of stimulans om uw gestelde doelen te realiseren?

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Zoals gezegd is er mogelijk al het een en ander veranderd als het gaat om toetsing en beoordeling vanaf het moment dat u bent begonnen als docent in het hoger onderwijs. Bijv. door de implementatie van technologie en nu ook door Corona.

17. Kunt u aangeven in hoeverre de intrede van technologie in het onderwijs ervoor heeft gezorgd dat u uw werkwijze hebt veranderd als het gaat om toetsing en beoordeling?

- Wat deed u anders? Kunt u een voorbeeld geven? (**vb gebruiken om door te vragen**)
- Waarom heeft u deze veranderingen gemaakt? (*bij niet veranderen weer* → *Waarom niet veranderd? Welke opvattingen voor niet veranderen werkwijze?*)
- Wat betekende deze veranderingen voor uzelf als docent? Wat vond u daarvan?
- Wat zijn de gevolgen van deze veranderingen voor studenten? Wat vond u daarvan?
- Wat ziet u als de voordelen (of nadelen)? Waarom? (*attitude*)
- Vindt u dat u hiermee de door u genoemde resultaten kunt bewerkstelligen? Waarom wel/niet? (*perceived control*)

18. Kunt u aangeven in hoeverre Corona voor verandering heeft gezorgd op uw eigen werkwijze ten aanzien van toetsing en beoordeling?

- Wat deed u anders? Kunt u een voorbeeld geven? (**vb gebruiken om door te vragen**)
- Waarom heeft u deze veranderingen gemaakt? (*bij niet veranderen weer* → *Waarom niet veranderd? Welke opvattingen voor niet veranderen werkwijze?*)
- Wat betekende deze veranderingen voor uzelf als docent? Wat vond u daarvan?
- Wat zijn de gevolgen van deze veranderingen voor studenten? Wat vond u daarvan?
- Wat ziet u als de voordelen (of nadelen)? Waarom? (*attitude*)
- Vindt u dat u hiermee de door u genoemde resultaten kunt bewerkstelligen? Waarom wel/niet? (*perceived control*)

19. Wat zijn mogelijke andere redenen voor u geweest om uw werkwijze te veranderen, **bijv. door voortschrijdend inzicht door ervaring in uw werk als docent?**

En als we het dan hebben over het veranderen van de manier waarop u uw werk uitvoert dan kan ik mij voorstellen dat u hier een bepaald gevoel bij heeft. Dit zou een reden kunnen zijn voor u om uw werkwijze wel of niet te veranderen.

20. Wat betreft toetsing en beoordeling, ervaart u verandering dan als positief of negatief? Waarom vindt u dat? (*attitude ten aanzien van veranderen*).

21. **Opmaken uit vraag hiervoor: 'dus ik begrijp dat u verandering eerder als prettig/frustrerend ervaart'** → Wat ervaart u dan als prettig/frustrerend en waarom? (*attitude*).



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22. Wat zegt dit over uw houding ten aanzien van het verandering van uw manier van werken? Kunt dat uitleggen? (*attitude*).
23. In hoeverre hebben anderen in de organisatie invloed gehad op de manier waarop deze verandering(en) hebt aangebracht? Voel je een bepaalde ‘sociale druk’ om te veranderen? (*subjectieve norm*).
- Op welke manier hadden zij invloed?
  - Wat is hun rol/functie in de organisatie? (*subjectieve norm*).
24. Denkt u dat u invloed hebt gehad op anderen omdat u uw werk hebt veranderd? Waarom wel/niet?
25. Kunt u aangeven in hoeverre u vindt dat u in staat was om verandering aan te brengen in je werk? Vind je dat je controle hebt over het aanbrengen van verandering? (*gedragscontrole*).
26. Welke factoren en/of omstandigheden maakte het makkelijker/moeilijker om verandering(en) te implementeren? (*gedragscontrole*).
27. *Inleiden met samenvatting: als ik u goed begrijp zegt u dat u [positief/negatief] overstaat tegen veranderingen in uw werk, dat anderen [veel/weinig] invloed hebben op de manier waarop u uw werk uitvoert en dat u van mening bent dat u [in staat bent/het lastig vindt] om te veranderen omdat XX dit [makkelijk/moeilijk] voor u maakt.* Wat zegt dit over hoe u als docent omgaat met verandering in uw werk → Heeft u eigen persoonlijke voor-/afkeur vooral invloed op de manier waarop u uw werk doet of vindt u het met name belangrijk dat u uw werkwijze kunt verantwoorden richting anderen in de organisatie? (*dus wordt docent vooral beïnvloed door zijn houding om wel/niet zijn werkwijze aan te passen óf komt het omdat anderen in de organisatie bepaalde verwachtingen hebben en hij/zij hieraan wil voldoen? → attitude/subjectieve norm*)
28. Welke inzichten heeft u verkregen doordat u uw werk op een andere manier uit hebt moeten voeren door het Corona-virus?
- Welke inzichten ziet u als belangrijkste voor uzelf?
29. Tot slot, heeft u door de ervaringen met online onderwijs i.v.m. Corona dingen geleerd/ervaren rondom toetsing en beoordeling die u graag meeneemt naar het volgende schooljaar? Wat u heeft geleerd?
- En is dit ook iets waarvan u denkt dat dit voor een permanente verandering zal zorgen in het toetsing en beoordelingsproces in het hoger onderwijs? Waarom wel niet?

