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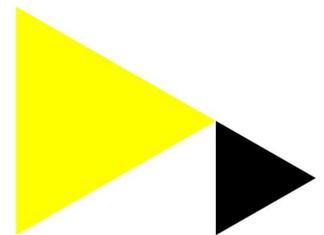
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Changes in Curriculum Rationales

Linda van Ooijen-van der Linden, Indira N. Z. Day,
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Introduction

Changes in research–education connections are expected to become visible in the rationales of curricula, especially if a change programme focuses on changing this connection at the university organisational level. This chapter focuses on these potential changes during the Amsterdam change programme.

Barnett described a curriculum as ‘a pedagogic vehicle for effecting changes in human beings through particular kinds of encounters with knowledge’ (Barnett, 2009, p. 429). He rephrased this to the questions ‘what should we teach?’ and ‘how should we teach?’, explicitly noting the conceptual flattening of these questions compared to the original description. While a curriculum does serve to allow transmitting knowledge and learning, this description of what it is supposed to do, does not capture the rich complexity of what a curriculum is and how it relates to its aims, purposes and effects (Young, 2014). A curriculum can be further explicated as ‘a set of teaching and learning prescriptions, [which is] in essence a knowledge-forming activity’ (Scott, 2014, p. 14). At the same time, ‘[curricula] set limits on what is possible to learn in schools or other educational institutions’ (Young, 2014, p. 7). According to these definitions, the curriculum provides directions and boundaries for student learning. As Scott (2014, p. 27) states, ‘those relations between curriculum contents, pedagogic forms, evaluative processes and criteria are a function of how knowledge is conceived and used within a curriculum, rather than they being independently derived’.

While we often discuss the curriculum as if it were a unified object, it consists of many different elements that need to be aligned through purposeful curriculum design (Biggs, 1996; Huizinga, 2014; Van den Akker, 2003, 2013).

Different missions of higher education, such as to provide general education, educate specialists, educate researchers or educate educators, require knowledge to be organised in the curriculum differently (Short, 2002). This suggests the importance of deliberate and collaborative curriculum design in which curriculum designers explain the rationale: The underlying reasons why they include specific knowledge, information or learning activities in the curriculum (Scott, 2014; Van den Akker, 2003). How a curriculum is conceived and designed is influenced by ideas of what a curriculum is and the role learners can or should fulfil in the design and implementation process (Bovill & Woolmer, 2018; Karseth & Sivesind, 2010).

In addition, the curriculum is altered when lecturers redesign learning activities during and in between teaching; when students respond differently; when the professional field requires different knowledge, skills and attitudes; or when policies change (Bovill & Woolmer, 2018; Wiliam, 2013), as will its rationale.

In this chapter, we first outline different strands of conceptualisations of curricula. They serve as the foundation for an overview of the function and content of rationales on research in higher education bachelor's curricula across time and disciplines as well as related to actual research integration in changing curriculum rationales. Then we report the findings of a monitoring study focused on changes in the curriculum rationales of bachelor's programmes in Amsterdam UAS during the Research into Education strategic programme. Findings are discussed in terms of different stakeholders who can be served by research integration and the curricula conceptualisations to which they relate.

The Curriculum

Much has been written about what constitutes a curriculum. In this body of knowledge, (at least) three strands can be seen: a 'student-centred' strand, a 'structure and instruments' strand, and a 'knowledge and content' strand. The student-centred strand focuses on the purpose of curricula in how they allow each student to be a whole person (Roberts, 2015) and to become a professional with a professional identity in an uncertain world (Barnett, 2012). The focus on students' development contrasts with teacher-focused education in which transmitting knowledge from teacher to student is centralised from the perspective of a sending teacher. Young (2014) sees this social function of the curriculum through offering constraints and possibilities, shaped by acts,

beliefs, motivation, and by all involved: as a 'social fact'. Overall, this strand mainly focuses on developing certain dispositions in students (Barnett, 2012) and developing human power (Deng, 2021). Although the simultaneous focus on effectiveness and efficiency intends to empower both lecturers and students, Tam (2014) criticises that in real life this easily amounts to an outcome-based and instrumental approach. Then, contrary to the intentions, the curriculum is easily reduced to a collection of stand-alone active learning activities in which lecturers coach their students towards passing the examinations, thus merely demonstrating the learning goals have been achieved and not focused on full-person learning.

The second strand of curriculum design mainly focuses on the curriculum's structure and its instrumental functionality for learning. This functionality is defined in systematically striving towards certain outcomes (Roberts, 2015) and is characterised by a thick focus on consistency across all elements. Constructive alignment of objectives, assessment and teaching/learning activities helps students and lecturers realise the intended curriculum (Biggs, 1996). Backward design is an often used design strategy that helps to reach constructive alignment from the desired results to acceptable evidence of these results, and then to a design of learning and instruction accordingly (Wiggins & McTighe, 1998). Part of this strand are the practical lenses for curriculum structures, such as Van den Akker's (2003) Spider Web Model, which positions the curriculum rationale at the core of the model, with other elements, such as aim and objectives, content, lecturers' roles and location circling it. All elements are interconnected through the threads of the spider web, presuming that if one element is changed, the others will need to as well. The rationale and the notion of interconnectedness, therefore, are positioned to capture the curriculum complexity as Barnett (2009) and Young (2014) described. Alternative models that consider the curriculum structure are, for instance, the Four Component Instructional Design (4CID) model, which offers detailed steps for the design of learning activities structured in a curriculum (van Merriënboer, 2019), and the ADDIE (Analysis, Design, Development, Implementation and Evaluation) model (Branch, 2009), which considers analytical phases that, when combined, lead to a thorough and well-founded curriculum design. Such focus on the structure of the design process or the curriculum entails the risk of paying less attention to the curriculum's content than it deserves.

