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Doctoral defence formats

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ABSTRACT

The doctoral defence is the oral examination of the doctoral thesis. While it is a major milestone for doctoral candidates, this event is often shrouded in mystery. In this article, I explore the doctoral defence from an international perspective. I have studied the format of the defence based on written testimonies as well as the literature on this topic. From this analysis, I distinguish four main elements of the defence format: (1) timing of the defence with respect to thesis publication, (2) number of steps in the defence, (3) public or private defence, and (4) the timeline of the defence itself. I then use these building blocks of the doctoral defence format to discuss differences and similarities between the formats, and finally to categorize defence formats used internationally by analysing the format of 26 countries, 24 of which use an oral defence format. The result is a deeper understanding of the defence format, which is valuable for candidates, committee members, supervisors, and administrators, and which can also serve the current discussions within the European Union on a standard format for the doctoral defence. Ultimately, understanding the defence format removes the mystery surrounding the defence.

KEYWORDS

Assessment; doctoral candidate; doctoral education; doctoral student; PhD; viva

Introduction

The doctoral defence is the oral examination of the doctoral thesis. This event is an important step for doctoral candidates in obtaining their degree. It is important, as in some defence formats such as the UK-style *viva voce* or, shorter, viva, the performance during the defence forms part of the overall assessment of the thesis. It is also important (for all oral defence formats) because it is considered the pinnacle of the doctoral trajectory (Degtyareva and Lantsoght 2021); the moment when the apprentice researcher is put to the test by experienced researchers and, if successful, welcomed as a new member of this community (Phillips and Pugh 2010; Chen 2014).

At the same time, researchers have struggled to define the doctoral defence (Jackson and Tinkler 2001; Mežek and Swales 2016; Mushibwe, Musonda, and Kazonga 2021; Share 2016; Sikes 2017). Some described the defence as elusive and mysterious (Qasim et al. 2020), whereas others acknowledged the various layers of the defence by identifying it as a social construct (Chen 2014). Certainly, the defence is more than a regular form of summative assessment as it is more than only an examination.

The defence can also serve as a rite of passage, a confirmation, a celebration, an initiation, a test of academic capital, a welcoming into the 'club' of those who hold doctorates (Wisker et al. 2022), and a moment to display doctorateness (Poole 2015a; Trafford 2003; Trafford and Leshem 2009; Wellington

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2013). In addition, the defence is different in form and character from other academic ceremonies used for awarding prizes, honours, and degrees (Mežek and Swales 2016).

The term 'defence' invokes associations of candidates having to defend themselves against the committee members, and some academics, therefore, prefer the term 'viva'. In this research, I use the term 'defence', as it is used internationally, but without wanting to imply the gladiatorial connotations.

Within the European Union (EU), there is a push towards developing a single standard format for the doctoral defence (Goulding and Geraghty 2011). One original obstacle in developing this format is the large difference between the viva in the United Kingdom (UK) and the continental public defence. After the Brexit, these discussions are resumed. Since this article presents the building blocks of the doctoral defence format, policy makers can evaluate the building blocks separately and construct a new pan-European defence format.

This work aims at categorizing the building blocks of the doctoral defence, so that a better understanding of the procedures and expectations follow. As such, the present work goes a step further than the comparison of four defence formats presented in (Kyvik 2014), which evaluated if elements from the various national practices could be used to develop a standard method for the assessment of the doctorate.

Literature review on the doctoral defence format

The modern form of the doctoral defence dates back to Germany in the nineteenth century. Prior to the educational reforms of the nineteenth century, the defence was called the 'disputation'; a requirement to become a teacher at a university. The focus was on dialectical skills, as teaching through questioning was common. Generation of new insights was not a requirement, as the Bible was considered the source of all knowledge. The nineteenth century educational reforms moved away from the authority of the Church and the Bible, and placed an emphasis on research contributions (Crossouard 2011). In the second half of the twentieth century, the doctorate changed from an original life work (until the late 1970s) to showing one has the skills for carrying out research independently (Sikes 2017).

Previous research on the doctoral defence has focused on the experiences of doctoral candidates (Crossouard 2011; Wellington 2010; Davis and Engward 2018; Share 2016), the (perceived) purposes of the defence (Jackson and Tinkler 2001; Mežek and Swales 2016), and the institutional requirements (Tinkler and Jackson 2000). These studies have all focused on a single defence format as used in a single country.

