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Consistency in study programme planning and the complexity of curriculum logics

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ABSTRACT

Drawing on the concepts of consistency, this study contributes to the discussion of study programme plans and the links between curriculum elements. The main argument is that a universal requirement of consistency is taken for granted in study programme planning, even though critics have noted a need for closer scrutiny and debate. The literature attests that the consistency of programme plans between learning activities, defined learning outcomes and assessments are important for student learning. However, newer trends in education may require a new understanding of how learning environments work and alter our understanding of curriculum in higher education. Drawing on a qualitative analysis, the study displays varied curriculum logics in education planning. The findings indicate that we should expect the varying curriculum elements at play in study programme plans to be overlapping, competing and even contradicting, hence challenging our ideas of the perfect consistent curriculum.

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Introduction

The quality of higher education practices is known to depend on the productive relations between the curricular elements in the study programme and the course design. Here, pedagogical approaches and activities should be 'constructively aligned' with the intended learning objectives and outcomes, assignments and assessments to ensure that the elements support each other and move in the same direction (Biggs and Tang 2011).

The employment of well known principles in curriculum design – which are based on clearly defined intended outcomes and assessment criteria – to enhance student engagement and motivation has been found to improve student experiences and grades (Larkin and Richardson 2013; Reaburn, Muldoon, and Bookallil 2009; Wang, Shannon, and Ross 2013). Research has also shown that the internal coherence in a course between learning activities, anticipated outcomes and assessment forms is crucial for the quality of student learning (Ashwin et al. 2015; Biggs and Tang 2011; Meyers and Nulty 2009). In line with

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this contemporary ideas of curriculum planning emphasise the definitions of what students *can do* after completing a programme or course as a way to establish consistency in curriculum design (Ashwin et al. 2015; Prøitz et al. 2017; Young 2003; Young and Muller 2015).

However, newer trends in teaching and learning approaches challenge our understanding of how the various elements of the learning environment may work (Elken et al. 2020). Further, questions regarding learning outcomes and the concepts of consistency have also been raised. From a critical stance, it has been argued that too narrow and detailed learning outcomes may undermine the necessary flexibility to adjust activities to students' emerging needs, hence preventing unplanned but productive forms of engagement from being recognised (Allan 1996; Prøitz 2010; Prøitz et al. 2017). In addition, the principles of alignment in curriculum design emphasise a linear way of thinking and practices of complexity reduction that may risk being oppressive to student learning (Gough 2013). Concerns have also been raised about the concepts used to describe consistency, such as constructive alignment and coherence. In particular, coherence is underconceptualised and often treated as a universal good and inherent characteristic in education policy and professional development programmes for teachers (Hammerness 2006; Honig and Hatch 2004). A recent systematic review on coherence identifies how the concept is used inconsistently as a critical feature in study programmes; calls have been made for more studies that can clarify our understanding of what there should be coherence about, among whom and how this may be achieved (Lindvall and Ryve 2019).

Curriculum theorists have made explicit calls to emphasise understanding curriculum development and change as influenced by external powers and controls. Referring to the developments of mass higher education and emergence of a universal shift towards performativity 20 years ago, Barnett noted a '… need to situate curricula amid the wider social and even global context' (2000, 257). Lundgren (2006) likewise pointed towards responses to a globalised world, changes in the economy and production that call for consideration and critical concepts for understanding how curricula are formed and function today. Even though there has been a recent growth in studies on curriculum in higher education (cf. Annala, Lindén, and Mäkinen 2016; Barnett 2000; Shay 2011; Yates and Millar 2016), there is still limited research on the relations between knowledge and curriculum in higher education (Ashwin 2014). In particular, there are fewer studies examining the issues of curriculum in programme and course design and the relations between knowledge, curriculum, teaching and learning, assessment and student understanding (Tight 2012). Consequently, an investigation of how curriculum elements are organised and intended to work together under different curriculum logics seem to be appropriate.