The third strand focuses on knowledge and content of the curriculum. The afore described notions of constructive alignment, backward design and their related models focus on the curriculum structures, mainly disregarding

the learning activities' content. This strand however zooms in on notions of knowledge in general and students' relations to certain forms of knowledge and their understanding of the discipline they study (Ashwin, Abbas, & McLean, 2013), as well as the transformation of that knowledge in the curriculum into student learning (Ashwin, 2014; Bernstein, 2000). Liminal space, as Land, Rattray, and Vivian (2014) described, is an interactionist view on how threshold concepts in acquiring a certain knowledge base can contribute to curriculum design and transformative learning. Threshold concepts and their teaching are very content driven in expecting the learner to transform, to make a discursive shift and to understand the concept. Luckett and Humna (2013) described another, yet conceptually adjacent, approach to working with different kinds of knowledge, in which they combined the specialised dimension of legitimation code theory (Maton, 2010, 2013) with Bernstein's concepts of classification and framing to surface what counts, what is valued or worthy of distinction and what is recognised as specialised practice. This resulted in a detailed analysis of the implicit layers of meaning and meaning making in the curriculum (see also (Paxton & Frith, 2013). Knowledge structures of four humanities courses were discerned to consist of knowledge codes and knower codes, explicating that students are required to develop different ways of relating different kinds of disciplinary knowledge, different dispositions and attributes and different ways of intellectual practicing in different courses. Uncovering and explicating these implicit knowledge structures and the to-be-developed professional actions and interactions with knowledge are expected to unlock the possibility of designing a curriculum that makes these knowledge structures accessible for students and allows them to consciously learn the rules of the game (Luckett & Hunma, 2013).

The different perspectives on curriculum content can be connected to the curriculum structures via applying the concept of 'pedagogical content knowledge' (PCK). PCK bridges the gap between content-wise 'empty' design models, the disciplinary knowledge and pedagogical approaches by taking all into account and making them mutually dependent (Shulman, 1986). How to best teach subject matter depends on the specific subject matter, what students already know and many contextual factors influencing the learning process, such as identity, college management, national policies for funding, inspection and wider social and economic contexts (James, 2013). Therefore, '[PCK] affords a space for what Cousin (2008) has termed "forms of transactional curriculum inquiry"' (Land et al., 2014, p. 215), where teaching and learning are neither student-centred nor teacher-centred.

Added to the PCK notion, and as an integration of the strands of curriculum perspectives is here argued that Van den Akker's curriculum 'rationale' is the direction-giving element of curriculum design. The curriculum rationale can balance the instrumental approach of curriculum structures including the need to include specific aims and objectives with the profession's bigger ideas and the lecturers' freedom and responsibility to teach in a transforming way. The connection is made when lecturers plan forward and reflect backward on their student interactions (Wiliam, 2013). If formulating a shared rationale is not prioritised, if the elements of the curriculum are not aligned to this shared rationale and if the communication within the teaching team and with students is not properly addressed, then it might not function up to its full potential as a curriculum in the sense of transforming knowledge and individuals. Thus, the rationale and the curriculum design strands or perspectives are interrelated, influencing one another, shaping the curriculum as Young's (2014) 'social fact'. Research integration in curricula requires a rationale on research in professional practice and on how education could or should prepare students for this (Ashwin, 2014).

Rationales of Research in Curricula

Historically, curriculum rationales have both included and excluded 'research' as a variable. Schimank and Winnes (2000) explain how pre-Humboldtian, Humboldtian and post-Humboldtian types of relationships between research and education can be discerned. For pre-Humboldtian, the relationship is categorical in nature; research and education are two entirely different things, organised in separate institutions. Universities were dedicated to teaching, research took place in 'learned societies' or 'academies'. Later on, and following the Humboldtian university ideal, universities framed their teaching responsibility as inseparable from the professors' research activities. Research was seen as the connecting factor between lecturers and students as both searched for new knowledge. In the post-Humboldtian pattern, a differentiation of roles and/or organisations and/or resources for teaching and research occurs within universities (Schimank and Winnes (2000). National research policies and institutional governance in, for instance, England and the Netherlands led higher education to become more focused on efficiency, effectiveness and outcome-based cultures (Leisyte, Enders, & de Boer, 2009). Accountability and funding mechanisms pushed these institutions into a post-Humboldtian relationship between education

and research. Currently, the balance becomes more diverse. Research-intensive universities strive to establish better opportunities for academics to build a career on teaching by advocating a more diverse perspective of recognition and rewards based on contributions other than scientific publications (te Pas, 2019). In turn, universities of applied sciences started strengthening their research capacity around the turn of this century (Witte, van der Wende, & Huisman, 2008), which still is a work in progress (Griffioen, 2020). A multiplicity can be seen moving from the ideal Humboldtian perspective to more diverse research–education connections.