Research on the experiences of doctoral candidates has shown that many candidates enjoy their doctoral defence and the formative aspect of it (Davis and Engward 2018), but that there is also a risk for committee members to dominate the proceedings (Morley, Leonard, and David 2002) as the power balance during the defence is delicate. Those from minority backgrounds and in particularly female candidates (Lantsoght 2021b) tend to have more negative defence experiences, and those from a working-class background (Trafford and Leshem 2002) find the social aspects of the defence more difficult to navigate. A negative defence experience can impact the rest of the candidate's career (Sikes 2017).

Doctoral candidates and committee members interpret the purpose of the defence differently (Jackson and Tinkler 2001). Many doctoral candidates get their information about the defence from friends who already passed (Share 2016; Wellington 2010). Not all examiners are aware of the expectation to provide both a summative and formative assessment of the thesis (Kumar and Stracke 2018). During the defence both the thesis and the candidate are evaluated (Watts 2012), and the candidate is evaluated not only on their research contribution, ability to defend, and knowledge of the field, but also on their personal skills, and ability to 'read the room' in the context of the defence (Clarke 2013; Clarke and Lunt 2014).

The institutional requirements of 20 UK universities (Tinkler and Jackson 2000) tend to agree on the main aspects of the defence. Some important aspects, however, such as whether a candidate can fail the doctorate upon an unsatisfactory defence, vary between institutions (Jackson and Tinkler 2001; Tinkler and Jackson 2000; Morgan 2013) and often the relative weight of the defence with regard to the written thesis is ill-defined (Morley, Leonard, and David 2002; Morley, Leonard, and David 2003).

Where research focused on the defence format, the objective was to analyse the entire format. For example, the Norwegian defence (Kyvik 2014) was evaluated by committee members from the UK, USA, and Sweden, and one of the main findings was that committee members tend to prefer their national defence format. Other authors have attempted at better defining the 'questions and answering' part of the defence, either by analysing the type of questions (Trafford 2003; Trafford and Leshem 2002) or by developing lists of typical questions (Cortazzi and Jin 2021; Trafford 2003; Wellington 2010). Only one reference (Cortazzi and Jin 2021) acknowledges that differences in defence formats lead to differences in the questions; all other references relate to the UK viva.

Elements of the doctoral defence format

Timing of defence with respect to thesis publication

There are two options for the timing of the defence regarding thesis publication: (1) acceptance and publication of the thesis before the defence, or (2) after the defence. When the thesis is accepted before the defence, the defence itself is a formality and a final step before the doctorate is bestowed upon the candidate. When the thesis is evaluated at the defence, the candidate's performance at the defence is a factor in the overall evaluation of the thesis and the extent of revisions required. While failing in both situations is rare, universities with defence prior to publication may have an option to fail a candidate based on a poor defence. Jackson and Tinkler (2001) found that 12 of the 20 evaluated institutions included the option to fail the candidate based on their viva.

The timeline of the publication of the thesis also determines how much time finishing the doctorate after the defence takes. In the Netherlands, the doctoral degree is conferred at the end of the defence (Lantsoght 2011b). In Sweden, there is a fixed time and date for the graduation ceremony, but no further steps are required from the candidate after the defence (Anonymous 2016). In the UK, the extent of required revisions determines how much time the candidate receives to implement these, which can be up to six months for major revisions (Imtiaz 2016).

Number of steps in the defence

Most institutions have one single defence, but in some cases various steps are involved. The two-step defence (as used in Belgium (Debecker 2016; Masuzzo 2017) and Chile (Muqoz Llancao 2016)) consists of a defence behind closed doors with the committee members first, and then a public defence in front of friends and family after thesis publication. The candidate receives in-depth feedback from the committee members during the private defence. The private defence functions as an examination, whereas the public defence serves as a ceremony, reflected by the committee members dressing in caps and gowns. Another type of two-step defence that is more common in the United States (Lantsoght 2011a) has a public presentation (with questions), examination by the committee behind closed doors, and then announcement of the outcome to the public.

Besides these two-step defences, there is also a trend to formalize the PhD trajectory. Different milestones become formative assessments that prepare the candidate for the summative assessment of the defence. In Chile (Muqoz Llancao 2016), candidates need to pass two evaluations with the committee before the two-step defence. In the United States, candidates have to defend their proposal at the midpoint of the doctoral trajectory (Georgia Tech George W. Woodruff

School of Mechanical Engineering 2022). In the Netherlands, candidates present their research plan in their 'Go/No Go' meeting, where an internal committee evaluates if the candidate is on track to finish the research in the next three years (TU Delft 2014).