Ik wil u hartelijk bedanken voor het interview. Wat er vervolgens gaat gebeuren is dat ik het interview ga transcriberen om het daarna te analyseren door de belangrijkste zaken in een codeboek te zetten. Voordat de data in het verslag komt stuur ik het naar u toe ter controle.

## Appendix B. Codebook

Categories	Codes	Definition of codes with key words	Examples of quotes
<p><b>Ostensive aspects</b></p> <p>The subjective understanding of teachers about the abstract idea of the routine, reflected by rules, requirements, standard operating procedures, norms and plans laid down in the school's assessment policies. The ostensive aspect also includes a tacit component in terms of norms that are taken-for-granted by teachers. It explains how actions should occur, but not how they are actually performed in practice.</p>	<p>Ostensive: goalsetting</p>	<p>The abstract idea of goalsetting that is reflected by teachers' perception of rules and conditions laid down in the school's assessment policy and what they think of norms and agreements that have been made to formulate goals for testing. Keywords: learning objectives, learning outcomes, national educational profile, the phase of the study, competencies, the aim of the course, education and examination regulations, senior lecturer</p>	<p><i>'We work with competences that are formulated into learning objectives. And based on those objectives, we look at: 'What are clear goals that we should formulate that we want the student to achieve?'</i> This has a central place in the design of our courses and the formulation of goals for a test'</p>
	<p>Ostensive: measuring</p>	<p>The abstract idea of measuring that is reflected by teachers' perception of rules and conditions laid down in the school's assessment policy and what they think of norms and agreements that have been made to design a test, organize test taking and analyze test results. Keywords: two pairs of eyes policy, validity and reliability, predefined forms of testing, testing aimed at professional</p>	<p><i>'We have the EER in which the assessment policy is operationalized to the level of our study program. The examination format is already described in this document, whereby you can and may make some further specifications on certain points'</i></p>

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context, responsibility of senior lecturer,  
examination board needs to give approval

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Ostensive: grading	The abstract idea of goalsetting that is reflected by teachers' perception of rules and conditions laid down in the school's assessment policy and what they think of norms and agreements that have been made regarding the allocation of test scores and the grading of test results.  Keywords: predefined assessment criteria, grading learning process assessment rubrics, four eyes principle, threshold to pass is fixed	<i>'We work with rubrics that describe in detail what students will be assessed on and what they have to do to get a passing remark'</i>
Ostensive: deciding	The abstract idea of goalsetting that is reflected by teachers' perception of rules and conditions laid down in the school's assessment policy and what they think of norms and agreements that have been made regarding the final decision about whether students passed or failed for a test and whether and how the evaluation of test results should be conducted.	<i>'The examination board is there to see whether the process went correctly, whether a policy of using two pairs of eyes was applied and with that, whether that decision is based on the judgment of two competent teachers. This is necessary to ensure that the decisions are reliable and valid'</i>

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Keywords: evaluation of criteria in assessment rubrics, the grade decides the assessment, four eyes principle validity and reliability of assessment, senior lecturer, Master's degree is required,

<p><b>Performative aspects</b></p> <p>How teachers actually performed actions within the routine in practice. The performative aspect describes the specific actions that are taken by teachers at specific places and times.</p>	<p>Performative: goalsetting</p> <p>The actual actions taken by teachers to formulate goals for testing.</p> <p>Keywords: I use the learning objectives to formulate the goals for a test, I create an examination plan, I look at how previous test goals were formulated, I implement a practical component in the test goals</p>	<p><i>'Based on the learning objectives, I create an examination plan and describe a test matrix in which I formulate those objectives into concrete test goals that shows the aim and the usefulness of the test'</i></p>
<p>Performative: measuring</p> <p>The actual actions taken by teachers to design a test, organize the test taking and analyze the test results,</p> <p>Keywords: I go back reasoning from the learning objectives to make the test, I ask a colleague to check the test first, I use the testing of last year, we created individual questions for each student</p>	<p><i>'Some teachers actually sit together, I send the exam as I design it via email and ask a colleague to look at it. That's how I apply the two pairs of eyes policy'</i></p>	
<p>Performative: grading</p> <p>The actual actions taken by teachers to scores the testing and assign grades to test results.</p>	<p><i>'Once the testing has been taken, I will score students on each part of the exam, give feedback</i></p>	