A diversification of research–education connections at the curriculum level requires changes in its rationale. Formulating a curriculum rationale generally answers the question ‘to what purpose?’, or shorter, ‘why?’ a curriculum is shaped the way it is. Answers to this question can be informed by the body of knowledge on the history of education, human learning, the discipline (or multi- or trans-disciplinarity), and more or less dominant perspectives of relevant stakeholders. Decisions on curriculum rationales in higher education are influenced and made at the macro-, meso- and micro-levels that differ in their interdependencies across countries. The Bologna process set out with a curriculum focus, but it also influenced policy and funding in such a way that it influenced rationales’ focus and boundaries (Berndtson, 2013). Some socio-political, economic and geopolitical forces influencing curricula are relatively stable in time and well known. Others, such as technology and decolonisation, are relatively new (Krause, 2020; Lotz-Sisitka, Wals, Kronlid, & McGarry, 2015). The academic discipline is a major influencer in curriculum decisions, as are lecturers’ beliefs about educational purpose. Broader conceptions of research have been found to coincide with more diverse integration of research in education as course content, skills, inquiry learning and students doing research (Roberts, 2015). How lecturers fulfil their role as change agents is just as an interrelated process as is curriculum change, determined by factors at all levels, and resulting in progressive, oppositional, territorial, bridge building and accommodating agency (Annala, Lindén, Mäkinen, & Henriksson, 2021; Annala, Mäkinen, Lindén, & Henriksson, 2020). Changing parts of a programme’s curriculum can be done in isolation by individual lecturers and, preferably, in collaboration (Anakin, Spronken-Smith, Healey, & Vajoczki, 2017). Several forces such as ownership, identity, and resources (e.g. time) influence the outcome of the change process in an intended curriculum, at the level of individual lecturers, their department or institution. The degree of influence of each force, whether it operates at the individual, department or institutional level, and whether the

influence enables or inhibits curriculum change, is determined locally. This renders curriculum change highly context-specific (Anakin et al., 2017). Change teams at programme level need time, opportunities for collaboration with other redesign teams and guidance on curriculum design (Turner, Healey, & Bens, 2020).

National and institutional priorities tend to shift focus faster than teaching and learning practices can accordingly be designed, implemented, redesigned and become good practices (Hénard & Roseveare, 2012; Krause, 2020). Therefore, Brew and Cahir (2014) propose that a sustainable approach of change in higher education institutions would be to do three things: 1) hold on to the values and principles of their profession, 2) see and know the broader patterns and development and 3) reframe the current priorities and associated changes in a way that serves the profession and the professionals. For curricula with a professional focus, serving the profession and the professionals includes designing education in such a way that it allows teaching and learning as intended by the rationale, aims and objectives. That is, only if rationale, aims and objectives have been well chosen and formulated to include all that is relevant for starting professionals, and nothing else. The continuous becoming by balancing one's current professional identity, action and knowledge with new information and experiences requires the professional to ask the right questions (Griffioen, 2019). This requires knowledge and professional action in education and research to be tailored to the current state of the society, profession, lecturers and students, taking into account their history and relevant contextual elements (Krause, 2020; Robertson & Bond, 2005), as well as taking into account both expected and unknown changes in the future (Barnett, 2018).

The Changing Role of Research in a Curriculum

The complexity of curriculum design and integrated research rationales can be explained by considering the nature of knowledge on education and curriculum design. This is not just another type of academic disciplinary knowledge with a specific focus and dedicated set of agreed upon methods of research. Short (2002) would call the knowledge on education mission-oriented knowledge. The distinction between discipline-oriented knowledge and mission-oriented knowledge serves to explain that the complexity of mission-oriented subjects cannot be broken down into separate and researchable building blocks, as

is common in mono-disciplinary fields; they require to be considered and researched as complex wholes. Knowledge creation in mission-oriented subjects, such as education, is achieved in multiple ways: in formal research, on-the-go in professional practice and both inside and outside research institutions. In line with the knowledge strand in curricula perspectives described above, Short (2002) argues how curricula are built, or should be built, on four types of knowledge (see also Roberts, 2015). The first is general knowledge on citizenship, how to act wisely as a person in different contexts and situations. The second is disciplinary knowledge, which is needed to function professionally in a specialised field. The third is research knowledge, as universities have the responsibility to educate researchers on how to advance their field. The fourth is educational knowledge, as lecturers teaching any type of knowledge need to be educated in how to educate and how to educate that specific type of knowledge. Short (2002) suggests students in higher education need all four types of knowledge, but their relative contributions within a specific curriculum should be tailored to the type of education: general education, education of specialists, education of researchers and education of educators. Indeed, in higher education daily life, the rationales of academic disciplines are interwoven with the rationales of research in academic curricula (Hessels, Lente, & Smits, 2009; Lepori, 2007; Neumann, 2001; Roberts, 2015). For example, the health disciplines have been advocates of evidence-based practices for a long time (Burke et al., 2005; Ruzafa-Martínez, López-Iborra, Barranco, & Ramos-Morcillo, 2016; Shorten, Wallace, & Crookes, 2001).