The aim of the current paper is to discuss issues of consistency I have encountered in studies on learning outcome-oriented study programmes[1] in higher education (Friedrich, Prøitz, and Stensaker 2016; Nerland and Prøitz 2018; Prøitz 2010; Prøitz et al. 2017; Prøitz, Wittek, and de Lange 2020). In particular, the study is inspired by interview studies showing that the staff members in higher education express a magnitude of intentions for study programme change and that a multitude of interconnected aspects influence study programme design (Nerland and Prøitz 2018; Prøitz, Wittek, and de Lange 2020). The overall argument is that what seems to be a universal requirement of consistency is taken for granted in study programme planning and needs closer scrutiny

and debate. As such, the present paper builds on and aims to further the discussions on the aspect of consistency in study programme design. Drawing on a set of qualitative data, it is suggested that because of the contemporary developments of higher education as being characterised by streamlining and standardisation in power structures and controls of higher education – as well as in its specialisation to meet the varied needs[2] of a diverse student population – it is necessary to zoom in on the curriculum logics at play in learning outcome-oriented higher education systems. Based on the analysis of study programme planning in biology, nursing, law and organisation and management programmes, the current article discusses the need for a diverse set of conceptions of consistency in study programme planning.

The present paper is structured into four sections. The first section provides the analytical framework of the study. Then, the method and data material are presented in the second section. In the third section, the analysis and discussion of the findings are presented, which is followed by the fourth section that presents the concluding remarks.

Analytical concepts of consistency: alignment, congruence and coherence

The analytical framework of the paper is anchored in the well-known concepts of constructive alignment (Biggs and Tang 2011), curriculum congruence (Ashwin et al. 2015) and curriculum coherence (Muller 2009).[3] These concepts are often used interchangeably in the literature despite them referring to quite different, although overlapping, aspects of curriculum planning and programme design. In the study, the concepts are used to complement each other for a broader consideration of how curriculum elements in study programmes are organised to meet student needs.

Alignment – linking study design, activities and evaluation

Alignment highlights the importance of clarifying the intended learning outcomes, ensuring that activities, assignments and assessments are well aligned with these outcomes (Biggs and Tang 2011). Biggs and Tang's (2011) concept of 'constructive alignment' – the linking of study design, learning activities and their evaluation – is often emphasised as a key way to make the different dimensions and phases in the academic plan/study programme consistent. According to Biggs, the focal point of the model for constructive alignment is '… whether the teacher can operationalise desirably high levels of understanding in ways that denote performances that can be elicited by teaching/learning activities, and that can be assessed authentically' (1996, 360). The model emphasises the function of the curriculum 'or unit objectives' to be communicated clearly in terms of content-specific levels of understanding, which imply appropriate performances. However, the teaching methods and assessments 'require students to be placed in contexts that will likely elicit those performances, and the assessment tasks address those same performances' (Biggs 1996, 360). Constructive alignment includes the dimensions of how the interaction between teachers and students can ideally take place, which should be defined by clear curriculum statements and the social climate of the learning process.

Furthermore, constructive alignment has been criticised as a rationalistic perspective on how curricula are to be developed (Ashwin et al. 2015). In curriculum design, constructive alignment is often used to propose a 'logical model' for curriculum development; this is followed by assumptions that the learning content is known in advance and that it is quite straightforward to design a curriculum that matches it.

Congruence – interconnectedness of education components

Alignment has been explained as the ways in which instructors teach and assess, and this must be in line with what instructors want students to learn (Ashwin et al. 2015). As an alternative, the idea of alignment has been further developed towards a notion of congruence (Entwistle 2009; Hounsell and Hounsell 2007). Congruence explains the complexity and interconnectedness in relations between the aims, teaching methods and assessment over time (Entwistle 2009). Congruence draws attention to other components, such as the students' backgrounds and aspirations, course organisation and management, the curriculum aims, scope and structure and learning support provided. Even though congruence builds on Bigg's work, Entwistle (2007, 10) emphasised how 'the term "congruence" was chosen to avoid the implied linearity of the word "alignment"'. This approach includes a magnitude of relations and vertical and horizontal dimensions that form the activities of student programmes.

