Bachelor Creative Media and Game Technologies
Master Game Technology
Breda University of Applied Sciences

Report of the extensive programme assessment
26 and 27 February 2019

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Summary bachelor Creative Media and Game Technologies

On 26 and 27 February 2019 an AeQui committee performed an assessment of the bachelor programme in Creative Media and Game Technologies of Breda University of Applied Sciences. The overall judgement of the committee is that the quality of the programme is good.

Intended learning outcomes
The committee qualifies the intended learning outcomes as good. The focus of the programme is delivering students capable of working effectively in positions within leading companies of the games industry. Students are able to specialise in games programming, visual arts, game design and production. The twelve competences of the domain of Creative Technologies are used as intended learning outcomes; the CMGT stem places the focus on design and prototypes, evaluation and re-design, and product implementation. According to the committee, the programme has a clear connection with the industry.

Programme
Every student goes through the programme starting in one of the three disciplines, and expands and personalizes their role over the years. From the start of the programme, students execute development roles in project work. The committee considers there is a clear connection between the aims and objectives of the programme and the objectives in the projects, which are described in project briefs. The programme holds a very strong community in place in which students, teaching staff, researchers and industry all play a significant role. The teaching staff finds a balance between an in-depth reviewing of the student work, documenting all the feedback and working together in the gamelab to create meaningful learning experiences. The programme has a very thorough selection process in place and the qualifications of the incoming students are in line with the structure and contents of the intended curriculum.
Considering the programme has an international, innovative and challenging industry simulated learning environment, unique and up-to-date through the project brief-approach, the assessment committee qualifies the structure of the programme as excellent.

Staff
The committee qualifies the staff as good. There are forty teachers, three study coaches and two student counsellors. Over 50% of these staff members is international and most of them have games industry experience. The committee establishes that the staff team is highly qualified for the realisation of the curriculum in terms of content and educational expertise. They are very motivated to work with this specific group of students and in this specific learning environment.

Facilities and tutoring
The committee qualifies the services and facilities as good. The infrastructure such as accommodation and facilities is sufficient for the realisation of the curriculum. The programme is well accommodated by several work environments that enable different learning styles required for a well-rounded games education. The tutoring of and provision of information to students are conducive to study progress and tie in with the needs of the students. The committee is enthusiastic about the tutoring as an integral part of the education: there is a strong monitoring system based on results of exams, in combination with e-modules on transferable skills.

Quality assurance
The committee qualifies the quality assurance as good. The programme has an explicit and widely supported quality assurance system in place which is embedded in the agile development practices. The several committees act as checks and balances in the organization and development of the education.

Assessment
The committee qualifies the assessment as good. The assessment consists of continuous feedback, team-based summative assessment and the graduation assessment. With these elements, the programme has a very thoroughly worked out and adequate assessment system. The assessment methods allow freedom to adapt to the different disciplines and levels of learning of a particular project.

Achieved learning outcomes
The committee qualifies the achieved learning outcomes as excellent. The programme judges the level of achievement by the final projects performed in the last year. According to the committee, the students show a very high level of quality in these projects. Alumni are well prepared for a career in the top end of the games industry; they are trained as the next generation of world-class game development professionals. According to the committee, this is a great achievement for the programme when compared to the levels achieved by similar programmes all over the world.

Recommendations
The programme appears to the panel as very strong and innovative. In the same time, the panel would like to encourage the programme to have some further considerations on the 'flipside' of the strong and innovative curriculum. The products students produce look very strong and commercially viable, there is almost a 'BUas-signature'. In the same time some students might feel a need for further experiment, self-expression and authenticity.

The committee established that the industry has an important role in the programme, among others in the yearly industry advisory board. In addition, the committee supports the intention of the programme to strengthen the contacts with partner schools.

All standards of the NVAO assessment framework are assessed positively, hence the committee awards a positive recommendation for the accreditation of the bachelor programme Creative Media and Game Technologies. The committee concludes that the overall assessment of the programme is **good**.

On behalf of the entire assessment committee,
Utrecht, April 2018

René S. Kloosterman   Linda van der Grijspaarde
Chair   Secretary

Summary Master Game Technology

On 26 and 27 February 2019 an AeQui committee performed an assessment of the master programme in Game Technology of Breda University of Applied Sciences. The overall judgement of the committee is that the quality of the programme is sufficient.

Intended learning outcomes
The committee qualifies the intended learning outcomes as satisfactory. The focus of the programme is delivering students able to do research, analyse, compare, and make rigorously reasoned decisions in the international field of game development, by giving them the opportunity to dive deep into one topic. Seven competences are used as intended learning outcomes. According to the committee, the programme has a clear connection with the industry.

Programme
The committee qualifies the curriculum as satisfactory. The programme uses a project-based approach in which students enter the programme with their own proposal and a portfolio showing their expertise, knowledge, and skills in the area they want to research and master. The project-based approach allows students to define the content and context of their research independent from a fixed set of offered classes which is focussed on research skills, research methodology, academic writing, and development practices in the games industry. The graduation project is planned across the full year providing substantial time and opportunity to explore the research topic at hand. The committee considers there is a connection between the aims and objectives of the programme and the objectives in the blocks, which are described in clear project briefs.

Students receive expert supervision during the full duration of their project by the assignment of a supervisor. The supervisor also acts as a central point of contact for matters relating to the study process. The structure provides students to learn actively and take responsibility for their learning processes themselves and studying independently.

The programme has a very thorough selection process in place and the qualifications of the incoming students are in line with the structure and contents of the intended curriculum.

Staff
The committee qualifies the staff as good. There are forty teachers, available for the bachelor's and master's programme. Over 50% of these staff members is international and most of them have games industry experience. The committee establishes that the staff team is highly qualified for the realisation of the curriculum in terms of content and educational expertise. They are very motivated to work with this specific group of students.

Facilities and tutoring
The committee qualifies the services and facilities as good. The infrastructure such as accommodation and facilities is sufficient for the realisation of the curriculum. The programme is well accommodated by. The committee is enthusiastic about the extensive individual supervising of the students. The supervisors, the study career coach and the student counsellor complement each other and the tutoring is an integral part of the education.

Quality assurance
The committee qualifies the quality assurance as good. The programme has an explicit and widely supported quality assurance system in place which is embedded in the agile development practices. The several committees act as checks and balances in the organization and development of the education.