However, the large number of advocates does not imply a firm body of knowledge on how to bring research into the curriculum. In a systematic review on research integration in curricula, only seven of 121 papers pertained to curriculum rationales of a single curriculum or as disciplinary guidelines (Griffioen, Groen, & Nak, 2019). Six of these seven focused on disciplinary guidelines (macro-level), and five of these were on medical education, anatomy and pharmacy or nursing. The only study on the micro-level of a single curriculum focused on educational research in PhD programmes. No studies related to the curriculum at the national or institutional level (meso-level). Hence, insight and knowledge on curriculum rationales are scarcer in peer-reviewed journals than, for instance, insight and knowledge on aims and objectives or learning activities, as these subjects yielded forty-six and forty-eight papers, respectively. This thin body of knowledge on curriculum rationales might be due to a lack of knowledge or to a lack of knowledge as written down in peer-reviewed and published papers.

Still, the curriculum and its rationale are the vehicles for clear choices that lead to students' transformation from student to professional and their learning on how to use different types of knowledge in different types of professional action. However, comparisons of the planned, enacted and experienced curriculum (Cao, Postareff, Lindblom-Ylänne, & Toom, 2021) are relevant in this respect because they do not necessarily pertain to the same professional knowledge and actions (Annala et al., 2021; Ashwin, 2014). The planned curriculum as written down in policy documents, study guides and course manuals can result in multiple enacted curricula, depending on the lecturers responsible for teaching parts of the curriculum. Yet, if lecturers collaborate intensively to ensure consistency or even if the same lecturer(s) teach all students, that does not mean all students' experiences of the curriculum are alike. Therefore, changes in the planned curriculum are not automatically followed by corresponding changes in the enacted curriculum, which in turn do not automatically coincide with changes in the experienced curriculum.

The Focus of Curriculum Rationales

One of the Amsterdam strategic programme's main ambitions were the changes in the curriculum layer across the university. Further, one of the presumptions was that relevant curriculum changes would be visible in the learning goals of curricula as reported in Chapter 6 as well as in the curriculum rationales. A shift in the role research plays in the educational programmes' purpose would become visible over time in written down curriculum rationales, in answers of educational teams on 'why' research is part of the curriculum, or at least in a change in the characteristics or presence of research in these rationales. As with all monitoring studies in the Amsterdam change programme, the intention was to intervene as little as possible in the daily processes of education, which resulted in using the educational programmes' periodic self-reports as data for its analysis. These self-reports are part of a periodic system of quality enhancement for higher education. Nationally, educational programmes in the Netherlands undergo a quality assessment every six years. Most universities apply a similar system internally after three years. Therefore, educational programmes write a self-report for this assessment every three years.

The general standard for applied educational programmes, the 'HBO standard' for bachelor's programmes in the Netherlands provides the overarching framework for programme-specific national profiles (HBO-raad, 2009). National

committees agree upon the discipline-specific national profiles and serve to ensure the programmes' quality across institutions. The standard consists of four parts: intended learning outcomes, curriculum and learning context, assessment and achieved learning outcomes (Beoordelingskader accreditatiestelsel hoger onderwijs Nederland, 2018). A curriculum's rationale is mostly described as part of the first part, where the educational programme's focus and purpose are explained. This section was used in detail as data for this study, while the rest of the documents were scanned for relevant, additional content.

Self-reports generally come to life through teamwork, with the dual purpose of providing information for the quality-enhancement process, which also includes one or more site visits, and passing the six-year accreditation that is a prerogative for government funding. Additionally, there are the rationales and the programme objectives tuned annually as programme objectives in legally bounding education and assessment regulations. They are obviously tuned again during curriculum design and teacher–student learning interactions based on a backward design starting from programme objectives (Cao et al.). Thus, some difference can be expected between the written-down rationales and educational practice. Still, as ready-for-use documents, the self-reports are the most official information about changed curriculum rationales.

The self-reports of all Amsterdam UAS programmes were requested from the local Amsterdam UAS quality agency. For the period 2013–2015, prior to strategic programme Research into Education, fifty-nine self-reports were available and

Table 5.1 Overview of included self-reports in both time periods

Number of self-report documents per faculty and period		
Faculty	No. of docs in 1st period	No. of docs in 2nd period
Business and Economics	10	6
Sports and Nutrition	3	2
Digital Media and Creative Industries	7	4
Health	4	3
Applied Social Sciences and Law	7	5
Education	1	1
Technology	9	4
Teacher Education	18	17
Total	59	42

for 2016–2018 we received forty-two self-reports. In these documents quotes on the integration of research in education were selected and coded in Atlas.ti to signify which stakeholder was being served by the integration: professional practice, the educational programme, the student or some ‘instrumental’ stakeholder, such as the obligation to follow the HBO standard. Two researchers discussed the initial codebook and wrote a coding guide to ensure consistent coding. Quotes that the first coding researcher had doubts about were discussed until agreement on inclusion (or exclusion) and its code.

