



Vlaams Indicatorenboek 2021

WETENSCHAP – TECHNOLOGIE – INNOVATIE



Overzicht van de gemaakte selectie

Het Vlaams Indicatorenboek bevat een portfolio aan beleidsindicatoren die de ontwikkeling van het Vlaams potentieel inzake wetenschap, technologie en innovatie in kaart brengen.

Sinds 1999 wordt het boek om de twee jaar uitgegeven en vanaf 2017 wordt het Indicatorenboek een virtueel boek met een eigen website: <http://vlaamsindicatorenboek.be>. Het boek dat u nu in handen hebt is een selectie van hoofdstukken uit dit boek. Voor de volledige versie verwijzen we u graag naar de website.

Onderstaande delen werden geselecteerd:

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De website van het Indicatorenboek biedt u ook de mogelijkheid om een eigen selectie samen te stellen van hoofdstukken die voor u relevant zijn. Surf hiervoor naar: <http://vlaamsindicatorenboek.be/selectie>.

Wij wensen u alvast een informatieve zoektocht door het Vlaamse innovatielandschap!

Dankwoord

Wetenschap, technologie en innovatie zijn onmiskenbaar essentiële hefboomen tot welvaart en welzijn in onze maatschappij. De Vlaamse overheid heeft daarom veelzijdig en veelzijdig aandacht besteed aan de ontwikkeling van de kwaliteit en de slagkracht van het Vlaamse Wetenschaps-, Technologie- en Innovatiesysteem. Het brede spectrum van wetenschappelijk en technologisch onderzoek aan de Vlaamse kennisinstellingen is daarbij vervolledigd met maatregelen en instrumenten om het innovatievermogen van de in Vlaanderen opererende ondernemingen te verhogen, en daarbij ook de kleine en middelgrote ondernemingen steeds meer, gerichte innovatiekansen te bieden.

Het is dan ook nuttig en wenselijk om het geheel aan acties, en hun meetbare resultaten, in een coherent, regelmatig te verschijnen Indicatorenboek te bundelen. Het vernieuwde Vlaams Indicatorenboek Wetenschap, Technologie en Innovatie, dat de tijdsreeksen uit de vorige Indicatorenboeken actualiseert en uitbreidt, draagt daartoe bij. Zo is het mogelijk een robuust en internationaal vergelijkbaar overzicht te geven van de situatie in Vlaanderen op het vlak van de bestedingen voor en de resultaten van onderzoek, ontwikkeling en innovatie.

Het Indicatorenboek 2021 wordt net als de vorige editie uitsluitend in een interactieve bevragingmode elektronisch aangeboden.

Uiteraard bouwt dergelijk Indicatorenboek op de inspanningen van veel enthousiaste medewerkers. De redactie en het schrijven van dit boek kwamen dan ook tot stand onder impuls van een redactiegroep van experts behorend tot de verschillende beleidsactoren uit het Vlaams Innovatiesysteem, die de staf van het Expertisecentrum O&O-monitoring (ECOOM) van de Vlaamse overheid bijstonden in de opdracht dit Indicatorenboek te ontwikkelen. Elk van hen droeg bij tot de conceptie van dit werk. We willen hen dan ook van harte danken voor de constructieve samenwerking om onder de gebruikelijke tijdsdruk dit document af te werken:

De Heer Paul De Hondt van het Kabinet van de Vlaamse Minister voor Economie, Wetenschap en Innovatie en tevens voorzitter van het Beheersorgaan van het Expertisecentrum O&O-Monitoring,

Mevrouw Linda De Kock van de Administratie Hoger Onderwijs,

De Heer Peter Viaene en Mevrouw Monica Van Langehove van het Departement Economie, Wetenschap en Innovatie (EWI),

De Heren Eric Sleenckx en Maarten Sileghem van het Vlaams Agentschap Innoveren en Ondernemen (VLAIO),

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Mevrouw Daniëlle Raspoet en Mevrouw Kristien Vercoetere en Mevrouw Annelies Wastyn van de Vlaamse Raad voor Innoveren en Ondernemen (VARIO),

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die samen de nodige expert-inzichten en inbreng geleverd hebben bij het tot stand komen van de Vlaamse O&O gegevens.

Daarnaast danken we tevens van harte alle auteurs die op basis van de inbreng van de redactiegroep, de verschillende hoofdstukken en dossiers hebben uitgewerkt, geschreven en gedocumenteerd met relevant en betrouwbaar cijfermateriaal.

Zonder hun gezamenlijke inspanning was dit tiende Vlaams Indicatorenboek WTI nooit tot stand kunnen komen!

Van harte dank!

Prof. Koenraad Debackere en Prof. Reinhilde Veugeliers
Redacteurs Vlaams Indicatorenboek Wetenschap, Technologie en Innovatie
Leuven, september 2021

Woord van de ministers

Na een moeilijke periode die getekend werd door de coronacrisis toont Vlaanderen veel veerkracht.

De pandemie heeft ons dynamische wetenschapslandschap niet kunnen temmen. Anders dan aanvankelijk werd gevreesd, is de innovatie in het bedrijfsleven niet teruggeduikt, en ook de kmo's worden steeds meer betrokken bij de noodzakelijke innovatie. De samenwerking tussen bedrijfsleven en kennisinstellingen, onder meer via de speerpuntclusters, verloopt nog steeds uitstekend en ook het fundamenteel onderzoek ondersteund door het FWO bleef productief.