Assessment
The committee qualifies the assessment as good. The programme has a thoroughly worked out and

adequate assessment system with four assignments that allow students to focus their time and effort on the development of their research project. The intended learning outcomes and assessment criteria fit the different projects of the students. The committee is positive about the continuous feedback, which is pivotal in learning. The assessment procedures are well worked out and are clear to the students. The Board of Examiners and the Assessment Committee perform thoroughly and pro-actively their tasks to control the quality of the exams, the assessment procedures and graduation research projects.

Achieved learning outcomes
The committee qualifies the achieved learning outcomes as sufficient. The programme judges the level of achievement by assessing the thesis and artefacts of the students at the end of the year. The final work of the students illustrate that the students have achieved the competences as formulated. The skills, knowledge and attitude gained in the programme help students follow their career path as can be seen in data and examples provided.

Recommendations
The programme adequately meets all standards of NVAO framework. In the samen time, the panel would like to encourage some further developments.

According to the committee, the programme could be more clear upon its research profile and the preferred methodology. Also the marketing of the kind of research in the master's programme to the bachelors could be strengthened. It should be clear how the programme balances between craftsmanship and research. The committee agrees with the programme it should develop own standardised research methodologies and ways to present their results. The committee suggests that the role of research in the programme could be presented as bringing research into artefacts.

The programme uses seven competences as its intended learning outcomes. According to the panel, these intended learning outcomes are well described in terms of master's level and orientation and are in line with the domain-specific requirements for the domain of creative technologies. However, the committee feels that the competence framework needs to be brushed up a bit. Together with the repositioning and reshaping the profile of the programme, the committee recommends to evaluate the competences.

In some works a critical reflection on the methodology (reliability, validity) is missing. The committee advises the programme to sharpen its profile (as earlier stated) and redefine the requirements for the student work based on this profile.

All standards of the NVAO assessment framework are assessed positively, hence the committee awards a positive recommendation for the accreditation of the master programme Game Technology. The committee concludes that the overall assessment of the programme is **sufficient**.

On behalf of the entire assessment committee,
Utrecht, April 2018

René S. Kloosterman   Linda van der Grijspaarde
Chair   Secretary

Overview

Bachelor CMGT

Standard	Judgement
1. Intended learning outcomes	*Good*
2. Orientation of the curriculum	*Good*
3. Contents of the curriculum	*Good*
4. Structure of the curriculum	*Excellent*
5. Qualifications of incoming students	*Good*
6. Staff: qualified and size	*Good*
7. Accommodation and infrastructure	*Good*
8. Tutoring and student information	*Good*
9. Quality assurance	*Good*
10 Assessment system	*Good*
11 Achieved learning outcomes	*Excellent*
Overall judgement	**Good**

Master GT

Standard	Judgement
1. Intended learning outcomes	*Satisfactory*
2. Orientation of the curriculum	*Satisfactory*
3. Contents of the curriculum	*Satisfactory*
4. Structure of the curriculum	*Satisfactory*
5. Qualifications of incoming students	*Good*
6. Staff: qualified and size	*Good*
7. Accommodation and infrastructure	*Good*
8. Tutoring and student information	*Good*
9. Quality assurance	*Good*
10 Assessment system	*Good*
11 Achieved learning outcomes	*Satisfactory*
Overall judgement	**Satisfactory**

Introduction

This report gives a reflection of the assessment of the bachelor's programme Creative Media and Game Technologies (CMGT) and the master's programme Game Technology (MGT). These programmes are offered by Breda University of Applied Sciences (BUas).

The institute
BUas is a medium-sized, government-funded higher education institute. More than 7,000 Dutch and international students from some 100 countries are studying at the institute. BUas offers bachelor's and master's programmes at professional and academic level in the domains of Games, Media, Hotel, Facility, Logistics, Built Environment, Tourism and Leisure & Events.

The programmes CMGT and MGT are offered by the Academy for Digital Entertainment (ADE), part of BUas. In addition to games, ADE offers an undergraduate study in Creative Business as well as a Master in Media Innovation. ADE has a total of 1,586 students and 116 staff in total.

Bachelor CMGT
The bachelor is a four-year full-time bachelor's programme of professional orientation, amounting to 240 ECTS. In September 2018 there were just over 700 students enrolled. The programme was established in 2006 with a focus of delivering students capable of working effectively in positions within leading companies of the games industry. The programme allows students to specialise in games programming, visual arts, game design and production. Most of the staff have games industry experience and combine their teaching with continual industry engagement.

The programme creates a learning environment that mimics a real game studio connected to the industry, training all relevant disciplines while focussing on interdisciplinary collaboration, and employing best practices in project-based learning.

Master Game Technology
MGT is a small scale master's programme that aims for fifteen enrolments each year. The goal of the programme is to prepare young professionals for a role in R&D of any (large) game studio, taking their current skills further to a level where this can be achieved. Students work for a full year on a game development domain-related research project matched to expertise in ADE and in industry. They undertake courses on (academic) research and are supervised by a supervisor in the field they are going to explore. Emphasis is made on exploration, scientific data collection, critical thinking and well-tested ideas.

The assessment
BUas assigned AeQui VBI to perform a quality assessment of both programmes. In close co-operation with the programme management, AeQui convened an independent and competent assessment committee. A preparatory meeting with representatives of the programme was held to exchange information and plan the date and programme of the site-visit.

In the run-up to the site visit, the assessment committee has studied the self-evaluation report on the programme and reviewed a sample of graduation projects accepted during the last two years. The findings of the report and the results of the graduation projects review were input for discussions during the visit.

The site visit was carried out on February 26th and 27th 2019 according to the programme presented in attachment 2. The committee has assessed the programme in an independent manner. At the end of the visit, the chair of the assessment com-

mittee presented the initial findings of the committee to representatives of the programme and the institution.

In this document, the committee is reporting on its findings, considerations and conclusions according to the NVAO framework for extended programme assessment. A draft version of the report was sent to the programme management. Its reactions have led to this final version of the report.

Bachelor Creative Media and Game Technologies

Intended learning outcomes

The committee qualifies the intended learning outcomes as **good**. The focus of the programme is delivering students capable of working effectively in positions within leading companies of the games industry. Students are able to specialise in games programming, visual arts, game design and production. The twelve competences of the domain of Creative Technologies are used as intended learning outcomes; the CMGT stem places the focus on design and prototypes, evaluation and re-design, and product implementation. According to the committee, the programme has a clear connection with the industry.