Categories of Research in Curriculum Rationales

The analysis of all documents in the two time frames showed a dominance of different stakeholders in how research is positioned in the curriculum’s rationale. Where the educational programmes are set up to educate students as future professionals, our research question of ‘with what purpose is research included in the curriculum?’ was not always answered with the student as the most important or final receiving stakeholder. The four types of argumentation are explained briefly here and further depicted in the upcoming subsections.

The first type of argumentation on rationales is related to the stakeholder’s professional practice. Educational programmes state that they integrate research into the curriculum to enable students to meet the demands from professional practice, or to improve the quality of professional practice in the end. The second argumentation focuses on the educational programme as a stakeholder. Integrating research into the curriculum in these educational programmes is assumed to improve educational quality, or research is used as a pedagogical instrument to teach different skills. The third type of stakeholder argument about the rationales is the student, where educational programmes state to incorporate research into the curriculum so that students acquire research skills or a research-minded attitude, or so that students can further develop professionally. Interestingly, the first student-oriented rationale focuses on the student while studying, where the second orients more towards the alumnus as professional and/or the professional field as a whole in which alumni are assimilated. The fourth type of argumentation is not related to a specific type of stakeholders, which could presume content as part of the argumentation; the arguments are more instrumental, in that they serve an obligation by including research in the curriculum. Rationales that are related to instrumental reasons

often focused on accountability structures. Programmes note, for example, that they incorporate research into the curriculum because national guidelines for programmes mandate it, or that they include research because that is in line with university policy or faculty policy.

Changes in Curriculum Rationales over Time

In this section, the changes in curriculum rationales over time are considered. The educational programmes showed a different prominence of the four types of argumentations about research, and some changes were seen over time (Figure 5.1 provides an overview of percentages across two time points). In the first time period, of the fifty-nine programmes across seven faculties, thirty wrote down rationales of research in their curriculum serving professional practice, nineteen argued with a focus on their educational programme, twelve positioned research to serve the student and eight programmes presented instrumental reasons. Three programmes did not show any argumentation about research in their curriculum. These numbers were influenced by the dominance of eighteen teacher education programmes, which had a shared and similar rational on professional practice, added with argumentations with research as a didactical tool serving their educational programme, research serving their

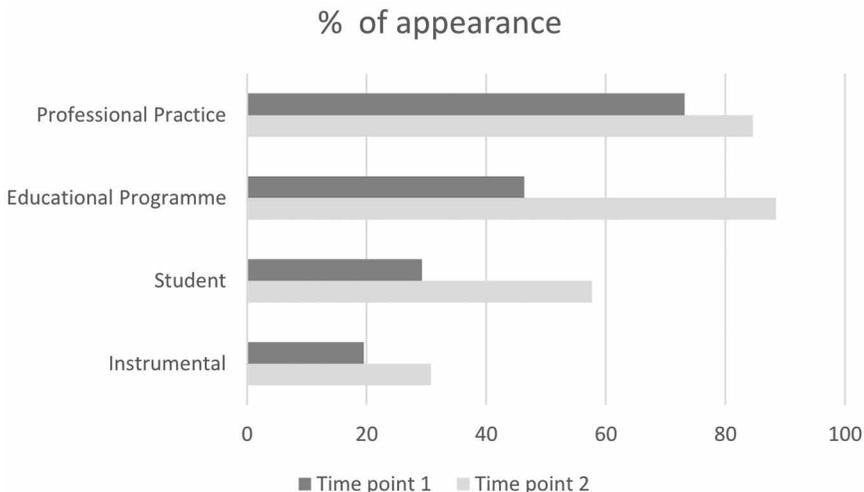


Figure 5.1 Percentage of appearance of the four types of argumentation on including research in the curricula.

students and no statements about instrumental reasons for including research into the curriculum.

In the second time point, of forty-two programmes, twenty-two had rationales on professional practice, twenty-three on the educational programme, fifteen on student and eight on instrumental. Now all forty-two programmes had rationales about research (for the difference between numbers of programmes, see Table 5.1). Because of their number, again a dominance of the teacher education programmes can be seen.

The findings showed that the strategic programme *Research into Education* was accompanied in time by an increase in curriculum rationales as formulated in self-report audit documents. Where the first time point showed a strong focus on professional practice, which was met in the second time point, this was then added with a thick focus on research in the curriculum to benefit the educational programme. Also an increase in the prevalence of the student as a stakeholder in the curriculum was found, and instrumental rationales showed the smallest increase.