De relance na de coronacrisis kan steunen op een heel stevige basis. Voor het eerst heeft Vlaanderen de norm van 3% van het bbp aan onderzoek en ontwikkeling doorbroken. In 2019 hebben alle bedrijven, overheden en kennisinstellingen in Vlaanderen samen 3,35% van het bbp geïnvesteerd in onderzoek en ontwikkeling, zo bleek uit de 3% nota 2021 van ECOOM. Dat is een belangrijke mijlpaal. Uit andere internationale rapporten komende nog positieve elementen naar voor. Zowel België als land, als Vlaanderen als regio, komen voor het eerst in de kopgroep van 'innovatieleiders' in Europa op een respectievelijke 4de (European Innovation Scoreboard) en 27e plaats (Regional Innovation Scoreboard).

Zoals blijkt uit de tiende editie van het indicatorenboek zet Vlaanderen met succes in op de ontwikkeling van haar talentbasis via hoger onderwijs en toenemende mobiliteit van studenten en onderzoekers binnen Vlaanderen maar ook internationaal, op de sterke aanwezigheid in Europese onderzoeks- en innovatieprogramma's, en op de ontwikkeling van significante posities inzake intellectuele eigendom zowel bij het bedrijfsleven als bij de kennisinstellingen. Ook de institutionele versterking van het innovatieweefsel met een portfolio van complementaire kennisinstellingen trekt investeringen in het Vlaamse WTI-weefsel aan.

Ook de toekomst ziet er goed uit. De Vlaamse Regering maakte 4,3 miljard vrij voor haar relanceplan, het plan dat de Vlaamse welvaart en het welzijn van de Vlamingen moet helpen versterken na corona.

In ons onderwijs wordt steeds meer de nadruk gelegd op STEM-richtingen. We zetten met de Digisprong ook een ambitieuze digitaliseringsoperatie van het hele onderwijs op de rails. Specifiek voor het hoger onderwijs is er in de nasleep van de coronacrisis een Voorsprongfonds van 60 miljoen euro gelanceerd, dat onze hogescholen en universiteiten nog toekomstgerichter en digitaler zal maken.

Het beleidsdomein EWI kan vanuit het Relanceplan Vlaamse Veerkracht 631 miljoen euro investeren. Hiervan wordt 87% uitgetrokken voor onderzoek en innovatie (waterstofonderzoek, bio-economie, digitalisering en duurzaamheid, O&O bedrijven, O&O onderzoeksinfrastructuur, ...) en 13% voor productieve, economische investeringen.

De komende jaren zal innovatie nog belangrijker worden, zeker in het kader van de uitdagingen rond duurzaamheid en zorg. We plannen deze legislatuur 250 miljoen euro voor onderzoek & ontwikkeling en daarbovenop nog eens 195 miljoen euro extra voor onderzoeksinfrastructuur.

Door innovatie als prioriteit van het beleid te blijven zien, willen we ook de komende jaren boven die 3% blijven en de plaats van Vlaanderen in de groep van innovatieleiders verder versterken. Kortom we willen Vlaanderen op het vlak van technologie, wetenschap en innovatie in de Europese cockpit plaatsen.

Het blijft essentieel voor het beleid om alles internationaal nauwgezet op te volgen en hierin speelt het Vlaams Indicatorenboek Wetenschap, Technologie en Innovatie (de tiende editie ondertussen!) een belangrijke rol. Dit geldt zowel op het vlak van de bestedingen voor O&O en innovatie als voor de resultaten van het onderzoek uit het hoger onderwijs, onderzoek, ontwikkeling en innovatie.

Het Vlaams Indicatorenboek is dan ook uitgegroeid tot een belangrijk evaluatie-instrument voor het beleid.

Wij willen in naam van de Vlaamse regering ECOOM en iedereen die eraan meewerkte dan ook uitdrukkelijk bedanken.

Hilde Crevits

Viceminister-president van de Vlaamse Regering en Vlaams minister van Economie, Innovatie, Werk, Sociale economie en

Ben Weyts

Viceminister-president bevoegd voor Onderwijs, Sport, Dierenwelzijn en Vlaamse Rand

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7 Dossiers

In addition to the recurrent chapters, each edition of the Flemish Indicator Book also offers a number of specific dossiers that provide a summary of relevant figures and recent research into relevant themes. In this edition there are six different files that deal with very different topics.

7.6 Artistic research and the PhD in the arts

By Florian Vanlee (Vrije Universiteit Brussel).

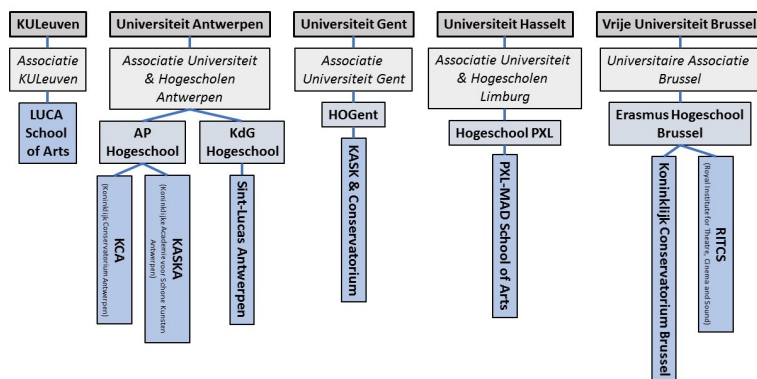
Due to the implementation of reforms required by the 1999 Bologna Declaration on the harmonization of the European Higher Education Area – colloquially dubbed the *Bologna Process*, research practices have in past decades become increasingly central to European tertiary arts education. This is exemplified by the introduction of BA and MA programs, for which the demonstration of research competences in some form is a prominent demand, but the most visible outcome of the entry of inquiry to the repertoire of higher arts education is certainly the PhD in the arts. Granting doctoral titles based on artistic research officiated its entry to the scholarly sector, kickstarting often heated discussions about the arts' epistemic claims to knowledge production and the methodological arguments for endorsing them.