Coherence in knowledge organisation

Another concept for examining curriculum and programme design is related to the inner principles of coherence for knowledge organisation. Here, a distinction is made between the designs that take the cumulative structure of the discipline and its scientific concepts as its organising structure and those designs that emphasise the relation to work practices and the relevance of activities for the students' prospective professional contexts (Muller 2009). The first type of design emphasises conceptual coherence, while the second emphasises contextual coherence (Muller 2009). A curriculum with *conceptual coherence* is typically characterised as involving vertically ordered, sequential content and as having a strong hierarchy of abstraction and conceptual difficulty. In contrast, *contextual coherence* is characterised as involving various segments that are well connected but less vertical and sequential: 'each segment is adequate to a context sufficient to a purpose' (Muller 2009, 216). Further, different disciplines require different degrees of conceptual coherence; here, the more conceptually coherent the curriculum is, the more formal its set of curriculum requirements will be. The more segmented the curriculum, the less sequence matters, but the more contextual coherence to context matters; for example, external requirements might be of greater interest in certain contexts. It is also relevant to note that the greater the conceptual coherence, 'the clearer the knowledge signpost must be, both illustratively and evaluatively' (Muller 2009, 216). It is likely that the degrees of conceptual and conceptual curriculum coherence will influence what is considered important in study programme designs and for structuring the study activities, as well as in the choice of the types of assessment and examinations.

The current paper lies within the field of curriculum studies. A common misunderstanding in higher education restricts curriculum studies to curricular documents

(Prøitz, Wittek, and de Lange 2020). Therefore, it is essential to clarify that curriculum studies entails studying the 'relations between knowledge, curriculum, teaching and learning, assessment and the understandings of students developed through their engagement with higher education programmes' (Ashwin 2014, XX). The concepts of alignment in study design, congruence as the interconnectedness of education components and coherence in knowledge organisation provide a rich and multidimensional analytical framework for a broader analysis of the varied *logic of curriculum* at play. Here, logic is used by leaning on Bernstein's (2000) work on the process of the recontextualisation of knowledge into the various logics of curriculum and Maton's (2014) definition of such logic as 'the different underlying principles legitimating different curriculum choices'. Shay (2011) explained this further by describing academics as recontextualising agents who make choices about what is educational knowledge. Shay also pointed out that curriculum represented by handbook entries, syllabi and examination papers all involve choices about what is legitimate 'object' of study, the ordering of content and criteria for evaluation (2014, 317). As such, different logics, in terms of their reasoning, principles or criteria faculty employed in study programme organisation and how the curricular elements are related to each other, may reflect various approaches to the design of studies in higher education. The choices made by academics as recontextualising agents in study programme planning may cultivate one of these logics or combine them. By analysing the type of curricular logics at play, it is possible to highlight issues of consistency and the tensions between curriculum elements that may arise if and when different logics simultaneously are at play.

Method

The current study draws on an analysis of qualitative data material from four study programmes in Norway and combines a document analysis (Bowen 2009) of study programme plans with an analysis of interviews with study programme coordinators (Kvale and Brinkmann 2007). Combining document and interview material allows for identifying the ways of organising the elements in programme plans expressed in curriculum documents, along with the reasoning and experiences of such efforts described in interviews with study programme coordinators. Together, the document and interview data provide grounds for an analysis of intentions and plans for education practice and the reasoning behind such intentions.

The selection of the four study programmes can be characterised as information-oriented (Flyvbjerg 2011) and purposeful sampling (Gall, Borg, and Gall 1996), here selected on the basis that they had made quite recent revisions of their programme plans (Nerland and Prøitz 2018). For a broader scope of analysis, they were also selected because they were different studies – biology, programming, law and organisation and management – at four different higher education institutions: two universities and two university colleges (see Table 1). The selection of the study programmes represents a variation of studies. The data material includes interviews with six study programme coordinators and a document analysis of their programme plans. The informants were recruited by e-mail and informed about the study and their rights as voluntary informants. The informants gave written consent to participate. The Norwegian Data Protection Official for Research ethics approved the notification scheme for the study. All the

Table 1. Overview of the selected study programmes, data material and informants.

Type of higher education institution (HEI)	Study programme	Data material[a]
University College	Nursing education/bachelor	Interview with one programme coordinator Programme plan
University College	Organisation and management/ bachelor	Interview with one programme coordinator Programme plan
University	Biology/master	Interview with two programme leaders Programme plan
University	Law, five-year integrated master programme	Interview with two course coordinators Programme plan

[a]*Note*: The title and responsibilities of the responsible person for the different programmes varied depending on the type of study, institution and how they have organised themselves. In the current study, the aim was for people with an overview of the study in question and who could provide rich information about the programme's structural, practical and educational issues.

interviews were conducted with the support of a thematic interview guide; they were audio recorded and transcribed verbatim.