Intended learning outcomes

Standard 1: The intended learning outcomes tie in with the level and orientation of the programme; they are geared to the expectations of the professional field, the discipline, and international requirements.

Findings

The bachelor's programme was established in 2006 under the name International Game Architecture and Design. From the start the focus of the programme was to deliver students capable of working effectively in positions within leading companies of the games industry. The programme allows students to specialise in games programming, visual arts, game design and production.

The programme became part of the domain of Creative Technologies (CT) created in 2014, bringing a new set of competencies and a new programme name: Creative Media and Game Technologies (CMGT). The CT domain has three stems that share twelve competencies on bachelor's level: Communication and Multimedia Design (CMD), Fashion and Textile Technologies (FTT) and CMGT. CMGT is the stem the programme represents alongside University of the Arts Utrecht (HKU), Hogeschool Rotterdam and Saxion Enschede. The four programmes in the CMGT stem have quarterly meetings to discuss their individual strengths and their individual focus in the field of game development. They also discuss developments in the field and align the shared Body of Knowledge and Skills.

The next twelve CT competencies are used as intended learning outcomes of the programme:

1. Technical Knowledge & Analysis
2. Design & Prototyping
3. Implementation & Testing
4. Research & Analysis
5. Conceptualising
6. Designing
7. Entrepreneurial Attitude
8. Entrepreneurial Skills
9. Working in Projects
10. Communicating
11. Learning and Reflective Capacity
12. Responsibility

The CT domain programmes overlap with each other in the attention paid to technology and design. The difference in focus lies in the level that the competencies have to be acquired. The BUas programme places the focus on design and prototypes, evaluation and re-design, and product implementation. Also the programme has a strong focus on professional standards. Students are challenged to prove themselves as independent creative professionals.

The programme has yearly contact with its industry advisory board (IAB). Here new technological developments, curriculum changes, opportunities and risks are openly discussed. For instance, as the programme moved to a more free curriculum with the coming of the CMGT stem, the IAB supported the focus on practical and personal development, but also warned that hard skills may potentially suffer. The subsequent improvements of the programme were guided by these discussions.

In the coming years, the programme wants to engage in more international competitions and collaborations with partner schools to benchmark itself with the best game development schools in the world.

Considerations

The committee established that the bachelor's programme offers the students the possibility to become effective team members in companies of the games industry. The committee observed that by distinguishing the specializations in games programming, visual arts, game design and production, the programme makes a clear choice and has a very strong technical, industry focus, especially on the high level AAA-games industry, where other programmes focus also on (other) media. The programme is on par with the developments in the game industry. It is clear to the committee that the programme positions itself very well: there is a clear connection with the industry and students easily find promising jobs. Although the new name of the programme suggests that it also focuses on media, students have a very clear picture of the focus on (technical and designing aspects of) gaming and on their possible future.

The programme uses the twelve CT competences as its intended learning outcomes. According to the committee, these intended learning outcomes are well described in terms of level and orientation and are in line with the domain-specific requirements for the domain of creative technologies.

The committee agrees with the programme that their Body of Knowledge and Skills needs updating and alignment. The committee advises to create a Body of Knowledge and Skills in which the three specializations in games programming, visual arts, game design and production are clearly distinguished.

The committee established that the industry has an important role in the programme, among others in the yearly industry advisory board. The committee supports the intention of the programme to strengthen the contacts with partner schools.

Based on the interviews and examination of the underlying documentation, the assessment committee qualifies the intended learning outcomes as **good**.

Curriculum

Every student goes through the programme starting in one of the three disciplines, and expands and personalizes their role over the years. From the start of the programme, students execute development roles in project work. The committee considers there is a clear connection between the aims and objectives of the programme and the objectives in the projects, which are described in project briefs. The programme holds a very strong community in place in which students, teaching staff, researchers and industry all play a significant role. The teaching staff finds a balance between an in-depth reviewing of the student work, documenting all the feedback and working together in the gamelab to create meaningful learning experiences. The programme has a very thorough selection process in place and the qualifications of the incoming students are in line with the structure and contents of the intended curriculum.

Orientation

Standard 2: The curriculum enables the students to master appropriate (professional or academic) research and professional skills.

Findings

Professional skills
From the start of the programme, students execute development roles in project work. The professional skills necessary to perform these roles range from software engineering to user experience design, from 3D modelling to animation, from mathematics to architecture. The programme uses the early parts of the programme to lay the critical foundation for these skills and rely on the student to develop these skills as an independent learner using a multitude of resources towards the end of their study.

Next to the work that needs to be performed as specialist craftsmen, there is a set of professional development skills that needs to be developed. In the programme these competencies have been developed into a set of Intended Learning Outcomes (ILOs) which are assessed during every project. These ILOs are about organizing project work, communication skills, self-reflective capacity and engaging with feedback.

The work field is involved in the programme, by having industry clients perform the role of publisher or project stakeholder, and give students and staff feedback on the progress and performance of the projects they work on. Industry also engages with students through guest lectures and workshops which can be for students or expert groups. Furthermore, the fourth year offers the option for students to undertake a work placement. Industry is an instrumental part of the final graduation process where they review and provide feedback on the student's final project.

In the coming years the programme wants to invest further in strengthening the bonds to others disciplines of BUas by using its expertise in game technologies, such as design thinking, deep learning and 3D visualisations, alongside investing in the alumni network through the learning communities.

Research skills
Each course is set up with a project brief in such a way that they require students to research and investigate. This may be done through setting creative constraints (such as: requires online multiplayer) or using terminology they may not be directly aware of (such as: documentation consists of a nodegraph, and map and plan) which requires students to formulate a research question and investigate learning resources. As the competency level grows, the independence and complexity of research topics inevitably also grows.
According to the programme, research in the game development process goes beyond the academic research skills such as posing a research

question, doing desk-research and writing conclusions. Research through product analysis and prototyping are important skills for a game developer. During their studies students are often tasked with a problem where they do not yet know what they need to know, and they are trained in figuring out what they will need to move forward.