Public or private defence

Doctoral defences are typically classified as public or private. In the strictest sense, a private defence only involves the examiners and the candidate. In the broadest sense, a public defence includes the participation of all members of the public. At some institutions, defences are officially public, but not advertised, so that in practice they become private (Mallinson 2016).

The private defence from the UK originally included two examiners and the candidate. Over time, it has become more common for the supervisor to be present during the defence, as well as a Chair, whose role it is to welcome the examiners and candidate, explain the proceedings, and ensure that the protocol is adhered to.

There are various versions of the public defence as well. At some universities, any person in the public (Masuzzo 2017) or any person with a doctorate (Shields 2018) can ask questions. In other formats, only the committee members are allowed to ask questions (Lantsoght 2011b). In Finland (Mikhailova 2016), the candidate asks the audience if there are questions, but questions from the audience are never expected.

The public defence is considered a good opportunity to show the dialectical skills of the candidate, and tends to be more memorable for the candidate. At the same time, the opportunity to thoroughly examine the candidate is lost, and critics have called the public defence a theatre (Kyvik 2014).

Timeline of defence proceedings

At some universities, the defence proceedings follow a strict timeline, whereas elsewhere the committee can continue to question the candidate until they are satisfied. Again, there are gradations of how fixed the proceedings are. One extreme is the format from the Netherlands, where all steps are part of the protocol. The amount of time each committee member receives is not fixed, but it is expected that the first, external, committee members will take more time than the last, internal, committee members.

With a fixed time schedule, the doctoral candidate knows exactly what the defence will look like, except for the contents of the questions themselves. Without a fixed time schedule, the candidate may not know if the defence will last one or six hours. However, extremely long defences are not common. Only 5% of respondents (Lantsoght 2021a; Lantsoght 2021b) had a defence that lasted more than three hours. The most extreme case (Remenyi et al. 2003) is of a viva that took two days.

Written 'defence' format

In some countries, there is no oral defence. The thesis is reviewed by (anonymous) examiners as a very long journal article. Possible outcomes of this evaluation are: (1) to accept the thesis as is, (2) to accept the thesis with revisions to the satisfaction of the university (similar to minor revisions; in this case the examiners do not rereview the revised version but the university checks if adequate revisions have been made), (3) to request revision and resubmission of the thesis (similar to major revisions; in this case the revised version has to be reviewed again by the examiners), and (4) to fail the thesis (similar to rejection of a journal article). Various rounds of revisions and comments of the examiners are possible.

Historically, written 'defences' are common in countries that are geographically isolated, such as South Africa (Remenyi et al. 2003) and Australia (Golding, Sharmini, and Lazarovitch 2014; Coupland 2018; Johnston 1997; Kiley 2009; Holbrook et al. 2014; Mullins and Kiley 2002), with some Australian

institutions adopting a defence or a public seminar in recent years (Lovat et al. 2021). International experts are invited to review the thesis, but they do not need to travel to the home institution of the candidate. The shift to online meetings due to COVID-19 may lead to these countries adopting videoconferencing tools for an oral defence (Wisker et al. 2022).

Differences and similarities between defence formats

The most obvious difference between the defence formats lies in the building blocks of the defence, and their relation to the function of the defence. A defence before thesis publication serves as an examination. The candidate is expected to clearly frame the research question, methods, and link to the field. A defence after thesis publication serves more as a ceremony and celebration.

Secondly, the committee will want to confirm authorship of the thesis. This confirmation either comes in discussions with the committee during the PhD trajectory, or, if the committee members have no interaction with the candidate until the defence, at the defence itself. The timing of this confirmation is thus a function of the defence format.

Finally, the timeline of the defence proceedings influences the behaviour of the committee. If the committee members only have a limited amount of time, and perhaps can only ask one question, they focus on broader questions. Reversely, if there are no limits on the time, committee members can focus both on smaller details of the research as well as the broader aspects.

One overarching similarity between the defence formats is that the defence is the final test of the PhD trajectory (Watts 2012). The written thesis has more weight than the oral defence (Golding, Sharmini, and Lazarovitch 2014). All defences aim at testing the ability of the candidate to be 'articulate under stress' (Morley, Leonard, and David 2003, 65). When the defence is public, there is the pressure to perform well in front of colleagues and friends and family (Izadi 2017). When the defence is private and prior to thesis publication, there is pressure to perform well, as the viva will determine the requested level of revisions (Jackson and Tinkler 2001).