Research in the Curriculum to Serve Professional Practice

When we consider the different rationales' content in the first period, the professional practice was the most prevalent stakeholder at Amsterdam UAS overall, and in six out of seven faculties, which emphasises the role of Amsterdam UAS in professional education. In four faculties, the number of quotes increased a few years later. Educational programmes at Amsterdam UAS mentioned different reasons for integrating research into the curriculum with regard to professional practice. Rationales in this category could be related to professional practice's demands. These demands in turn could be related to national frameworks such as professional profiles, as is apparent in the following quote: 'to ensure that future [structural business administrators] measure up to this profile, we prepare students for a career where research skills, technical craftsmanship, managerial skills, and an entrepreneurial attitude play an important role'. Additionally, the need for future professionals to use research skills is apparent in the rationale: 'our programme aims to teach sufficient knowledge and skills for new professionals to conduct fiscal research'. In several programmes, integrating research into the curriculum is related to evidence-based practices: 'starting from the first year, students are taught that professional action should be based on evidence based practice'. Rationales could also pertain

to the quality of professional practice. Such rationales are related to students developing skills to improve practice, such as this example from the pedagogical programme:

The current societal and political developments in the profession and field require an integrative competence. The pedagogical profession has become less defined and is characterised by an increase in flexibility and entrepreneurship. Creativity and authenticity are important parts of this. All those changes require an inquisitive and reflexive attitude. Additionally, the pedagogue must be able to use his knowledge and skill at different levels. He is like a spider in the web and can act, collaborate and respond to new situations from a multi-disciplinary approach (in multi-disciplinary teams).

The self-reports document the collaboration of programmes with representatives of their professional fields in higher vocational education on aligning the curriculum with professional practice.

Research in the Curriculum to Benefit the Educational Programme

The content of the rationales on education shows that in the first period, only the faculty of technology had the educational programme as the most prevalent stakeholder. In the second period, the focus on the educational programme was larger in the number of quotes than those with a focus on professional practice, overall and in four out of seven separate faculties. Rationales regarding the educational programme focused on incorporating research as a measure to increase the quality of the educational programme, such as in this example: 'The programme aims to further increase the graduate goals (in line with Centre of Expertise ambitions). In the past two years the programme has become more challenging, with an increased focus on research skills and quantitative methods.' Educational programmes could also use research as a pedagogical tool. In some instances, research was incorporated in the curriculum as a way to teach students different skills: 'They develop their research knowledge further by writing individual papers on an Asia- related subject and they learn how in various Asian societies, cultural approaches influence business negotiations and relations, and how to improve their own communications skills'; or to prepare students for their graduation assignments, 'Students work on practice-based research projects fitting their specialisation. Research-lecturers supervise

students during these projects. This is a prelude to graduation, where students work independently on a practice-based research project.

In the second time frame, across the university, the self-reports contained forty-two more quotes on research integration that benefited the educational programme, while seventeen fewer documents than in the first time frame were included. The findings also show that the rationales' content had changed; the 'why' of research integration was present more explicitly then, for example: 'Students use research to come to substantiated advice for method development' and 'The test of competence is a professional assignment, of which practical research is an important part motivated by a practical problem or a wish for improvement on the part of the external client. The research has a theoretical and practical component'. The prior focus on professional practice has become a dual focus with equal attention for the educational programme as a stakeholder in research integration.

Incorporating Research into the Curriculum for Students

The rationales' content serving students are complex, where many educational programmes argue about students in their rationales, but these argumentations are not usually related to 'research'. When educational programmes do integrate research to benefit students, they focus on research as a way for students to develop professionally, such as, 'in this context, conducting research and gaining research skills is one way to further professionalise lecturers' (teaching programme). Further, rationales for the student focus on them developing research skills or a critical research-minded attitude: 'We value the research skills of our students. [...] The first results of the research line are clearly visible. Current fourth-year students have developed research skills during every year of the educational programme and clearly benefit from this.'

In the second time frame, the student as a stakeholder to be benefited by research integration again was less prevalent than professional practice and the educational programme, but the faculty of health, the faculty of digital media and creative business, and the faculty of social sciences and law all showed an increase in student-focused rationales on research integration. The faculties of education and of sports and nutrition showed no change in the number of quotes on student rationales, but as described before, these faculties wrote down their rationales on research integration in separate documents instead of incorporating them in the audit documents. Two of the seven faculties showed

a slight decrease in the number of quotes on student-focused rationales. The faculty of technology focused their self-reported research integration efforts on the stakeholders' educational programme and professional practice. Yet one of their programmes did not report on the student as a stakeholder in the first period, but in the second they wrote: 'Research and knowledge allow our alumni to suggest innovative logistic solutions'. The faculty of business and economics showed a slight decrease in student-focused rationales and only a slight increase in rationales pertaining to the other stakeholders.

Incorporating Research into the Curriculum for Instrumental Reasons

Rationales that are 'instrumental' generally lack content related to the educational programme. Instrumental rationales are focused on accountability towards external frameworks or standards. Programmes incorporate research in line with Dutch national frameworks for professional education, or because it is an Amsterdam UAS policy, but do not add any other content to their argumentation. For example, 'Research ability belongs to the [Amsterdam] UAS standard and is an important area of action for the [Amsterdam] UAS in its education and research agenda 2011–2014'. Note that in the Netherlands, the general 'HBO standard' for bachelor's programmes provides the overarching framework for programme-specific national profiles (which were coded as professional practice), and respectively, universities and educational programmes are expected to provide their own relevant content, also related to the positioning of research. Another example refers to how the programme responded to an external audit: 'With the curriculum review, research has also been given a recognisable place in the curriculum'. Overall, instrumental rationales showed the most modest increase in prevalence.