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Keywords: I determine the threshold to get a passing remark upfront, I do not use the assessment form that strictly, I allocate scores per test question, I use the assessment rubrics *where necessary, after which I determine the final grade with a simple calculation'*

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Performative: deciding The actual actions taken by teachers to decide whether students passed or failed for a test and whether and how test results are actually evaluated in practice. *'After I assigned the grades, I check the assessment criteria again and look at all the test questions to see whether there were formulated in the right way and if some of them need to be changed because they may be interpreted in the wrong way'*

Keywords: I only assess the final product, I decide whether students show progress in their learning, I report the test results to the examination board

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**Routine change behavior**      Repairing      Change behavior that is aimed at preventing problems by refining or replacing actions within the routine to produce outcomes that are similar to the ones that have been produced previously. *'Testing on a centralized location was not an option anymore. To still guarantee the individuality of students, we now do our surveillance online via the webcam while take the exam at home'*

Teachers response on routine outcomes that determine the way in which they (not) change the testing and assessment routine.

Keywords: it went wrong, I got into trouble, I couldn't achieve the intended test goals, I prevent new problems, the psychical presentations were replaced by an online assessment

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Expanding	<p>Change behavior that is aimed at improving the execution of the routine through an expansion of actions in order to take advantage of challenges that enable opportunities for improvement.</p> <p>Keywords: opportunities were created, I saw improvement, I added things, things went better</p>	<p><i>'I'm not that familiar with online tools and all the features out there so I try to find somebody who could help me with that in order to create a suitable test. There is also an ICT helpdesk, but it is mainly that we help each other as teachers in this regard'</i></p>
Striving	<p>Change behavior that is aimed at creating better outcomes because previous routine outcomes felt short of ideals, which is driven by a never-satisfied desire to realize outcomes that are more difficult (or even impossible) to achieve.</p> <p>Keywords: striving towards my ideals, I always try to improve, I always try to work more efficient, I have a drive to improve, I think it can always be better</p>	<p><i>'I regularly propose new things to improve education, also with new forms of testing. For example, I have already started digitally testing for a course and developed simulations together with a colleague. With all that kind of things, I try to improve education to better prepare students for that practice, all from an ideal image of myself, of how I think it could be improved'</i></p>
Fixed response	<p>Actions are not changed by producing a fixed response that does not change the routine at all.</p>	<p><i>'I continued to use the method of testing that I was using. I can image that other teachers needed to change a lot, but for me personally nothing changed'.</i></p>

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Keywords: I don't change, I'm fine with the current circumstances, I prefer to stick with current methods.

<p><b>Motivation to change</b></p> <p>The underlying beliefs that determine teachers' change behavior with regards to the testing and assessment routine</p>	<p>Attitude</p>	<p>The favored or abhorred attitude towards change behavior that is reflected by the expected consequences of engaging in change behavior</p> <p>Key words: I am positive/ negative about change, I (do not) see the usefulness of change, I see advantages/ disadvantages, engaging in change is my own decision,</p>	<p><i>'I kind of have a firm belief that it's never perfect for you, so I'm not some sort of perfectionist who's always just frustrated that it wouldn't be right. I am very satisfied with how it can be. I think there is always room for improvement'</i></p>
	<p>Subjective norm</p>	<p>The perceived social norm to engage in change behavior that is reflected by the extent to which people attach importance to change, which is created by their beliefs that important others in the organization care about whether they change their work.</p> <p>Keywords: I that change is important, others (do not) have influence, I (do not) feel pressure to change, justification to others is (not) important to me.</p>	<p><i>'I don't have to say to anyone: 'This is how my day looked like', absolutely not. However, I would like to show that I did well when I have to get things done'</i></p> <p><i>'I: Okay, so you don't think it's important that others show that they appreciate you doing the work in a different way?</i></p> <p><i>R: No that's not that important to me, not at all actually'</i></p>

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Self-efficacy	<p>The confidence one has in his or her abilities to implement changes in their work and reflect people's beliefs to be able to implement change.</p> <p>Keywords: I'm able to change, I'm doing very well, I find it easy/difficult, I think I can/cannot do it.</p>	<p><i>'I think I have handled a lot of changes easily. When I look at myself, I switched relatively easily to online teaching and testing'</i></p> <p><i>'I find it difficult to take the initiative myself. If I see that something needs to be changed, I will indicate this, but it is not that I am very concerned with this'</i></p>
Controllability	<p>The extent to which people believe to have control over their decision to engage in change behavior and relates to the resources and information people believe they possess to change.</p> <p>Keywords: I determine myself whether I implement changes, I (do not) have sufficient information, we (do not) have resources to change, the communication is good/bad, management decides</p>	<p><i>'If the examination board does not agree with a particular test format, then it will not happen. Then as a teacher you can jump low and high, but then nothing will change'</i></p> <p><i>'There are all kinds of unwritten rules or agreements, that's very difficult from time to time'</i></p>

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