All defence formats include time for questions, and a discussion of the core of the research (Watts 2012). These discussions aim at verifying if the candidate can locate the research within the field and explain the broader implications of the work. Another common aspect is the power of the committee (Tinkler and Jackson 2000; Sikes 2017; Morley, Leonard, and David 2002; Morley, Leonard, and David 2003; Remenyi et al. 2003). The committee determines the questions and the direction of the discussions. If the thesis is published before the defence, the committee determines when the candidate can defend. For defences prior to thesis publication, the committee determines the level of required revisions.

International classification of defence formats

Table 1 gives an overview of the defence format in 24 countries, based on testimonies from PhD candidates, the literature, and doctoral regulations. Table 1 shows that almost every combination of building blocks is possible. Countries that use a written defence are not included. In the following paragraphs, typical defence formats with similar building blocks are discussed.

The first type is the *viva* (*viva voce,* living voice), from the UK and Ireland. The viva (Imtiaz 2016; Atkinson 2016; Edwards 2017; Trueman 2018; Bodewits 2018; Lantsoght 2019; Dyer Saxon 2016; Remenyi et al. 2003) takes place behind closed doors. Originally, the candidate and the two examiners were alone during the viva, but nowadays a Chair and/or the candidate's supervisor can be present. One examiner is internal to the university and one is external. Since the viva is behind closed doors, candidates sometimes do not know what to expect, and examiners have a strong power over the course of the viva (Remenyi 2019). Having an independent Chair, making the examiners' reports available before the viva, and recording vivas have resulted in more consistent and fairer vivas (Clarke 2013; Park 2003). The only difference with the format used in New Zealand (Bright 2016; Murugayah 2019) is that there, three examiners, the convenor (Chair), and supervisor,

Table 1. Classification of defence formats used internationally.

Country	Name	B/A	Pu/Pr	1/2	F/C	Observations
United Kingdom	Viva	B	Pr	1	C	Variations of committee: only internal and external examiner, or with a Chair, and/or with the supervisor present. Formal graduation ceremony several months after viva.
Ireland	Viva	B	Pr	1	C	Similar to UK
France	Defence	A	Pu*	1	C	Pu*: open to colleagues (lab members), but not to friends and family. Defence centred around presentation. Committee of internal and external members.
Germany	Defence	B	Pu	1	F	Notable variations among universities. Examiners evaluate the thesis and submit their report the day before the defence, but do not form part of the committee. During the defence, committee members and audience ask questions.
the Netherlands	Defence	A	Pu	1	F	Defence of the thesis and propositions. Large committee (up to 8 members, including rector or replacement). Strict protocol: use of caps and gowns, beadle leads ceremony. 20-minute presentation to audience before start of defence (without committee). *Laudatio* (congratulatory speech) and diploma conferral at end of defence.
Belgium	Defence	B/A	Pr/Pu	2	C	First, a private defence similar to the UK viva, then a celebratory public defence. Bestowal of doctoral hat and congratulatory speech by promotor at end of public defence.
Portugal	Defence	A	Pu	1	C	No formal dress code, defences tend to be long as committee members continue questioning until they are satisfied.
Spain	Defence	A	Pu	1	C	Requirements to defend are part of the Spanish law (de-De-Miguel 2010). Two external examiners evaluate the thesis before the defence and submit a written report.
Sweden	Defence	A	Pu	1	C	The committee of three professors evaluates and approves the thesis for defence. The opponent (not member of committee) examines the candidate during the defence, whereas the committee watches and evaluates. Candidates receive ring and hat (sciences) or laurel wreath (humanities). Commencement ceremony takes place in May in Latin in a cathedral.
Finland	Disputas	A	Pu	1	F	Two external reviewers evaluate thesis before the disputas. Interaction between disputant (PhD candidate) and opponent. Disputant presents work, opponent then gives short speech about work, then discussion between disputant and opponent. Strict protocol in terms of dress code and predefined sentences. Candidates receive doctoral hat and sword during commencement ceremony in May.
Norway	Defence	A	Pu	1	F	Includes trial lecture by candidate on a topic not related to the research. Defence with committee of three members, who write joint evaluation report before defence. Examination by two committee members. Thesis is published before the defence, but resubmission with minor corrections may be required.