Even though artistic research has now maintained a formal presence in the European research landscape for over twenty years, factual descriptions of its practices and outcomes remain scarce – obscuring its trajectory and development. Outlining the institutional context of formal artistic research in Flanders and discussing insights derived from an exhaustive database listing all defended Flemish doctorates in the arts since 2006, the present dossier addresses this lack by mapping the domestic landscape and the conditions artistic research takes place in.

7.6.1 Research between academy and academia

The Bologna Process formally introduced artistic research to many European higher education systems, but its implementation was subject to variation. Flanders did not opt for a full integration of higher art education into the university, nor did it effectuate the creation of a separate space wherein artistic research would develop as an autonomous circuit. Instead, the organization of artistic research involves collaboration between *Schools of Arts* – the former academies of higher arts education now constituting semi-autonomous departments of university colleges¹ (cf. the *Hogescholen*) – and the universities they are associated with (see Figure 1). Their special position in the *academiseringsproces* [Academization Process] – which took place between 2010 and 2013 and distinguished ‘professional’ (cf. practice-oriented) from ‘academic’ (cf. research-oriented) programs – is highlighted by their status as the only institutions other than universities to offer master’s degrees. Today, these institutions function as the primary sanctioned space for research in the arts. But due to the integration of design sciences and architecture into university faculties on the one hand, and the existence of specialist postgraduate institutions devoted to particular artistic disciplines (cf. *Orpheus Institute* for Music; *P.A.R.T.S.*² for (contemporary) dance and *HISK*³ for the visual arts), artistic research does take places outside of the *Schools of Arts* too.

Figure 1: Flemish Schools of Arts, universities and associations



Even though *Schools of Arts* now award MA degrees, granting doctoral titles remains a university monopoly. PhD researchers in the arts enrol in a *Schools of Art* and collaborate with staff members who act as artistic supervisors, but are also join the associated university – which provides academic supervision for the doctoral trajectory. With artistic and academic input structurally embedded in artistic researchers’ formal training, research in the arts happens on a threshold between the academy and academia, and is evaluated by artistic and academic assessors. Unsurprisingly, this situation can and sometimes does lead to friction, mostly about expected realizations of PhD trajectories and their final outcome – which differs across associations. All Flemish universities formally require a dissertation to be submitted in fulfilment of the doctoral program, but its status is subject to variation. Some allow doctoral candidates in the arts to submit artistic realisations as the primary outcome of their PhD research (e.g. exhibitions; operas; screenplays) and give less priority to written theses, requiring academic assessors to adopt alternative conceptions of excellence. Others require written dissertations as a discursive supplement to artistic outcomes, demanding artistic researchers to balance their art-based inquisitive practices with traditional scholarly reporting.

Artistic research happens outside of PhD trajectories too (e.g. postdoctoral fellowships), but doctoral projects do form the bulk of formal arts-based inquiry in Flanders. This prominence of doctoral work reflects artistic research’s relatively recent introduction to the university sector, but also *Schools of Arts*’ pragmatism: funding PhD projects allows balancing research ambitions with financial limitations. In comparison, post-doctoral and professorial research demands more resources from already strained budgets – a consideration exasperated further by the inclusion of doctoral titles delivered as a parameter in the allocation of research funding for the *Schools of Arts*.

¹ This is not the case with LUCA School of Arts, which constitutes a standalone university college in the '*Associatie KULeuven*' (see Figure 1).