Based on the 2018 NSE results the programme is top-scoring in the CMGT stem on 'practical research', but the programme aims to embed research even stronger in the programme. According to the self-evaluation report this could be done by aligning research projects to the project briefs and in that sense having student teams create development data for research projects. Similarly, the development-oriented students need to be reminded of the role of research in the design process repeatedly, which is something they often struggle with as their level of independence grows in the later years of the study. Most importantly the programme wants to expand its reach into the industry and generate an even more substantial contribution to the game development field through the organisation of conferences, publishing games and papers, sharing practices and assets, and organizing semi-open learning communities through which the programme can connect research, education and industry.

Considerations
The panel considers that students have ample opportunities in the programme to learn about and practice research. The committee trusts that the programme provides enough background for students to gain knowledge and experience in their field of work so they are able to carry out their graduation work. The ILOs in the project briefs are clearly interlinked with the research. The committee is enthusiastic about the incorporation of research in the projects: students get well prepared for their graduation work this way. The committee agrees with the programme that its plans ensure even better embedding research in the programme.

The committee holds the view that the staff together with the strongly integrated industry relations into multiple levels of the programme are capable of bringing current developments into the programme. The programme considers itself part of the development community; the committee strongly agrees with that. The programme is very focussed on the competencies and interdisciplinary collaboration, which is needed for students to perform their future jobs. The committee would like to emphasize this is a strong point of the programme.

Based on the interviews and examination of the underlying documentation, the assessment committee qualifies this standard as **good**.

Contents
Standard 3: The contents of the curriculum enable students to achieve the intended learning outcomes.

Findings

Regular programme
Every student starts in the first year in one of the three disciplines, and expands and personalizes his or her role over the years. The four years are therefore called Foundation, Exploration, Collaboration and Personalisation.

In every block of ten weeks, students work on a project. The project brief contains the information a student needs to get started with the project, with both the ILOs and the creative constraints. By keeping a separation between what the programme wants the students to learn, and what it want them to make, they create flexibility to change the Body of Knowledge and Skills with new trends. For instance, in the third year the ILOs are stable over the years and do not change much. However, the creative constraints of the brief change every year, ranging from VR projects to console projects, Motion Capturing or advancements in deep learning. Workshops, expert

groups and guest lectures can then be aligned to the needs of these projects.

Each project is always aimed at a specific development phase, and builds the necessary skills to master that phase. These phases of development are concept, pre-production, production, and release. For instance, concept artists may work on sketches and art-style definition in the concept phase, on inspiring content during pre-production, then focus on creating production art for assets, and finally creating marketing images for release.

Professional development is a key part of assessment. This focuses on aspects like team-work, planning, communication and self-reflective capacity. To this end study coaching is embedded in the curriculum. Study coaching begins with the intake process and builds with communal workshops to later become more one-on-one as students grow increasingly independent. Even though the study coaches take the leading role in organizing lectures and workshops for the relevant professional skills, the teaching team carries and assesses these activities together.

Fast track
The programme provides an accelerated programme for graduates with a VWO or equivalent diploma. This fast track is a three year version of the programme. Students in the first and second year have the same projects and assessments as the others, but are encouraged to do more self-directed learning on the side. Instead of attending the third year they immediately go into the graduation year. The programme currently has its first student in this structure who is currently doing the graduation year.

Considerations
The committee studied the correspondence between the competences and the curriculum and considers that there is a clear connection between the aims and objectives of the programme and the objectives in the projects, which are described in clear project briefs. The detailed project briefs

show the programme keeps up with the newest technologies and developments in the industry. The translation of the competencies in ILOs per project is very transparent, according to the committee.

The committee is enthusiastic about the structure of the programme, which allows the students to build a strong foundation in their discipline first, and then later let students explore overlapping roles. The structure provides ample room for individual development and thereby give opportunities for deep learning and possibilities for innovation. However, the committee suggests to give the students even more possibilities for their creative development for example by leaving more room for 'out of the box' choices in some of the projects.

The committee advises the programme to closely monitor the effectiveness feasibility of the fast track: mainly due to the limited size (just one student at the moment) it is not clear if skipping the third year is feasible.

Based on the interviews and examination of the underlying documentation, the assessment committee qualifies this standard as **good**.

Structure
Standard 4: The structure of the curriculum encourages study and enables students to achieve the intended learning outcomes.

Findings
The programme is of the opinion that it is crucial for students and alumni to be able to organize their project work and adapt to changing context, creative opportunities or new insights. Communication within and between disciplines is another crucial skill to be able to collaborate in a multidisciplinary environment. Therefore, the project work requires groups of people to work together, and they are supported in this process through the teaching teams and learning resources. The programme considers self-reflective capacity and

engaging with feedback a crucial step to get the learning cycle going. Providing work for review to lecturers, peers, or players and meticulously collecting feedback is a central part of both the natural design process and the educational framework.

The simulated studio environment is implemented through Gamelab. Students are expected to be present in the Gamelab room two days a week. These are the core days in which they will have rooms, devices, and teachers available. For another two days a week they work on the project on premises of BUas. The fifth day is Workshop Wednesday in which, on a weekly basis, a variety of workshops and lectures are organized.

In the early years the Gamelab days are highly structured for the students, including instructions and lectures. During these contact hours students receive coaching, one-on-one feedback, and group work reviews. For instance, a typical day will start with the teachers setting direction by explaining how far the programme expects the project has progressed. After that people work on their tasks and lecturers walk around the classroom to help students individually or in groups. In the afternoon some work reviews, pitches, or discussion may be planned. In later years these days are more loosely structured. There are team reviews of project progress, students may have scheduled feedback sessions, but mostly students use this time to work on the project with their teams.

The Workshop Wednesdays are where most of the traditional 'teaching' takes place with a lecturer in front of a group of students elaborating on learning resources. Year 1 and 2, especially, rely heavily on delivering learning resources in sync with the project timelines, establishing a guiding structure to the project. In Year 3, Year 4 there is a more active role required from the students. Next to lectures there are also interactive workshops, guest lectures or expert groups, which are critical to students to personalise into their chosen roles.

Expert groups are essentially learning communities, groups of people who come together because they share an interest in a particular topic. This could be, but is not necessarily, related to an ongoing project. For instance, the weekly Year 3 Production Roundtable is a group of peers who have production roles in complex projects and share issues and advice. The Procedural expert group meets on a weekly basis to share work and help each other problem-solve issues. 'Poly Parties' are a staple as senior students help the first years with their assignments. The Retrogaming group is currently developing a title on the original GameBoy, experimenting with development kits and setting up a small game project. The expert groups are set up based on project requirements and student interest.