The study programme documents were read several times in a process of superficial examination, which was followed by a thorough examination and in-depth reading (Bowen 2009). The systematic analytical approach was conducted as a thematic analysis, as inspired by (Braun and Clarke 2006, 2020). Three focal lenses were activated by searching for answers to the following three questions in the data material each with reference to the three analytical concepts of consistency: (1) How are the study design, activities and evaluations linked (constructive alignment)? (2) What study elements are interconnected (congruence)? (3) How is knowledge organised (coherence)? The overarching themes and subthemes of the material were identified in the procedure of 'asking' and searching for answers in the data material (the documents and interview transcripts). The thematic analysis of the documents identified the communicated study programme design and structure and its elements and activities, including assessment. The thematic analysis of the interview material identified the informants' intention and reasoning about the most recent developments and revisions of the study programme.

Coherence in knowledge organisation

Led by the focal question of *how knowledge is organised in the courses*, the analysis of the study programme plans showed that they were similar along several dimensions, such as in the descriptions of what the study was about, aims, learning outcomes and/or the qualifications. The programmes were also similar in their descriptions of their structure, in the number of study years, semesters and credits and descriptions or illustrations of the structure and chronology of the study trajectories; this includes the descriptions of what courses or modules students are required to pass and move to the next level, what courses are compulsory and what courses are elective. They were also clearly framed by the nationally defined and regulated standards for the bachelor's and master's cycle of 180 and 120 credits, respectively (one study

year equals 60 credits) based on the recommendations of the European Credit Transfer System (ECTS).[4]

Apart from these overall features, the studies are separated along several dimensions. An obvious difference relates to the degree levels of the programmes, which vary from the full five-year integrated master's programme (law), a master's programme building on the bachelor's level of required courses (biology), a bachelor's degree with an opportunity for a trainee period and studying at the master's level (organisation and management) and a bachelor's degree leading towards certified nurse qualifications (see Table 2).

Law and nursing are similar in their strictly defined study trajectories, both with few elective courses. The students follow a trajectory of courses and assessments that must be passed to enter the next level. This is different from organisation and management and biology; these studies have a set of requirements for compulsory courses, but the studies also consist of elective courses. Biology has a range of elective courses the students can select from to build towards specialisation, and the number and complexity of the courses seem to require a support structure of packages of combinations of courses. Students are also required to select courses in dialogue with their supervisors. The organisation and management programme plan emphasises the multidisciplinarity of the programme in a range of compulsory courses, as well as several elective courses. It is strongly highlighted that the studies also contain the components of practice-related courses, including a trainee period in the fifth semester. Thus, the structure and organisation of the study programmes display different ways of organising fields of knowledge into study components of varied sizes and paces. There are also variations in the combinations of more disciplinary and practice-oriented components, as well as compulsory and elective courses.

Further, this difference is underscored by the aims of the programmes (see Table 3), which vary in terms of whether the study provides education leading towards a full profession, such as with lawyers and nurses, where acquiring knowledge and skills for qualification of the professional practitioner are highlighted. This contrasts the description of

Table 2. Overview of the study programmes.

	Law	Biology	Organisation	Nursing
Degree	Master	Master	Bachelor	Bachelor
Structure	5 years/300 credits	[a]2 years/120 credits	3 years/180 credits	3 years/180 credits
Sequences of study	Five 60-credit components spread out over the five years of the study. The last year has an elective component of 30-credit specialisation and a smaller master's thesis or a 60-credit master's thesis. The last year can be partially or fully studied abroad.	Two 60-credit (30/30 compulsory/elective) components and a 60-credit research project component. Two 'packages' of elective courses are presented consisting of combinations of 10-credit courses spread out over the first, second and third semesters. Elective courses selected in dialogue with supervisor.	Ten compulsory components spread out over six semesters (from 20 to 7.5 credits), six elective components (from 30/15 to 1.5 credits). The fourth semester can be studied abroad. The fifth semester can be a trainee period.	Four compulsory components, one component of 90 credits in practice (5×10 weeks of 40 h of supervised practice)

[a]Admission to this study requires a bachelor's degree consistent with the specified courses of relevance for aquaculture biology.