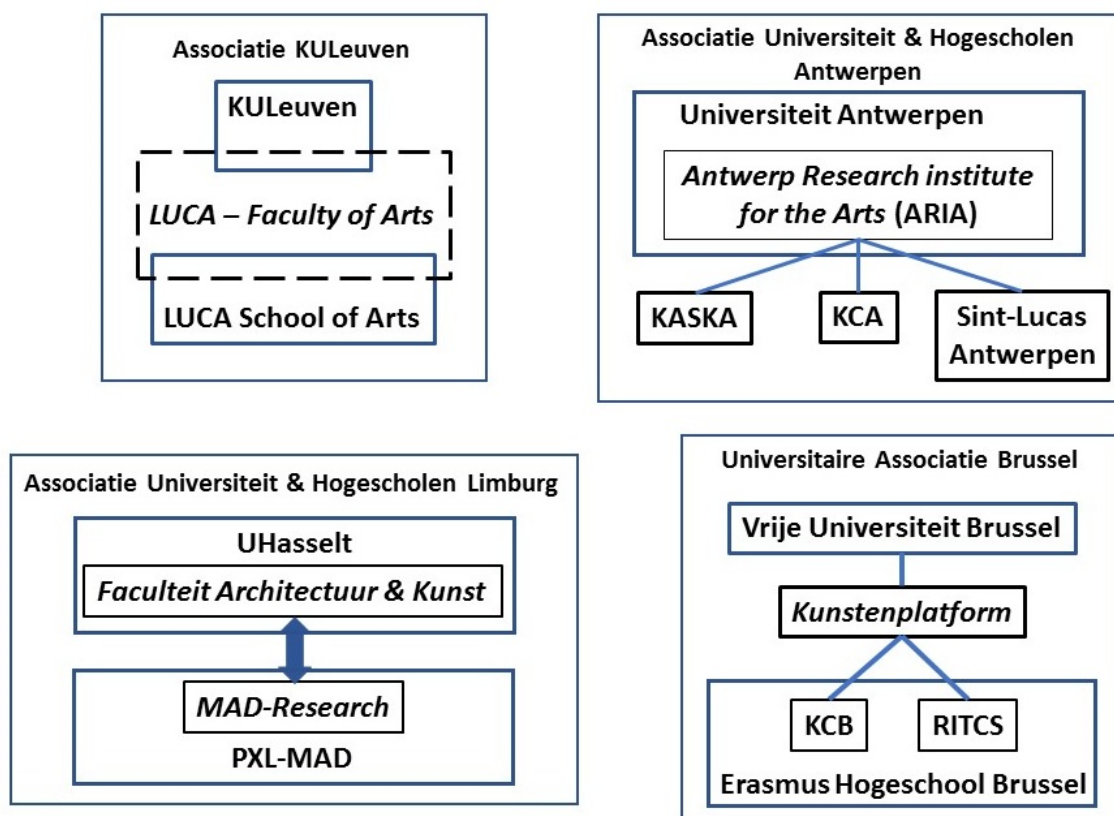
² The '*Performing Arts Research and Training Studio*', based in Brussels since 1996.

³ The *Hoger Instituut voor Schone Kunsten* [Higher Institute for Fine Arts], based in Ghent since 1997.

7.6.2 Organizing artistic research

To facilitate the PhD in the arts and artistic research more broadly, most universities and the *Schools of Arts* they are associated with have created specific organisational units. These vary in institutional embeddedness and executive mandate, and highlight the particular conceptualization of artistic research among the Flemish associations (see Figure 2).

Figure 2: Institutional embedding of artistic research in Flanders



The *Associatie KULeuven* arguably represents the most integrated example, with *LUCA Faculty of Arts* effectively joining the university and *School of Arts* into one organisational unit dedicated to artistic research and doctoral trajectories in the arts. Due to this, distinctions between ‘artistic’ and ‘academic’ researchers are less strict, allowing – exemplified by the ability of arts-based PhD holders to apply for (internal) professorial vacancies, for instance. In turn, this facilitates the acquisition of external funding, which often requires senior or tenured staff for eligible applications (e.g. FWO; ERC). The *Associatie Universiteit & Hogescholen Limburg* does not quite feature an integrated faculty joining UHasselt and PXL-MAD, but interaction and collaboration between the *Faculteit Architectuur & Kunst* (UHasselt) and *MAD-Research* (PXL-MAD) is structurally anchored in the association. This is illustrated by the fact that various senior (artistic) researchers at *MAD-Research* hold UHasselt mandates too, allowing them to act as academic supervisors for PhDs in the arts.

With the *Antwerp Research Institute for the Arts* (ARIA), the *Associatie Universiteit & Hogescholen Antwerpen* (AUHA) has a university research group dedicated to artistic research, which associated *Schools of Arts* collaborate with and doctoral candidates in the arts are enrolled in. Although ARIA is part of UAntwerpen, its steering committee consists of university and *School of Arts* faculty – ensuring representation of academic and artistic perspectives. The *Universitaire Associatie Brussel* (UAB), finally, maintains a more strict division between VUB and associated *Schools of Arts* RITCS and KCB. The *Kunstenplatform* is situated on the level of the association, and features representatives of all parties involved to organize the PhD in the arts and

advise the association on issues concerning artistic research. Despite the presence of various representatives in the *Kunstenplatform*, the UAB's format is arguably the least integrated example here, acting in the first place as an administrative, organizational unit rather than a substantial space for artistic research to take place in.

The UGent association is unique in not operating a formal, dedicated organ to facilitate the doctorate in the arts and artistic research in general. Instead, it favours direct interactions between PhD candidates, artistic supervisors and their academic analogues employed at the university. Additionally, it merits to point out that even though all associations do characterize potential outcomes of doctoral research in the arts to be artistic (e.g. film) or scholarly (e.g. peer-reviewed journal publications) in nature, the UGent association explicitly describes realisations as consisting of both – emphasising scholarly expectations of artistic researchers.

7.6.3 Flemish PhDs in the arts since 2006

At the time of writing (cf. Spring 2021), 146 artistic PhD projects have been successfully defended¹ in Flanders, and every *School of Arts* now boasts several finished doctoral trajectories. But the consolidation of arts-based inquiry in the form of awarded doctorates has differed across institutions. Where some *Schools of Arts* produced several PhDs in the years immediately after the first was awarded by KU Leuven in 2006 (see Table 1), other institutions like PXL-MAD (cf. 2013), KASK (cf. 2012) or RITCS (cf. 2015) delivered their first completed doctoral projects considerably later (see Table 1).