(*Continued*)

Table 1. Continued.

Country	Name	B/A	Pu/Pr	1/2	F/C	Observations
Bulgaria	Defence	A	Pu	1	F	Limited information available. Committee of five members who all evaluate the thesis prior to the defence, with two committee members examining the candidate during the defence.
Ukraine	Defence	A	Pu	1	F	Similar to format used in Finland and Sweden with opponent.
Russia	Viva	A	Pr/Pu	2	C/F	The private defence is committee-driven and the public defence has a fixed time. The public viva is preceded by thesis evaluation by the dissertational defence board. This board appoints the defence committee. The committee writes a report about the thesis, after which the board appoints opponents and Chair. The opponents write a full review of the thesis and submit this report two weeks before the defence. The scientist secretary formally confirms all paperwork is in order. During the defence, the candidate reacts to the report of the defence board as well as to the report of the opponents, and the candidate answers questions by all members of the committee.
Georgia	Scientific debate	A	Pu	1	C	Limited information available. Committee includes external members.
United States	Defence	B	Pu/Pr	1/2	C	Many variations possible. Committee members are usually from the candidate's university and involved with the research from the beginning of the doctoral trajectory. Same committee evaluates the proposal. Degree is awarded during commencement ceremony at the end of the semester.
Canada	Viva	B	Pu/Pr	1	C/F	Length of defence depends on university. Committees tend to be large, with internal and exteral members, the supervisor, and the Chair. Influenced by defence in USA and viva in UK.
Chile	Defence	A	Pu/Pr	2	C	Two-step defence. Prior to the defence, the candidate has to pass several evaluations, which are called 'mini-defences'. Candidate receives doctoral medal at commencement.
New Zealand	Viva	B	Pr	1	C	Very similar to the UK, but with three examiners.
Japan	Viva	B	Pu	1	C	Public defence with committee of two examiners and supervisors. Committee members give summary of impression of work after the Q&A. The commencement ceremony is traditionally in March.
Malaysia	Viva	B	Pr	1	C	Candidate gives 20-minute presentation at beginning. Similar to UK.
Iran	Viva	B	Pu	1	C	Similar to USA.
Pakistan	Viva	B	Pu	1	C	Similar to USA
Egypt	Defence	A	Pu	1	C	Formal dress code. Committee members sign documentation right after the defence.

B/A: Defending before or after publication of thesis; Pu/Pr: Public or private defence; 1/2: number of steps in defence; F/C: fixed timeline on the day of the defence or committee determines timeline. Extended and modified from Degtyareva and Lantsoght (2021).

form the committee. The viva in Malaysia (Tan 2018) is similar, but the difference is that the candidate gives a 20-minute presentation about the research at the beginning.

The second type is the very formal defence common in parts of continental Europe. In the Netherlands (Muqoz Llancao 2016; Lantsoght 2011b; TU Delft 2014; Hut 2016), the beadle ensures that the strict protocol is followed. Even though the defence proceedings are often in English, formal Dutch phrases to address the members of committee and the candidate have to be used. Norway uses a similar format, which includes a trial lecture on a topic not related to the thesis to evaluate the lecturing skills of the candidate (Kyvik 2014). Sweden (Anonymous 2016), Finland (Mikhailova 2016), and Ukraine (Chekina 2017) use formal defences, centred around the discussion between the doctoral candidate and the *opponent*, who is not a member of the committee. The opponent presents a summary of the thesis and examines the candidate (Kyvik 2014). The committee watches the interaction between the opponent and the doctoral candidate and makes the pass/fail decision. In Bulgaria (Petkova 2011), two members of a committee of five professors examine the candidate.

Another main type of defence is centred around the presentation of the candidate. This type is common in France (Veronique 2017), Portugal (Abambres 2019; Vreede 2016), Spain (Fariñas 2017), Georgia (Pitskhelauri, Chikhladze, and Tsiskaridze 2011), Japan (Koso 2016), and Egypt (Hassan 2018). The discussion with the committee follows after the presentation. These defence formats are less formal, and do not use strict protocol and dress code, with the exception of the Egyptian format, which prescribes a strict dress code.

Two-step defences, with a UK-style private viva and then a public celebratory defence are used in Belgium (Masuzzo 2017; Debecker 2016), Chile (Muqoz Llancao 2016), and Russia (Voronina 2017). The Russian requirements are further detailed in Table 1.