Table 3. Overview of the defined aims in the study programme plans.

	Law	Biology	Organisation	Nursing
Aim of the study (extracts of plans)[a]	The aim of the master's programme in law is to educate lawyers who have knowledge and skills that satisfy the demands that society places on ethically and professionally sound professional legal practice. Candidates of the five-year study will achieve knowledge, skills and attitudes that allow them to hold all public and private positions that require qualified lawyers. Candidates should be able to identify and analyse legal issues, relate independently and critically to the judicial system, and have a historical and international perspective on the court.	The goal of the aquaculture biology specialisation is to provide a theoretical basis and practical experience for understanding the biological principles in aquatic food production. Aquaculture is a diverse discipline, covering topics such as molecular biology, chemistry, nutrition and the biology, physiology and behaviour of fish. The practical work of aquaculture takes place in the laboratory, the hatchery or the fish farm. The courses in this specialisation provide insight into the role of aquaculture in global food production and the knowledge and skills needed for its further development.	The education provides a broad and thorough introduction to key disciplines linked to work with management, organisation and personnel issues in modern working life. Insights from social science, such as sociology, political science and psychology, with law and economics. Innovation and entrepreneurship are an integral part of the study. Through the multidisciplinary approach, you will acquire the knowledge, analytical skills and attitudes that enable you to work with operations, strategy and development in private, public and ideal organisations.	The aim of the education programme is to educate nurses who are skilled practitioners and who contribute with knowledge-based practice in today's and tomorrow's healthcare systems. Nurses are central to the new thinking and development of health services for the benefit of patients and relatives. Sustainability and innovation are also part of the university's strategy.

[a]Author's translation from Norwegian to English.

biology and organisation and management, where the aims particularly highlight multi-theoretical and practical 'insights'. Except from law the programmes also highlight the candidates' ability to acquire knowledge and contribute to the development of their fields.

Alignment – linking study design, activities and evaluation

Led by the focal question of *how the study design, activities and evaluation are linked*, the analysis shows that all the programme plans had sections called 'Teaching and learning' or 'Teaching methods'. However, how this was presented varied. The study plans of organisation and management, nursing and biology had descriptive texts about the teaching and learning methods and assessment: in general, ambitions for variations in teaching seemed to be a key word, which could be attributed to recent trends in education but also the fact that these studies were oriented towards student-centred approaches. The teaching and learning methods described in the programme plans highlight offering varied teaching and learning activities, ranging from lectures to group work. In particular, the teamwork and methods that activate students were emphasised in all the programmes. The study plans also referred to the individual courses regarding providing details about the different methods of teaching and assessment. This indicates the

status of the programme plan as the overarching curriculum description, while more details about the teaching and assessment of the individual course were provided in the separate course descriptions (plans). However, this varied between programmes. The programme plan of law elaborated in more detail about these issues, explicitly mentioning the issue of alignment: 'The study is organised to get the best possible connection between the knowledge and skills that the student will acquire, and the teaching that is given, the exercises given throughout the study and the closing exams'. In law, sections on 'Learning and teaching', 'Student activities', 'The learning environment', 'Teaching quality assurance' and 'Assessments' described these issues in far more detail than the other studies. This can be partly seen in how the five-year study was described without references to other course descriptions. Another aspect of the law study programme that stands out compared with the other plans was the explicit descriptions of the role and expectations of students as highly active and responsible actors:

> Students will acquire knowledge through their own activity and interaction with fellow students and faculty employees. There are high demands for active participation from the students in the teaching, and in addition to volunteer exercises in a number of compulsory oral and written elements that must be completed in order to get to the exam. The examinations are varied and reflect the goals of the study.

Assessments were also described as varied in the programme plans, and as such, they indirectly reflected the variations of the teaching and learning methods but without making this very explicit; this was also true for the law programme, even though connections between teaching and learning and assessments and content were mentioned. The use of assignments/exercises and course exams that must be passed to move to the next level were a similar feature across the four programmes, but this was described more as a structural requirement of the study trajectory rather than as a point for explicating, for example, progress in learning of the content, the linking of study elements, components, activities or content. In several ways, varied types of assessments (both formative and summative) seemed to be where the 'alignment' was made explicit in the programme plans but mostly indirectly – as an arena where the varied elements and activities would meet and content would be realised, displayed and judged to enter the next level. These observations raise the question of the functional division of labour in curriculum design at the programme and course levels.