Table 1: Distribution of defended PhDs in the arts in Flanders 2006-2021 (N=146)

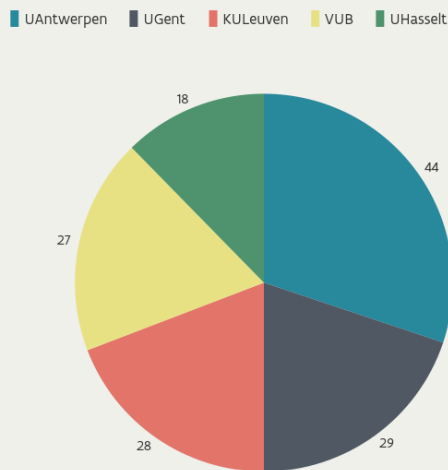
SCHOOL OF ARTS	KASK	Conservatorium	KASKA	KCA	Sint-Lucas Antwerpen	LUCA School of Arts	PXL MAD	KCB	RITCS	TOTAL
HOGESCHOOL	HoGent	HoGent	AP	AP	KdG	n.v.t.	PXL	EHB	EHB	
UNIVERSITEIT	UGent	UGent	UAntwerpen	UAntwerpen	UAntwerpen	KULeuven	UHasselt	VUB	VUB	
2006	0	0	0	0	0	1	0	0	0	1
2007	0	0	0	0	0	0	0	1	0	1
2008	0	0	1	0	1	0	0	0	0	2
2009	0	0	0	2	0	0	0	1	0	3
2010	0	0	2	0	0	2	0	0	0	4
2011	0	0	0	0	0	2	0	1	0	3
2012	4	4	1	1	1	5	0	0	0	16
2013	2	1	0	0	0	0	1	0	0	4
2014	1	4	2	1	0	1	2	3	0	13
2015	5	0	2	0	0	0	6	2	1	16
2016	2	2	2	1	2	4	0	2	0	15
2017	2	0	2	1	1	1	2	2	0	11
2018	1	0	0	2	2	7	0	1	3	16
2019	0	0	3	1	2	2	7	3	1	19
2020	0	0	5	5	0	2	0	4	0	14
2021	0	1	0	0	1	1	0	1	0	4
N.D.	0	0	0	0	0	0	0	1	0	1
Total	17	12	20	14	10	28	18	22	5	146

With 44 defended doctorates in the arts, the UAntwerpen association has clearly taken a forefront in artistic research in Flanders in the past fifteen years – accounting for a third of all Flemish PhDs in the arts since 2006.

UGent and KULeuven each represent roughly 20% of the total, VUB and UHasselt for 17% and 13% respectively (see Figure 3).

Clearly then, the distribution of PhDs in the arts across Flemish university associations does not reflect their relative size.

Figure 3: University association share of PhDs in the arts in Flanders 2006-2021 (N=146)



In collaboration with *Schools of Arts* KCA, KASKA and Sint-Lucas Antwerpen, the UAntwerpen association also boasts the highest disciplinary variety in the doctorates it has awarded in the past fifteen years (see Figure 4; Table 2).

Presumably, this is brought by the fact that the UAntwerpen association includes three distinct institutions for higher arts education, which had already developed a distinct artistic identity vis-à-vis one another before their formal association with UAntwerpen.

Figure 4: Artistic disciplines in PhDs in the arts in Flanders 2006-2021 (N=146)

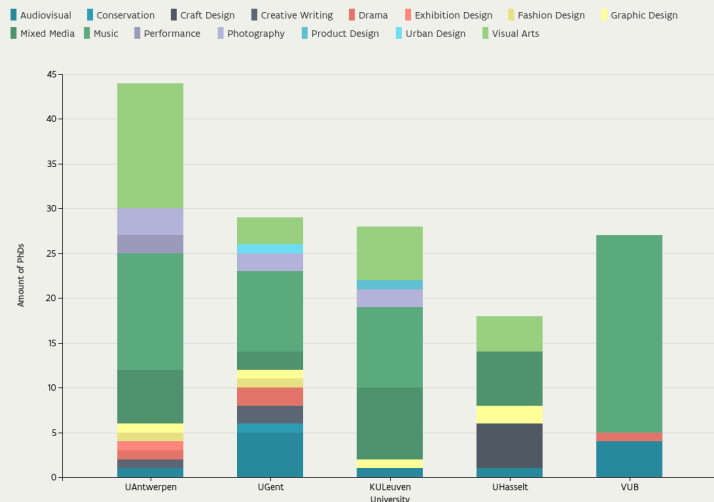


Table 2: Artistic disciplines in PhDs in the arts in Flanders 2006-2021 (N=146)

Disciplines	UAntwerpen	UGent	KULeuven	UHasselt	VUB	Total
Audiovisual Arts	1	5	1	1	4	12
Conservation	0	1	0	0	0	1
Craft Design	0	0	0	5	0	5
Creative Writing	1	2	0	0	0	3
Drama	1	2	0	0	1	4
Exhibition Design	1	0	0	0	0	1
Fashion Design	1	1	0	0	0	2
Graphic Design	1	1	1	2	0	5
Mixed Media	6	2	8	6	0	22
Music	13	9	9	0	22	53
Performance	2	0	0	0	0	2
Photography	3	2	2	0	0	7
Product Design	0	0	1	0	0	1
Urban Design	0	1	0	0	0	1
Visual Arts	14	3	6	4	0	27
Total	44	29	28	18	27	146