Disciplinary Differences in the Changes of Curriculum Rationales on Research

This section considers the differences in reasoning on research in the rationales in the different faculties of Amsterdam UAS. An overview of the seven faculties conveys that six of them showed increases pertaining to argumentations for research serving professional practice and instrumental argumentations. The

faculty of sports and nutrition was the exception, with professional practice dropping from eleven to five quotes and instrumental from two to zero. The second time frame of the faculty of sports and nutrition was based on two documents, whereas the first was based on three documents. Similar to the faculty of education, for the faculty of sports and nutrition, the reflection documents did not address what happened at the faculty level with regard to rationales on research in education. In the second period, the reflection document of one of the two programmes that provided documents contained a description of the process of designing and implementing a dedicated research line throughout the bachelor's programme. This research line would replace some curriculum parts that were still embedded in the theoretical line at the time of writing the second document. This means that the change at the faculty level for sports and nutrition was not fully captured by the reflection documents as units of analysis.

The faculty of health stands out in the opposite direction, with an overall increase of twenty-one rationales on research in education. Their audit documents reported a strengthening of evidence-based practices in educational innovations throughout the faculty programmes, exemplified in the following quotes:

In 2014, the educational programme concluded, after analysing the situation, that the developments in healthcare required a substantive reorientation. The potential of interweaving education, research, and patient care was insufficiently exploited and students were not optimally supported in their learning and development.

The [Amsterdam] UAS and AMC worked closely together to develop 'Polyphysics', an academic workplace for the faculty and inter-professional care facilities. Here the health care professionals, lecturer-researchers, and students from the faculty of health work together on the care of rehabilitating patients (e.g. cardiac rehabilitation), linked to research and education (such as clinical lessons and clinometry).

A somewhat similar change in research rationales occurred with the faculty of technology. Just as the faculty of health, the faculty of technology already had a relatively strong emphasis on research compared to other vocational programmes. Professional practices in which research is incorporated could require educational programmes in which that research is incorporated, as exemplified by the quotes below.

Research abilities are firmly incorporated in the curriculum: evidence based practice (EBP) is extensively discussed in the propaedeutic phase, EBP concepts

are made explicit and processing assignments are included in the learning path, in which students have to develop a professional product – such as a guideline, care path or course.

The goals of the assignment on board are: the student can demonstrate to solve nautical/technical problems systematically and methodically, the student demonstrates in the research to work responsible with the methodology and the student demonstrates that he or she is able to conduct research specifically related to that particular ship.

The most remarkable change occurred with the faculty of education; that faculty went from thirty-eight to thirteen quotes on research serving professional practice in the second period. The explanation is that in the second period, a faculty-wide vision on research in education had been written, covering the vision on and content and assessment of research in education. Sixteen self-report audit documents all referred to this document and no longer included recurring statements on research in education, as was the case in the first period. This new faculty-wide vision document is not part of the documents chosen for this study, but not mentioning it would suggest a decrease in attention for research rationales with the faculty of education while that is not an accurate description of what happened.

The faculties of digital media and creative industries, of applied social sciences and law and of business and economics show less prominent changes, although all three show an overall increase in quotes while fewer documents were available for analysis in the second period. In the faculty of digital media and creative industries, one programme first only stated to integrate research in 'the research project'. In the second period, a much more coherent statement was made on 'research in all years and types of learning activities' and now a strengthening of the relation with the faculty knowledge centre is mentioned. In the faculties of digital media and creative industries and of applied social sciences and law, it was primarily the educational programme, followed by the student as a stakeholder, on whose behalf the increases in quotes were made. In applied social sciences and law, one of the programmes extended 'Research skills help to further develop professional practice and contribute to reflective skills in daily professional action of the student' to

Research helps students to develop an inquiring, curious, open attitude. They learn to zoom out from N = 1, individual client level, to think systematically, to

analyse, problematise, and to handle sources and information. This is necessary to execute the job as a whole. This allows the professional to firmly position himself and solidify his profession in a dynamic and complex society.

The faculty of business and economics already had relatively high numbers of quotes on professional practice and educational programme in the first period, and in the second period, three instrumental rationales for integrating research in education were added, but the overall distribution of quotes over the four stakeholders did not show major changes in this faculty. One of the programmes of business and economics states in the second self-report that, 'extra research classes were offered to students who had little research in their curriculum and to support them in writing their thesis.' The 'work-in-progress' aspect of research integration in this faculty is highlighted by a reflective quote: 'Students in year 1 and 2 still experience research as something that needs to be done (to be able to finish) instead of as a means to provide valid advice or process improvement.'

Returning to the curriculum perspectives, student-centred teaching can be, unsurprisingly, recognised in curriculum rationales on the student as stakeholder: 'As a result, the student develops the research capacity to develop concrete solutions for metropolitan societal issues and learns to reflect on his own actions'. Sometimes, the formulation is quite broad, such as: 'The practice-orientated education of the program is aimed at stimulating the curiosity of students from the first period'. The structure and instruments curriculum design perspective was recognisable in the rationales for the educational programme as stakeholder. For example, 'The curriculum works towards the graduation programme. Research (task competences, the regulatory cycle of our profile) is anchored in the project line from the second semester of the propaedeutic phase and students write a "thesis light" during their internship'.