Congruence – complex systems of educational elements

Because the concept of congruence emphasises that education elements such as aims, teaching methods and assessment form a complex system of interconnectedness that can change over time, the analysis of the focal question of *what study elements are interconnected* focused mostly on the informants' reasoning and intentions about the most recent study programme changes. The analysis of the interview material showed that although there was some resemblance at the surface level, there were variations in the approaches to curriculum planning.

In law, the programme coordinator emphasised that the study is highly traditional and that the knowledge content to be learned was very much the same historically and across the HEIs offering law studies, so what could be changed and improved was mainly how they taught the content. They had a recent revision of the fourth year of the study; this

change was initiated by the introduction of a new law, but also was driven by a notion among the teachers that it was time for a programme revision. The informant described how the situation opened up discussions about the consistency between courses and how to approach courses differently. The informant also implied that their discussions were anchored in wanting to do something new as a change from their many years of lecturing. A central aspect of the change was to integrate the law thematic in activities throughout the year, when relevant. They had one final home exam and a final written examination at the university. Throughout the year, students could do four voluntary assignments on which they could get written feedback. They also had a compulsory oral presentation with feedback. When asked why they had chosen this design, the informant explained that the students become good at what they train for.

In biology, the informants described how they had reorganised the study programme several years ago. The main reason for this change was to make the study programme more attuned to student needs and support their learning; the change initiative started because of rising dropout rates. The informant described how the situation made them discuss whether they should organise the programme in thematic groups (e.g. organisms) or in research questions; it was decided that they would navigate this by research questions. The informants described how this idea, although very explicit, was also challenging in how it required the teachers to ensure connections between courses to make it work for the students as pointed out by one of the informants in biology:

> I think that the way of organising by organisms is a way of teaching that is teacher focused, while the way that we work now is more problem focused and more suitable for the students – but it can only function if the teachers talk together across groups of organisms and that is a challenge.

The informants also described how they had reorganised the department to better coordinate teaching and strengthen discussions between the teachers about what they taught and what they emphasised in each course. They also chose to place the responsibilities for the basic biology courses across the five subject groups rather than within them, as explained by one of the informants in biology: 'These are measures we have done first of all to connect the activities together in a better way. To get stronger collegial collaboration in courses that we have'.

In nursing, when asked about what defined the study programme, the informant emphasised the hierarchical structure of the varied curriculum plans and documents. She explained how nursing in Norway is regulated by a national framework of guidelines, but also how nursing education was accused of being different throughout the country and how efforts had been informally taken between programme leaders to define an agreed-upon set of qualifications common for all nursing studies; this was intended as a supplement to the national guidelines and regulations. The informant elaborated on the document structure of the study programme as a hierarchy consisting of a national framework on top – a set of informal but guiding qualifications – then the study programme plan and below that a range of course plans:

> It has been given to you and the curriculum is a concretisation of the course description, and the course description is those that are formally approved by the study committee, which is part of the quality system that we have.

Her description of a seemingly straightforward line of plans going from the top down was contradicted by her description of how they actually work:

> … so the curriculum / study plan is the one that is the top and it is weird to describe it that way as it's a little messy, because we actually go from the bottom up, but there are links between them.

This can be interpreted as reflecting how several logics of curriculum are at play, for example, a top-down and formal government-regulated and qualifications-oriented logic meeting a teacher-interpreted and professionally oriented bottom-up approach.

When asked about the recent revisions, the informant in nursing explained these as arising from student difficulties in understanding the structure of the study programme. They had changed the names of the courses to make the progression of the study more explicit. They had also explicated and standardised the communication of the elements of the courses in the programme plan because the students seemed confused and did not know the course descriptions. They decided that the learning outcomes' descriptions should be included in the course description as a part of the curriculum to avoid differences in the description that could frustrate students in the learning process.