The *Universitaire Associatie Brussel* stands out as the association with the lowest disciplinary variety – delivering doctoral titles in *Audiovisual Arts*, *Drama* and *Music* exclusively (see Figure 4; Table 2), but is very prominent in the disciplines it is active in (cf. 33,3% of PhDs in *Audiovisual Arts* and 42,5% of PhDs in *Music* – see Table 2). This, again, relates to the particular background of the *Schools of Arts* included in the association. With one institution devoted to music (cf. KCB) and another to stage and media arts (cf. RITCS), the artistic disciplines represented by the doctoral titles granted reflects the composition of the VUB association. Similarly, the existence of PhDs focused on *Craft Design*, for instance, is brought by the specific artistic expertise already present at Schools of Arts (in this case PXL-MAD, see Figure 4) before association. Insofar artistic research in Flanders involves both universities and *Schools of Arts*, the PhD trajectories that have been finalized until this point indicate that their substance depends mostly on the latter category of institutions.

Music stands out as the most prominent artistic discipline research takes place in in Flanders – accounting for more than a third of all PhDs in the arts since 2006 (cf. 36,3% – see Table 2). Presumably, this is related to the ‘academic’ tradition that already existed in the conservatories and other institutions for tertiary arts education before the academiseringsproces. Other than their counterparts in the fine arts, these institutions and their staff were always been at least peripherally involved in scholarly fields like musicology and music historiography. This, in turn, is a likely explanation for the strong historical interest found in many doctoral projects in music. Design disciplines, conversely, tend to be less numerously represented in Flemish PhDs in the arts, with *Craft Design* (3,4%), *Fashion Design* (1,3%) and *Graphic Design* (3,4%) accounting for a minimal portion of the total. Presumably, this relates to the fact that design disciplines were previously situated on the professional end of higher art education. Design disciplines’ historical focus on practical solutions and outcomes combined with their emphasis on craftsmanship has ostensibly rendered the introduction of investigative practices less self-evident. But their gradual increase over recent years does demonstrate how artistic disciplines centred on design are developing productive modes of engaging with research activities.

¹ This figure includes internal defences, and due to the nature of artistic research – which often requires physical presence to fully appreciate the outcomes of inquiry – many public defences scheduled for the 2020-2021 academic year have been postponed because of the COVID-19 pandemic and the ensuing measures.

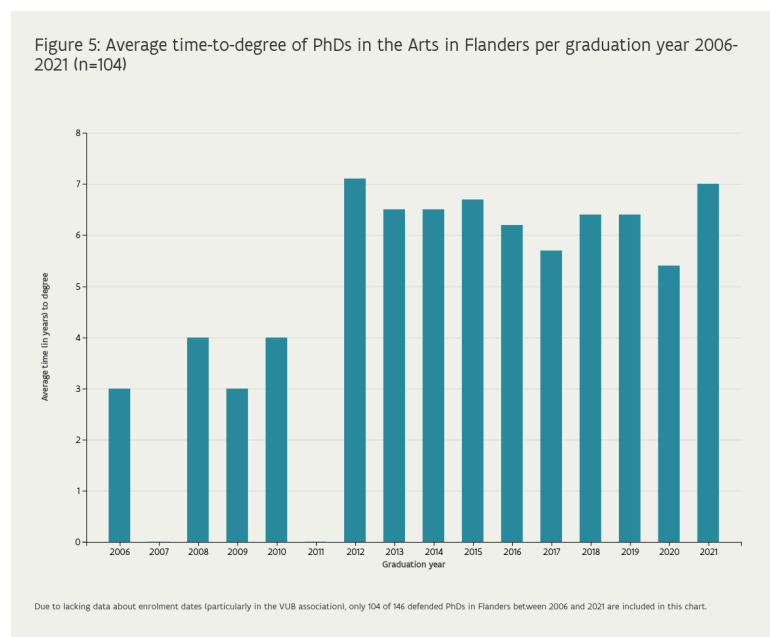
7.6.4 PhD trajectories in the arts in Flanders

PhD trajectories in the arts in Flanders are comparably longer than their academic counterparts. Where the median time-to-degree for doctoral candidates in academic disciplines is 4,7 years (cf. *Vlaams Indicatorenboek* - 3.2.4), the median for PhDs in the arts is 6,5 years. This reflects structural differences in funding streams on the one hand and how research is conducted on the other.

In academic disciplines, FWO, IWT and BOF mandates have been the most important funding schemes for doctoral research in the 2006-2021 period (cf. *Vlaams Indicatorenboek* - 3.2.2) – which ideally result in 4-year PhD trajectories. But because doctoral research in the arts is less likely to be funded by FWO, and is generally ineligible for IWT and BOF funding, artistic PhDs are mostly financed directly by *Schools of Arts* themselves. The so-called *academiseringsmiddelen*¹ [academization resources] – a funding portion intended to support the *Schools of Arts* in their pursuit of ‘academic’ mandates allocated by fixed parameters (e.g. student numbers; delivered degrees) – form the financial backbone of artistic research. Much like the universities’ BOF resources, these funds are largely deployed at the discretion of the institutions. To this end, the *Schools of Arts* organize (annual) open calls prospective doctoral candidates can apply to. In these applications, they are usually expected to submit a written proposal outlining their existing portfolio, their doctoral project and the artistic and academic supervisors involved.