All projects are standardized to adhere to the same project cycle, which consists of a loop that happens once a block, a subloop that happens once a week, and another subloop that happens on a daily basis. The project loop is rooted in PBL, agile development, and relies heavily on feedback. The evidence of this is stored in an artefact called the Learning Log, which can be seen as an extended portfolio method of tracking evidence.

Because the programme would like to extend the availability of staff in gamelabs, it improved the student/teacher ratio by reducing the number of students accepted into the programme since the last accreditation from 260 to 180 per year.

International benchmark
The CMGT programme of BUas ranks top 10 in an international survey published by The Rookies. The programme has benchmarked their curriculum and structure with both these (private and public) international game educations and found that it is among the most innovative programme due to the way it mirrors a simulated game development studio, offers projects that are not fixed to narrow subjects, It facilitates large team (40+) that integrate their skills in a multidisciplinary team and allows students to work on projects to

completion. The supervision is unique because staff work in large teaching teams who have a full range of experience and skills. In addition, students are exposed to multiple industry standard tools and game development resources.

This CMGT programme fosters strong personalised learning which is embedded in the curriculum structure throughout the four years of study that ensures the achievement of learning outcomes on a higher level of complexity and autonomy.

Considerations

The committee feels the teaching-learning concept of the programme structures the programme very well and is exceptional supportive for the learning process of the students. The committee is very positive about the structure of the learning environment in which students become highly effective team members by continually learning in an industry-simulated game development environment where different industry technologies and tools are used. With the balance between project work and individual assessment of progress on the competences, the programme succeeds in emulating industry best practices. The committee recognises and supports the findings of the international benchmark in this respect.

According to the committee, the programme holds a very strong community in place in which students, teaching staff, researchers and industry all play a significant role. The teaching staff finds a balance between an in-depth reviewing of the student work, documenting all the feedback and working together in Gamelab to create meaningful learning experiences. The expert groups are a great way to remain flexible with what the programme teaches, while still being able to organize this logistically to ensure the core curriculum.

Students and alumni reported to the committee that the workload is high but doable. They are all very dedicated to the programme and enthusiastic about the structure.

Considering the programme has an international, innovative and challenging industry simulated learning environment, unique and up-to-date through the project brief-approach, the assessment committee qualifies this standard as **excellent**.

Incoming students
Standard 5: The curriculum ties in with the qualifications of the incoming students.

Findings
Each year the programme has five prospective students competing for every successful appointment. The programme wants to ensure that entrants to the programme have experienced creating at least one game or were actively involved with a game development related task and are very motivated to learn how to make the great games of the future. Study coaches are already active during the intake phase where they are available for applicants and relatives to answer questions, oversee the study skills tests and provide feedback for the intake process improvements. This provides another dimension for ensuring applicants are making the right choice of study.

After students enrol for the programme they must select the variation they apply for. During the course of application they will participate in several tests and assignments specifically aimed at gauging the applicants' fundamental skills and aptitude for the variation they want to explore. Depending on the variation, these assignments range from drawing to developing a game or showing core C++ understanding.

The intake process consists of five mandatory and assessed components. These components are partly done online after applicants sign up for the course as well as on-site when students are invited for a personal interview to discuss their assignments, interest in the programme, and portfolio. The five components consist of a study skills test (online), a variation assignment (online), a

general exam (on-site), a variation advanced exam (on-site) and an interview (on-site). All components will get a score, which will be collected and translated in a 100 point scale. The results of all applicants will provide a final ranking that decides if an applicant is accepted or not. All disciplines are equally represented in the final intake numbers.

The programme aims to increase the percentage of international students, as game development is a global industry. Currently 21% of all CMGT students are international, with a peak of 29% international in the first year. The programme will maintain activities in international marketing and attracting top talent from across the globe.

Considerations
The committee examined the admission requirements for the programme and concluded that the qualifications of the incoming students are in line with the structure and contents of the intended curriculum. The committee is of the opinion there is a very thorough selection process in place, which filters out the 'game players' from the 'game makers'. The elaborate intake assessment with portfolio review and an interview, combined with setting clear expectations at open days and orientation days, has proven a successful strategy to attract and select the best students. Students confirm 'the right students are getting in' and the committee determines that the program is capable of attracting highly talented students.

Based on the interviews and examination of the underlying documentation, the assessment committee qualifies this standard as **good**.

Staff

The committee qualifies the staff as **good**. There are forty teachers, three study coaches and two student counsellors. Over 50% of these staff members is international and most of them have games industry experience. The committee establishes that the staff team is highly qualified for the realisation of the curriculum in terms of content and educational expertise. They are very motivated to work with this specific group of students and in this specific learning environment.

Standard 6: The staff team is qualified for the realisation of the curriculum in terms of content and educational expertise. The team size is sufficient.

Findings
In September 2018 over seven hundred students were enrolled in the programme supported by forty teachers (27 fte). These staff members also support the Master Game Technology. In addition, the programme has three study coaches (2,3 fte) and two student counsellors (1,1 fte). The teaching team has significant and diverse games industry experience. Over 50% of the staff is international. The workshop system gives teachers the power to schedule and promote guest lectures, with the advantage of facilitating both staff and student exposure to new ideas.

Given the number of staff coming from industry, the programme has ensured they also receive the essential educational support and training: didactics and BKE (Basic University Examiner Qualification), along with relevant master studies for those who did not already have them. Of the staff body twenty have or are currently completing a Master level study, and five have completed a PhD. 75% have been BKE certified. Due to the games industry background staff generally possess a strong intrinsic motivation to keep up-to-date with latest industry developments. The programme also ensures staff have opportunities to attend industry relevant conferences such as the Game Developers Conference and GamesCom.

Besides being a content specialist able to convey skills and knowledge to a passive group of students, a part of their role requires staff to be an industry mentor who is able to motivate and challenge their students to find their own way. The aim of the programme is to keep the staff up to date with the fast-moving games industry which will remain a focal point that the programme seeks to continually support through training, learning communities and conferences.

The option of placing staff back in industry for a set period of time is another option that is being actively pursued. Having good industry partners allows the programme the possibility for them to welcome a staff member to temporarily join their team. Given this, one of the future goals of the programme is to see at least two staff members making use of this option each academic year.