Other reasons for the change were to follow up on the theme linked to societal changes and requirements, such as patient security, interprofessional collaboration and innovation (with reference to a recent white paper amended by the parliament) and adjustments made because of a more multicultural Norwegian society and recent immigration.

In organisation and management, the informant described an ongoing revision. There were two main reasons for these revisions. One revision was making the courses smaller, from 15 to 7.5 credits; partly, this was in line with a general development in organisation and management across HEIs in Norway, but it was also done to adjust the study to other studies in the department, hence enabling more collaboration across courses. Another reason was to redistribute the fiscal resources from the bachelor's study to develop a five-year master's study programme. The informant also added yet another reason for student feedback about courses being very large and extensive. The informant also added that student feedback in student evaluations motivated discussions about how they teach, but the informant dismissed that this had anything to do with issues of consistency and referred to the student quality surveys where students report good connections between courses. The issues raised by the students were related to feedback and how they wanted individual feedback rather than peer feedback in groups. This was found to be a challenge for the teachers because the study has many students, and their way of making it work has been to connect the activities and elements of the course together in a mix of lectures, required assignments assessed by the teacher in a pass-or-fail format and peer feedback.

Discussion and concluding remarks

The analysis of the study programme plans and interviews with programme coordinators through the three conceptual lenses of alignment, congruence and coherence has enabled the identification of structural and thematic 'surface similarities'. In several ways, these similarities show the elements of alignment, clarifying the objectives and defining the

activities and assessments for formal purposes. The present study has also identified the differences along obvious dimensions, such as degrees, and those related to the particular characteristics of the study programmes and the programme coordinators' reasoning for change.

Alignment and the 'indirect template' in study programme planning

The similarities observed in the study programme plans reflect the existence of standard templates that define the content and structure of the study programme plans. This is not necessarily an actual template but an indirect template defined by national and international regulations and guidelines for the structuring and organisation of study programmes in higher education, for example, by qualifications frameworks and defined units of credits. The literature on qualification frameworks and international developments of standardisation in higher education show that there is a question of whether these 'indirect templates' contribute to the development of productive and necessary flexibilities in the connections between the central elements of teaching and learning, perhaps even more so when the complexity increases with efforts to meet student needs. The analysis illustrates how formal requirements and structure and organisation shape how study elements are connected in the trajectories of courses, assessments passed and credits acquired. In contrast, the analysis identified few descriptions explicitly pointing towards ideas of alignment, congruence or coherence for teaching and learning. There is a question of whether such matters are perhaps more strongly described in course plans and if so this confirms earlier studies of division of functionality between curriculum plans at the programme and course levels (c f. Prøitz et al. 2017). The analysed programme plans provide descriptions of teaching and learning that parallel the identified descriptions of assessments, providing opportunities to explicate connections between defined learning outcomes, teaching and learning and assessment that are seldom used. Several of the informants referred to how students have challenges in understanding the study, and efforts have been made to clarify structures or study trajectories; however, most of these seem to be taken at the course level. This finding shows how clarifying these issues for students is underused and has been left to the course level to solve.

Congruence and influencers in study programme planning

The interviews display numerous variations in the reasoning and logic behind the curriculum design and change. The analysis shows how pedagogical ideas are seldom the main factor driving the development of new designs; rather, student dropouts, reports on troublesome student evaluations or revisions because of societal developments initiate change. Pedagogical ideas, however, support and form the foundation of the arguments and logics for change. The interview material illustrates how curriculum congruence (Ashwin et al. 2015; Entwistle 2007, 2009) emerges in a multitude of interconnected ways, influencing the curriculum design and logic communicated through programme and course plans. This can be seen in how a range of aspects related to the organisation of departments, a web of curriculum plans for different education levels and purposes, organisation of teachers with relevant knowledge, collaboration and communication

between teachers, the needs of students, dropout rates and evaluations form a conglomerate of issues relevant for the totality of the study programme design. This observation highlights how education planning rests on a great variability of influencers: national, regional and local coordinators and the individual teacher, as well as students. This finding challenges the idea of the perfectly consistent curriculum because programme plans are developed to solve a range of issues that are characteristic for higher education and that are not necessarily compatible but still are required to be covered.