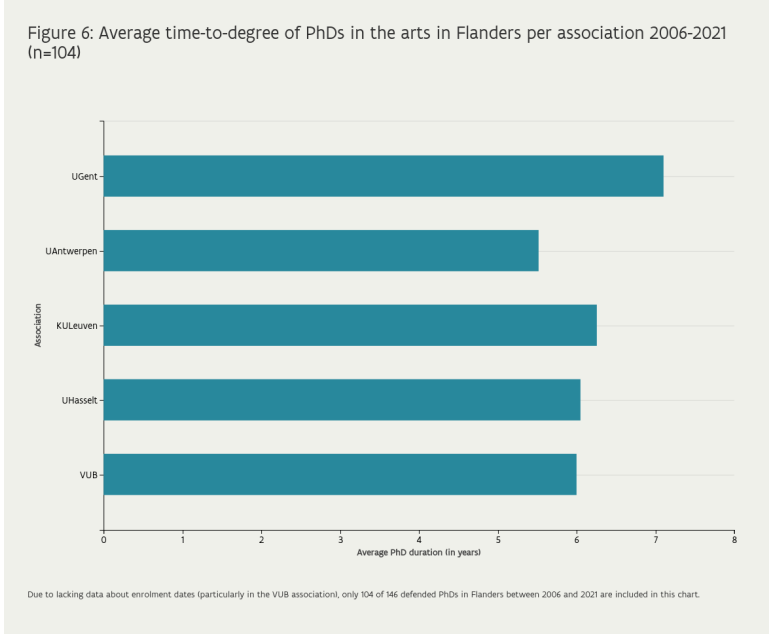
In the face of limited resources, however, *Schools of Arts* often solicit doctoral candidates in contracts with part-time research mandates – hence explaining the comparably longer time-to-degree of artistic disciplines. On the one hand, doctoral research in the arts is often conducted by assistant staff, whose contract consists of research and teaching assignments. This allows embedding research expertise into the curriculum – as BA and MA programs now include inquisitive competences too – while also combining resources spent on research and education. And on the other hand, part-time research assignments are prevalent among artistic researchers without educational responsibilities. Not requiring a full time research commitment allows established artists to potentially combine a formal inquisitive mandate with a professional arts practice, which is an attractive option for parties involved. It allows *Schools of Arts* to solicit artists who have already distinguished themselves in their own field, and does not pressure potential doctoral candidates to commit to a research trajectory at the expense of their non-investigative arts practice.

That the average time-to-degree of early PhD trajectories was considerably shorter than doctoral projects after the consolidation of artistic research in Flanders (see Figure 5) reflects a perceived need to professionalize *School of Arts* faculty in response to the *academiseringsproces*. Initially, there was a degree of anxiety in tertiary arts education that the PhD in the arts would become a requirement for teaching staff in higher arts education. Although this fear has now proved unwarranted, it accounts for the considerably shorter PhD trajectories in the earlier years of formal artistic research in Flanders.



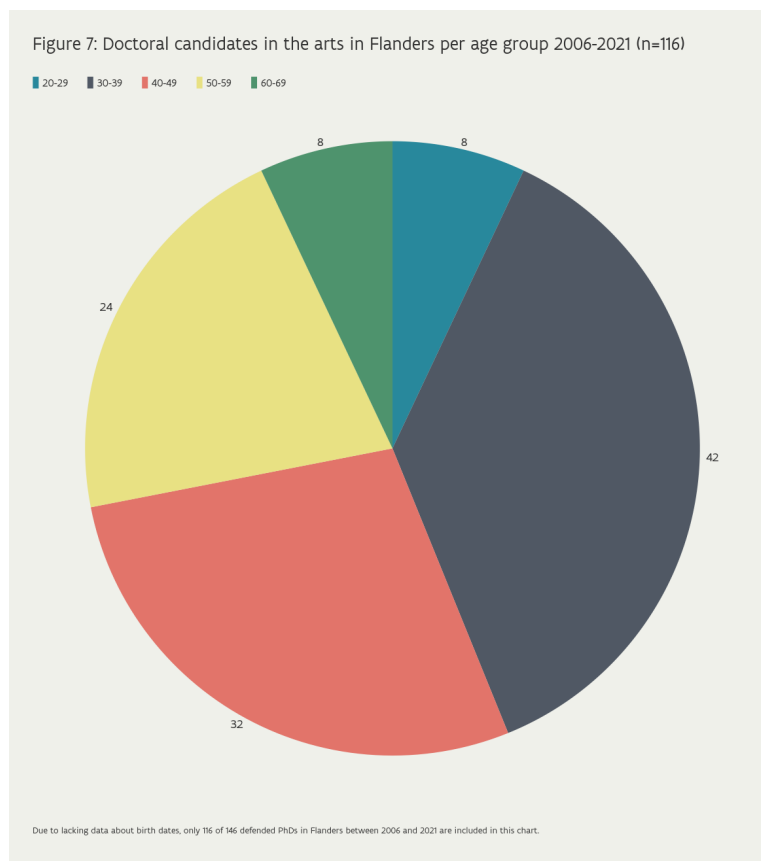
Looking at the average time-to-degree, only UAntwerpen displays a number below 6 years (see Figure 6). Presumably, its considerably higher incidence of four-year PhD trajectories – the norm for ‘academic’ doctoral candidacies – relates to their embeddedness in a university research group. Perhaps, the relatively prominent role played by academic actors in artistic research conducted in the UAntwerpen association has effectuated a stronger reliance on the standards and practices of university PhD trajectories. While some critical remarks could perhaps be made about projecting the formula of a ‘classical’ doctoral training on researchers in the arts, it should also be noted that only the UAntwerpen association employs artistic researchers funded by BOF-resources – the internal, competitive university research fund.