The knowledge and content strand can be found across the four stakeholders. For professional practice:

Expertise is still important. But cross-curricular competencies, such as research and reflective skills, problem-solving skills, critical thinking, (inter-disciplinary) collaboration and communication are becoming increasingly important in order to function in a future-oriented way. These competencies are also important for the productivity and innovation capacity of the construction industry. We, therefore, find it important that students gain experience with practice-oriented research and are able to critically evaluate, but also systematically examine

(developments in) professional practice. Their actions (professional attitude) must always be based on analyses. This gives depth to their craftsmanship, sharpens reflective and cognitive skills and enables students and graduates to contribute to innovations in professional practice.

For the educational programme:

That means that we are involved with our students, we are person-oriented and we are aware of our pedagogical and educational task. This involves an investigative attitude on several levels: towards one's own functioning, the development of the student and current developments in the professional field.

For the student:

The basic principle of the experiments is that a student can best develop in an environment in which education, research and the professional fieldwork together on challenges from practice. In this ideal learning environment, the student, teacher, researcher and professional work inter-disciplinary and have control over their own learning process.

Instrumental:

At Amsterdam University of Applied Sciences, more and more structural attention is being paid to knowledge development in and with practice. In the institutional plan of Amsterdam University of Applied Sciences, Amsterdam UAS formulates knowledge development in and with practice as an important spearhead. Research is stimulated through the lectorates, but also through new positions as a university researcher in training.

The growing attention for the educational programme as a stakeholder to be served by research integration matches the attention for the research-teaching nexus in the higher-education literature (see also: Hénard & Roseveare, 2012). The clearest finding is the increase in attention for the integration of research, given the higher numbers of quotes in the second time period in fewer documents. The quotes also show how the different stakeholders' interests sometimes are combined in single statements. For example, in the educational programme quote above, the students' interests are mentioned, and refers to the role of an investigative attitude in fulfilling the pedagogical and educational task. Of course, the self-reports provide a rather abstract overview of what is deemed important for the educational programme. The directions the curriculum

rationales offer are explicated in learning outcomes or learning goals for the educational units at learning line, module, course and/or class levels.

Overall, the programmes do appear to see the possibilities opening up by viewing learning as active, social and contextual and more dynamic views on professionalism are being developed (Griffioen, 2019), thereby extending the dynamics of research in the curriculum.

To Conclude

The quantitative increase in numbers of quotes on research in education in programme self-reports and the development of documents dedicated solely to research in education in two faculties suggests the initiation of an institution wide shift towards assigning research a larger role in vocational education and professional practice. Several qualitative changes towards strengthening and nuancing research rationales appear visible, though relating them to other documents and shop-floor practices would be required to offer a full view on each programme rationale and the implementation in the curriculum.

What the changes in rationales on research–education connections in these self-reports offer is space for further changes at most of the multiple layers mentioned in Chapter 1: department level, in curricula or research programmes, in modules or research projects and in lessons or research products educational or research teams. As the changes in language in self-reports open up space for further discussion of the rationales for research in education, it helps change agents in educational and research teams to further develop these rationales and their follow-up in learning goals (Chapter 6) and shop floor practices. As more people discuss research–education connections and collaborate on designing and implementing them, a knowledge-base is built on what research–education connections serve agreed upon purposes, serving the students, professional practice, educational programme quality and/or national standards. The data described in this chapter indicate an awareness of and desire to work on purposeful research–education connections, as the change programme intended to do. As the number of change agents increased over the years (Chapters 1 and 2), space opened up for the next phases in the ADKAR model for change, the construction of knowledge and ability (Hiat, 2018).

Positioning research as a core aspect of professional practice as the Dutch government did requires professionals in education to reconsider their curriculum rationales and design in serving the changing professional practices

(Brew & Cahir, 2014; Van den Akker, 2003, 2010). Examples of other push towards reconsideration of rationales and of how higher education could or should serve its purpose can be read in Barnett (2009, 2012) and Young (2014). The acknowledgement of the complexity of the issues societies over the world face and of global issues could be argued to add complexity to the connection of different types of knowledge in curricula of bachelor programmes (Short, 2002). For example, beyond knowledge on citizenship, disciplinary knowledge, research knowledge and educational knowledge, professionals in education and the professionals they educate may need knowledge on transdisciplinary, complex collaboration. In line with the conceptualisation of research as a personal and possibly transformational journey (Brew, 2001), research can simultaneously be an individual and collective learning process. One step further, viewing learning through this particular research lens Brew offers, framing learning in a bachelor programme as researching one's possible purpose in life might be a useful perspective in considering research–education connections in curriculum rationales and development. Of course, this should be balanced with other relevant conceptualisations and types of research (that are part of the profession) and research–education connections. A growing number of researchers, educators and others involved is working on constructing knowledge on curriculum development and research–education connections (e.g. Anakin, Spronken-Smith, Healey, & Vajoczki, 2017; Bovill & Woolmer, 2018; Brew, 1999; Cao et al., 2021; Griffioen et al., 2019; Turner et al., 2020). As the efforts increase, we step by step gain a better understanding of creating transformational learning as envisioned in curriculum rationales.

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