Student needs and curriculum coherence

Muller (2009) warned against becoming too contextually oriented in studies where there are a traditionally strong conceptual coherency, for example, by the use of designs that may fragment the conceptual spine of the discipline. He exemplified this with an ongoing debate about the tensions connected to the use of problem-based learning in medicine studies and how contextual coherence can lead to breaches in students' conceptual knowledge within disciplines. The definition of conceptual coherence provided by Muller (2009) involved vertically ordered, sequential content, a strong hierarchy of abstraction and conceptual difficulty, while contextual coherence was defined by various well-connected segments but that are less vertical and sequential, where each segment is adequate to a context that is sufficient to a purpose. Looking at the studies analysed and taking the most vertically ordered ones, with a hierarchy of abstraction and vertically sequenced, we find law and nursing with their strictly defined study trajectories and very few elective opportunities and requirements for passing before moving on to the next level. This is interesting because both studies are education programmes for professional qualification with strong contextual dependency. The case of biology seems to challenge Muller's warning about breeching what could be considered to have been a more conceptual coherent study through the redesign of the programme structure into a more contextual coherence approach – one that is characterised by a range of elective courses. The change was legitimised by an increase in dropouts and the need for more student-centred approaches combined with structures based on higher degrees of teacher collaboration and communication. Apart from the aspect of teacher collaboration, the change resembles Muller's PBL example in medicine in terms of making the research problem define the programme structure rather than the thematic and challenging the logic of traditional teaching to meet student needs. At the same time, this structure requires course leadership and support for the students selecting courses, perhaps illustrating how such initiatives can create new challenges in how to organise knowledge to enhance student learning – balancing these curriculum logics is potentially one of the greatest challenges in contemporary education.

Concluding remarks

The current study has departed from an argument for closer analysis and scrutiny of the taken for granted premise of consistency in curriculum planning in higher education. The analysis displays how varied approaches to study programme consistency illuminate the different logics of curriculum at play in education planning, here focused on through the theoretical concepts of alignment, congruence and coherence. The requirement of

balancing highly complex curriculum logics seems to go beyond and exceed the issue of constructive alignment, making a call for a multidimensional analysis and theorising about curriculum planning in higher education. The present study has illuminated how a complex set of factors influences what eventually becomes the intended study programme. Factors of stronger influence in contemporary higher education seem to be the indirect templates of international and national regulations and guidelines, qualifications frameworks and credit systems. These templates provide outer structures and frames of reference that seem to work well with the ideas of constructive alignment. Another factor with a high impact on the curriculum logic is student needs, which are mostly defined through student evaluation and dropout rates; this element adds complexity and nonlinearity recognisable through the aspects of curriculum congruence and curriculum coherence. The current study displays how different conceptions of consistency illuminate the varied curriculum logics that simultaneously seem to be in action within and between study programme plans. An implication of this observation is that we can expect curriculum elements in study programme plans to consist of overlapping, competing and even contradicting elements that challenge our ideas of the perfectly consistent curriculum.

Notes

1. Here, study programme is understood as an academic programme 'defined as any combination of courses and/or requirements leading to a degree or certificate, or to a major, co-major, minor or academic track and/or concentration' (Academic programme definitions Temple University, http://www.temple.edu/provost/aaair/documents/academic-programs/academic-program-definitions.pdf, retrieved March 2021).
2. In this paper, student needs are primarily seen in relation to the education activity. This excludes needs related to, for example, housing, food, money or health issues, even though these can be of relevance to student needs in education. Student needs here is considered with reference to, for example, differences in students' pre-existing knowledge, variations in students' ways of and willingness to engaging in various course activities and variation in students' perceptions of the course activities (see, e.g. Nerland and Prøitz 2018).
3. The analytical framework of consistency concepts were developed in relation to the QNHE research project. An earlier version of the framework has been trialled and applied in Prøitz, Wittek, and de Lange (2020).
4. The European Credit Transfer System (ECTS) is a central tool in the Bologna process:

> ECTS credits represent the workload and defined learning outcomes ("what the individual knows understands and is able to do") of a given course or programme. 60 credits are the equivalent of a full year of study or work. In a standard academic year, 60 credits would be usually broken down into several smaller components. (retrieved on 22.04.18, https://ec.europa.eu/education/resources/european-credit-transfer-accumulation-system_en)

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