That artistic research in other university associations does not (or cannot) access ‘general’ research funding streams suggests that the approach followed in the UAntwerpen association results in lines of inquiry with both clear academic and artistic merits.



In addition to the comparably longer trajectories of artistic PhD research in Flanders, doctoral candidates in the arts tend to obtain their degree later in life than their academic analogues. Only 4,7% of the dissertations defended at the time of writing were submitted by researchers younger than 30, whereas 45,2% of the doctoral candidates' title was awarded after the age of 40 – with 27,5% of the PhDs defended after the age of 50 (see Figure 7).

That Flemish doctores in the arts obtain their degree at a later stage in life reflects the expectation that doctoral candidates have already developed an autonomous artistic practice before pursuing a PhD (cf. supra), and an uninterrupted shift from MA to PhD programs is exception rather than rule in the arts.



¹ Even though the term suggests that the 'academization' of the *Schools of Arts* is ongoing, this process has in fact been finalized.

7.6.5 Analyzing and evaluating artistic research

Unlike academic research, the registration and evaluation of the outcomes of artistic research is not harmonized across the Flemish higher education space. Even though every association requires their doctoral candidates in the arts to register and store their publication output in institutional repositories for inclusion in the BOF-key, there are considerable variations in the instruments used to monitor arts and design research outcomes that diverge from traditional academic formats (e.g. peer-reviewed journal articles; conference papers). Because information about the outcomes of artistic research is stored in differently organized repositories and its registration does not currently follow uniform entry protocols in different institutions, few observations can be conclusively made about the material outcomes of fifteen years of Flemish research in the arts. Given the varieties in the status of written dissertations as a prerequisite for obtaining a doctoral title across the various Flemish university associations, even the PhD thesis does not represent a disambiguated object to systematically address the results of artistic research beyond analyses of broad metadata categories.

As a result, the funding scheme for artistic research currently does not include a variable *ex-post* component intended to allocate resources based on performance indicators. And insofar variable funding allocation is practiced in contexts other than Flanders, it is mostly operationalized in qualitative assessment instruments like the UK's REF [Research Excellence Framework], Australia's ERA [Excellence in Research for Australia] or the Swedish SRC's [Swedish Research Council] periodic evaluation of support for artistic research by expert committees. Even though there is little consensus as to how excellence and quality can be adequately assessed when artistic research is concerned, involved parties in most higher education contexts agree that it makes little sense to simply integrate arts and design research outcomes in existing bibliometric monitoring tools and assessment instruments. Poland stands out as a solitary counterexample, however. Its CESU [Comprehensive Evaluation of Scientific Units] includes quantitative indications of artistic researchers' performance using weighed outcome measures, which have been implemented in the same PRFS [Performance Based Research Funding System] 'academic' outcomes are assessed by. But the fact that even time and labour intensive outcomes of artistic research (e.g. a symphony; a screenplay) are valued below scholarly publications in scientific journals with average impact factors demonstrates that it is difficult and perhaps undesirable to liken arts and design research outcomes to scholarly realisations in an integrated assessment tool.

But even though the application of quantitative and metric logics to artistic research is rarely advocated for, the field could certainly benefit from systematic registration. Currently, the lack of tools to structurally document and disclose the outcomes of artistic research, combined with the ephemeral nature of at least some of its possible realisations (e.g. performances; temporary exhibitions) obscure the results of research in the arts, and render the accomplishments of individual researchers or the institutions they are embedded in discrete at best. Future steps in the institutionalization of artistic research in Flanders must therefore on the one hand recognize the inappropriateness of metric approaches towards the assessment of artistic research, but on the other hand emphasize the need to disclose artistic research outcomes and the investigative trajectories they are situated in to the benefit of the field's future.

7.6.6 Further reading

Hellström, T. (2010). Evaluation of artistic research. *Research Evaluation*, 19(5), 306-316.

Lewandowska, K., & Stano, P. M. (2018). Evaluation of research in the arts: Evidence from Poland. *Research Evaluation*, 27(4), 323-334.

Sivertsen, G. (2018). "An attempt to create an indicator for performance-based funding for artistic research in Norway." In Ysebaert, W. & Van Kerckhoven, B. (Eds.) *Evaluating art and design research: Reflections, evaluation practices and research presentations* (pp. 93-109). Brussels, BE: VUB Press.

Vanlee, F. (2021). Discourses on artistic research in Flanders: Non-scholarly perspectives on research in the arts. *Artnodes* 27, 1-10.

Vanlee, F., & Ysebaert, W. (2019). Disclosing and evaluating artistic research. *Journal of Data and Information Science*, 4(3), 35-54.

Wilson, J. (2016). The white cube in the black box: assessing artistic research quality in multidisciplinary academic panels. *Assessment & Evaluation in Higher Education*, 41(8), 1223-1236.

Ysebaert, W. & Martens, B. (2018). "The ECOOM-VUB stakeholder-driven evaluation design for art and design research outcomes." In Ysebaert, W. & Van Kerckhoven, B. (Eds.) *Evaluating art and design research: Reflections, evaluation practices and research presentations* (pp. 93-109). Brussels, BE: VUB Press.