Considerations
The committee establishes that the staff team is highly qualified for the realisation of the curriculum in terms of content and educational expertise. They are very motivated to work with this specific group of students and in this specific learning environment. The students have ample personal contacts with the teaching staff, who are easily accessible. They are qualified and recognized within the games industry. Therefore, the programme is highly integrated with the future workplace of students. With over 50% of staff being international helps prepare students for employment options abroad and to be globally-ready. The student staff ratio is good.

Based on the interviews and examination of the underlying documentation, the assessment committee qualifies this standard as **good**.

Services and facilities

The committee qualifies the services and facilities as **good**. The infrastructure such as accommodation and facilities is sufficient for the realisation of the curriculum. The programme is well accommodated by several work environments that enable different learning styles required for a well-rounded games education. The tutoring of and provision of information to students are conducive to study progress and tie in with the needs of the students. The committee is enthusiastic about the tutoring as an integral part of the education: there is a strong monitoring system based on results of exams, in combination with e-modules on transferable skills.

Accommodation and infrastructure
Standard 7: The accommodation and material facilities (infrastructure) are sufficient for the realisation of the curriculum.

Findings
Currently BUas is in the middle of two building relocations. In September 2018 the programme started at a temporary building for just one year. After this the programme will relocate to the main location again, which is currently in development towards a state-of-the-art campus. The new campus will bring together all study programmes of BUas which are currently spread across the city of Breda, in one location. The campus will be fully operational at the end of 2019.

The programme provides several different physical learning environments, from the core industry simulated Gamelabs to specialist development environments supporting personal development and research. These environments include:
1. Gamelabs - the work simulated environments are the four main areas where students experience full day contact time on at least two days of the week,
2. Technical Drawing Room - specialist space for the technical drawing skills and knowledge,
3. Life Drawing Room - specialist space for the practise of foundational art skills and knowledge,
4. Play Space and VR/AR Testing Room - research, play-testing and Virtual Reality development,

5. Library of Books and Games - collection of game development related books, board and video games.

As a part of the Creative Technologies domain, the programme has rolled out a vast set of digital tools to support both the professional and educational aspects of the programme. This is a combination of industry tools and educational toolsets. As for the digital environment, the challenge for the programme lies in onboarding students into this multitude of toolsets. In part this is done through tutorials during Gamelab days where basics are set up together with the students, and in part by postponing use of some more complex tools such as Jenkins and Jira until later years. Also, part of the answer lies in streamlining the use of the tools to students. The programme is looking into options to create a single point of entry website for students, through which they can find all relevant educational information.

Besides consumer hardware, the programme also gives students access to video game console development kits from Sony, Microsoft, and Nintendo.

The availability of space is limited by the traditional design of contact and class hours only, while the programme provides sixteen hours of gamelab every week. The programme recognizes this in a lower than average score on 'availability of workstations' in the 2018 NSE results. With the

move to the new campus in 2019 and the preparations put in place the programme is confident it will be able to improve the facilities even further.

Considerations

The committee considers that the infrastructure such as accommodation and facilities is sufficient for the realisation of the curriculum. The programme is well accommodated by several work environments that enable different learning required for a well-rounded games education. According to the committee, the programme is able to create an inspiring, international meeting place for students, staff and industry – filled with activities and dynamism. Students have access to state-of-the-art gaming facilities. The committee believes that learning how to work and develop with these devices gives unique experience that enriches a student portfolio and makes them more employable.

This year, the facilities are a challenge for the programme, mainly because the building has less capacity then desired. The committee believes the new building will facilitate the infrastructure that will fit the programme very well. The new campus will facilitate innovative education and business practices.

Based on the interviews and examination of the underlying documentation, the assessment committee qualifies this standard as **good**.

Tutoring and student information

Standard 8: The tutoring of and provision of information to students are conducive to study progress and tie in with the needs of students.

Findings

The programme provides a student handbook that explains year and block procedures, including competencies and assessment. For each project the programme has a project brief that describes the project goals, intended learning outcomes, additional requirements, deliverables and a timeline. The handbook and project briefs are published on the digital learning environment which also includes the official Teaching and Exam Regulations.

Within the standardized structure of every block, the programme starts with a project kick-off for each year for all students to attend. The kick-off is the starting point for a new project in which all important requirements are covered. These year presentations are often repeated during the block to update students and answer questions on project requirements if they occur.

Staff are assigned to a year team that provides teaching and supervision to the full group of students in a given year and variation every block. This creates a connection between the group of students and teachers involved. It is important that student coaches are an integral part of the year teams as well. In practice, students take part in two eight hour gamelabs every week. During these days the intensity of guidance is substantial with a three man teaching team being available for around fifty to sixty students for the full day. During the labdays the role of teacher, besides being an expert in the field, is also a mentor to guide the student on their work and development. Teacher contact hours are then supplemented with the sessions that students join on the Wednesday Workshop.

Already in their third year it will become more apparent which personal directions students want to further develop themselves in. With the help from the third year teaching team and coaches, students will create a plan for their final graduation year. They can choose between a work placement, personal project, minor or exchange. During their graduation year students work on this project for which they get assigned a personal supervisor. After agreeing on the plan together, student and supervisor typically meet bi-weekly to discuss progress and other factors that might affect their work. Students doing a work placement also have a personal academic supervisor assigned, along-

side a company supervisor, to ensure the progress of competencies and educational assessment.

Every year team has a study career coach that helps with coaching and advising students on study skills and study career management through individual meetings as well as group sessions. They help monitor the students' professional and personal growth in the educational context. By including the coaches in the year teaching teams the programme wants to ensure their contribution for students with regard to the 'softer' skills they also essentially need to develop for their future career as comprehensive professionals. Coaches setup training sessions on feedback, reflection, and setting goals. With regard to team projects they support when team issues arise. The programme started to use MBTI and Belbin Team Roles as methods to help with supporting students on their personal development as well as roles they take in a team.

In the case of medical or personal circumstances that influence their study, the student can turn to the student counsellor. Conversations between student and counsellor are confidential. The student counsellor reports directly to the ADE Management Team on a regular basis. In situations that relate to exceptional personal circumstances of students, the counsellor also acts as an advisor to the Board of Examiners.

The programme noticed that the switch between years can feel different to students. This the programme aims to improve by clearer expectations and better onboarding when students join a new year.

Considerations
The tutoring of and provision of information to students are conducive to study progress and tie in with the needs of the students, according to the committee. The committee is enthusiastic about the tutoring as an integral part of the education: there is a strong monitoring system based on results of exams, in combination with e-modules on transferable skills.