Germany (Okonechnikov 2017), the United States of America (Newton 2016; Ames 2016; Bartos 2017; Shimabukuro 2018; Corcoran 2018; Lee 2018; Regal 2016; Killen 2017; Lantsoght 2011a; Abboud 2018; Mallinson 2016), and Canada (Gill 2017; Jacobs 2018) tend to have considerable variability between universities. The defence formats in the USA and Canada do not follow a strict protocol. The committee members are often internal to the university and involved in the research. The defence can be private or public, or have two steps. Some universities have time limits, whereas in other places, the defence continues until the committee members are satisfied. In Iran (Mežek and Swales 2016; Izadi 2017) and Pakistan (Haque 2011), the defence resembles the USA format. The defence in Canada can include a public seminar, followed by questions behind closed doors with the committee. At other universities, the Q&A part is public.

Discussion

The doctoral defence is the oral examination of the doctoral thesis. At first glance, it may seem that the defence is different in every country. One may thus conclude that finding common ground and a uniform defence format for Europe may be verydifficult. However, through the analysis of the various defence formats in this work, I was able to identify the similarities and differences between the formats. I was able to identify the building blocks of the defence format, which may support the discussion on a uniform format within the EU.

One of the objectives of this study is to provide the building blocks of the doctoral defence, for use in the discussions on European standardization. As (Kyvik 2014) pointed out, committee members tend to prefer their national defence format. Changing national practices may be a challenge, and a better solution may be to set guidelines for member countries to clarify the purpose of the defence, to ensure fairness, and to stipulate how to solve conflicts when the doctoral candidate receives an unexpected evaluation.

Previous research indicates that candidates enjoy their doctoral defence and the formative aspect of it (Davis and Engward 2018; Lantsoght 2021a). For universities, however, defences are labour-intensive and costly events, especially when international experts need to be flown in. The COVID-19 pandemic saw a shift towards virtual and hybrid defence formats (Lantsoght 2021a).

The discussions on the possible European format for the defence should also include an evaluation of the cost and sustainability aspects of the defence, and should find an equilibrium between tradition and considerations for the future.

Another aspect that should be addressed, is the term for the oral examination of the doctoral thesis. While the term 'defence' is commonly used, the combative connotations of this term may influence the perception of the candidates about the defence. As such, a better term could be sought.

Moreover (Clarke 2013), standardization may not be a possible objective for the doctoral defence. The defence is very individualized, and even within the same defence format, two defences cannot be directly compared in a way one can compare the exams of two students. In addition, there are socio-cultural aspects at play during the defence which are difficult to capture in a grading rubric (Trafford and Leshem 2002; Trafford 2003; Poole 2015b).

Understanding the identified building blocks is crucial in comprehending the doctoral defence. The available literature on the doctoral defence should be placed in the light of the defence format. Another unique point of this work is the analysis of a large variety of defence formats, representing all inhabited continents.

The defence is not an event that stands alone. Every presentation prior to the defence and every deep discussion on the research is a preparation and can be considered a formative assessment that prepares the candidate for the defence. The defence is not a purely summative assessment, and depending on the interaction between candidate and committee members, there may be aspects of a formative assessment as well.

Doctoral candidates should understand their defence format, so that they can adequately prepare (Lantsoght 2022). Supervisors who may have studied in a country with a different format, need to understand the format their doctoral students will be experiencing, so that they can advise them properly. Committee members need to understand the defence format, so that they can prepare their questions in line with the format. University administrators need to understand the various building blocks of the defence format, evaluate the format they use at their institution periodically, and consider improvements.

Summary and conclusions

Previous research on the doctoral defence has focused on a single defence format, or a comparison between a limited number of formats. The presented work evaluates the defence format used in 26 countries, 24 of which use an oral defence, and derives the building blocks of the defence. By understanding these building blocks, we gain a deeper insight in the architecture of the defence. The four main building blocks of the doctoral defence are:

- publication of the thesis before or after the defence,
- number of steps in the defence,
- public defence or behind closed doors, and
- fixed time schedule for the defence or examination until satisfaction of the committee.

These building blocks explain the main differences observed between the defence formats. At the same time, all defences aim at evaluating the thesis and the candidate, require the candidate to answer questions, test dialectical skills, and form the final test of the PhD. The insights of this research serve doctoral candidates, committee members (examiners), supervisors, university administrators, and policy makers.

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