The programme has an active mentoring and guidance system. The committee agrees with the programme it should ensure that staff are trained and equipped to fulfil this role and the extent to which this reaches.

Based on the interviews and examination of the underlying documentation, the assessment committee qualifies this standard as **good**.

Quality assurance

The committee qualifies the quality assurance as **good**. The programme has an explicit and widely supported quality assurance system in place which is embedded in the agile development practices. The several committees act as checks and balances in the organization and development of the education.

Standard 9: The programme has an explicit and widely supported quality assurance system in place. It promotes the quality culture and has a focus on development.

Findings
Most of the processes are organized in cycles where things are planned, executed, and evaluated, as is outlined in the Quality Assurance Policy of BUas.

Every block ends with a block evaluation that consist of multiple parts. Firstly, the programme organizes roundtable discussions with the student representatives of each year. These roundtable discussions are fed by data gathered among the student groups throughout and at the end of the block. In a meeting with multiple teachers and students the programme discusses issues and is able to ask for clarifications or explain its intentions. The meeting is concluded with a number of action points going forward. Secondly, the programme has the teaching teams who evaluate the block in a one hour retrospective discussion. Improvement points are shared on different levels ranging from information clarifications to students, practical impediments, or issues in the team collaboration. Again, this evaluation is concluded with a number of action points. Thirdly, a number of analyses are run on the projects' data, both at the level of formative and summative assessment which allow to see grade averages and variation of grades, and check the number of documented feedback from teachers. Finally, the year leads have an evaluation to recognize inconsistencies between years or issues that need to be solved on a broader level. Some action points are picked up immediately, while others pertain to next year's version of the project and are stored for reference.

The programme has a number of committees in place. The academy's Participation Council ('Deelraad') has a connection with the academy's director. They meet every eight weeks and discuss ongoing matters such as facilities, vacancies for management positions, and the management contract. Furthermore, in aiming to create a more transparent culture budget results and yearly management contracts are also shared with the Participation Council. The Participation Council is also connected to the Participation Council ('medezeggenschapsraad') of BUas through which they are able to stay connected to university-wide developments. The programme also has a Degree Programme Committee who has the role to advise and monitor quality and the TER and curriculum changes.

Considerations
The committee considers that the programme has an explicit and widely supported quality assurance system in place which is embedded in the agile development practices. The system promotes the strong quality culture of striving for excellence. The committee appreciates the extensive end of block evaluation that approaches the quality measurement from different sides. The several committees act as checks and balances in the organization and development of the education.

Based on the interviews and examination of the underlying documentation, the assessment committee qualifies this standard as **good**.

Assessment

The committee qualifies the assessment as **good**. The assessment consists of continuous feedback, team-based summative assessment and the graduation assessment. With these elements, the programme has a very thoroughly worked out and adequate assessment system. The assessment methods allow freedom to adapt to the different disciplines and levels of learning of a particular project.

Standard 10: The programme has an adequate student assessment system in place.

Findings

Assessment system
The assessment is divided in the continuous feedback, team-based summative assessment and the graduation assessment.

The programme achieves the continuous feedback through the Gamelab days, where the teaching team and students work together on their project. Teachers can take part in stand up meetings, brainstorms, reviews or playtests and join the students organically in their development process. A significant portion of teaching is spent in the labs, working with students. Next to this informal continuous feedback each project has a number of feedback sessions specified in the project brief. These can range from checks of assignments in the first year to greenlight sessions of concept pitches in the third year. During this process the learning log takes a central role as a portfolio of the student's contribution to the project.

The learning log consists of three parts, which are aligned with the development of a project. In the first part the student reflects on performance in earlier projects and, on the basis of the current project brief and his/ her own career goals, sets goals for the project. In the second part students keep track of work performed on a weekly basis, noting down work performed, feedback received, and reflecting on lessons learned. The third part is done at the end of the block as the student reflects on the developments during the project and collects the best work, achievements, challenges, lessons learned, and completes a self-assessment based on the project brief and assessment rubric. The learning log is periodically reviewed throughout the project. The teaching team checks progress based on the project brief and grading rubric and leaves written feedback in the learning log. This feedback consists of feed-up (where are you going), feedback (what are achievements and critiques) and feedforward (what next steps are recommended). The student can respond to this feedback thus creating a dialogue as new project work is performed and the learning log is updated. As these learning log reviews often take the form of written feedback they are generally perceived as the most formal form of feedback.

The way the learning log and feedback are handled is stable at its core, but its scope and content change according to the levels of competencies which are addressed in each successive year.

At the end of the block the teaching team performs summative assessment based on the project evidence. The project evidence consists of multiple streams of data which are transparent to both teaching team and student. There is a stream of development data which contains (a complete version history of) game assets, information in planning systems, and research and design documentation. A large portion of all the digital files which are created during the development of the project are stored in the e-learning environment. Then there is the stream of learning log information, which shows work performed and reflections on activities, and also the feedback the student has collected along the way from various sources. Finally, there is a stream of

experience that the teaching team builds up with the students as they collaborate and sometimes co-create over time. This intensive teacher-student relationship provides teachers with an intimate understanding of the context within which the work was performed. All this data together is used for summative assessment.

Summative assessment in the programme is always performed by a teaching team, never by a single teacher. In practice, this means that at least two teachers review the project evidence and through alignment sessions compare this preliminary grade within the year team. In other cases the practicalities allow a teaching team to review all evidence together. To validate the alignment of the grades and set improvement points for following projects a evaluation session is organized in the year team.

For the summative assessment the project evidence is assessed based on the ILO in the rubric of the project. The indicators in the ILO are individually assessed and these lead to a calculated grade. Next to this grade students also receive block feedback. This block feedback justifies and explains the assessors' discussion points and decisions made, and also contains personalised guidance on progress towards the next year or career aspirations. This block feedback becomes a starting point for their personal goal setting in the next project. All students are invited to optional feedback sessions where they can come to discuss their summative assessment results.

If students fail the summative assessment of a project they are automatically signed up for an extension, which is the programme's form of a retake. Students who want to improve their grades are also eligible to sign up. The student now has another week to show new development evidence and represent their existing evidence in a new light. As the summative assessment is done over evidence created during the entirety of the block it is not possible for a student to do all the work in a final week. However, through a better understanding of the ILO a student may be able

to show advanced insight on their existing evidence during an extension.

Quality assurance in assessment
The assessments are based on the ADE Assessment Policy and the Testing Framework of BUas and described in the CMGT Assessment Plan and TER.

The programme trains staff in both formative and summative assessments. This does not only include formal BKE training but also the consistent use of staff meetings and year teams meetings to refresh the team on the processes and standards.

The Assessment Committee is instrumental in laying monitoring assessment quality. The Assessment Committee systematically discusses the results through learning analytics and made queries in case of doubtful results on validity and reliability. They check project briefs, randomly check quality of feedback, and review project outcomes each block. The Board of Examiners' role is to safeguard the quality of assessment of graduation projects. They oversee the graduation assessment, do randomised spot checks on graduate projects and take responsibility on the final steps of graduation.

The focus of the programme in the near future is on further improving staff and student's mutual understanding of formative assessment and working with feedback. A central challenge here is to balance hands-on mentoring at the development level with formal written feedback, which sometimes takes a lot of time to maintain. Finally, the programme is increasing its reliance on expert groups in giving feedback on work and processes, accepting even more external influences into the learning context.

Considerations
The committee has established that the programme has a very thoroughly worked out and adequate assessment system. The assessment methods allow freedom to adapt to the different disciplines and levels of learning of a particular

project. The committee is positive about the continuous feedback, which is pivotal in learning. The committee is impressed by the assessment procedures. They are well worked out and very clear for the students. The policy ensures clear processes that are in line to the didactic philosophy.

Every project, student grade themselves. The committee noticed that the own grades of the students are very close to the grades of the staff, which shows the committee there is a high level of self-awareness among students about their level of competence that is created with the assessment system throughout the learning process. The programme uses no theoretical assessments; all knowledge, skills and competences are assessed within the projects and bases on the products students deliver. The committee considers this very well worked out; it is clear to the committee that the programme succeeds in assessing all elements in the summative assessments, which are aligned with the learning outcomes.

Given the great emphasis on feedback in the programme, the committee welcomes the extra attention to the use of formative assessment and working with feedback.

The Board of Examiners and the Assessment Committee perform thoroughly and pro-actively their tasks to control the quality of the exams, the assessment procedures and graduation research projects. The Board and Assessment Committee show good knowledge of the programme and its assessment.

Based on the interviews and examination of the underlying documentation, the assessment committee qualifies this standard as **good**.

Achieved learning outcomes

The committee qualifies the achieved learning outcomes as **excellent**. The programme judges the level of achievement by the final projects performed in the last year. According to the committee, the students show a very high level of quality in these projects. Alumni are well prepared for a career in the top end of the games industry; they are trained as the next generation of world-class game development professionals. According to the committee, this is a great achievement for the programme when compared to the levels achieved by similar programmes all over the world.

Standard 11: The programme demonstrates that the intended learning outcomes are achieved.

Findings

Final projects
The programme judges the level of achievement by the final projects performed in the last year. The fourth year is the personalization year and focuses on the deepening of student knowledge and skills in planned areas. The students may undertake diverse pathways and disciplines where the development phase may vary depending on the type of project.

The fourth year provides a number of options for a student to find a direction that steps them towards a specific career path. This includes performing their own project, starting their own company, a work placement in a company. In the first semester, students are able to follow a minor at BUas or go on exchange at another university.

Working field
An internal review of all alumni showed that 80% work in the target industry and over 90% in closely related industries. The aim for the top game development studios is evident with Guerrilla Games taking the top share of the alumni at over 5%, along with companies such as Ubisoft, Nixxes and Triumph Studios all featuring strongly. Internationally over 25% of the alumni are actively working overseas with the UK, Canada, Belgium and the USA being the most popular destinations. The aim to further connect with more game studios abroad has seen a growing trend. During 2017-18 several new studios took on students, including Massive, Bohemia Interactive and Sumo Digital.

The alumni network is young in comparison to other programmes at BUas. Even so the programme is already finding many opportunities through the alumni network to expand work placement destinations, find areas for collaboration and build a more knowledgeable community of developers.

The programme intends to expand its reach further within the national and international industry. This means finding more partnerships for work placements which often lead to job positions, and continuing to support graduates in setting up their own development studios. The new Business Square at next year's Campus will also help the programme facilitate that. Furthermore, the programme wants to expand connections with the alumni through the expert groups. For instance, the programme has alumni in producer positions at a number of prestigious studios across Europe who the programme is actively approaching to help form the curriculum, be part of expert group presentations, or contribute to the learning community in other forms. Finally, according to the programme, the best way to promote a game development school is through the games which are created and played by the world. Games are being released on itch.io, iOS, Android, Steam, PS4, and other platforms in the future, which the programme will fully support.

Considerations

The committee assessed fifteen recent graduation projects of the programme and established that all met and exceed the requirements for graduation. These outcomes illustrate that the students have achieved the competences as formulated. On average the projects are of very high quality. Students work at the boundaries of the genre and present games of the quality of triple A games, according to the committee. The students show self-initiative and research skills in their work. The projects are graded similarly by the committee compared to the programme.

The committee considers the students reach a very high level of achievement and are well prepared for a career in at the top end of the games industry. According to evaluations and interviews with the working field, the committee finds that students are meeting these high expectations. The students are trained as the next generation of world-class game development professionals. According to the committee, this is a great achievement for the programme when compared to the levels achieved by similar programmes all over the world. BUas ranks in the top-10 game development programmes worldwide (Best Game Development Schools 2018, published by The Rookies) and the committee recognizes this position.

The committee established that the programme maintains an open dialogue with the Industry Advisory Board and alumni to ensure that the qualities of the graduates are aligned with the demands of the international industry.

Based on the interviews and examination of the underlying documentation, the assessment committee qualifies this standard as **excellent**.

Master Game Technology

Intended learning outcomes

The committee qualifies the intended learning outcomes as **satisfactory**. The focus of the programme is delivering students able to do research, analyse, compare, and make rigorously reasoned decisions in the international field of game development, by giving them the opportunity to dive deep into one topic. Seven competences are used as intended learning outcomes. According to the committee, the programme has a clear connection with the industry.

Intended learning outcomes

Standard 1: The intended learning outcomes tie in with the level and orientation of the programme; they are geared to the expectations of the professional field, the discipline, and international requirements.

Findings
The programme was developed so that students could experience individualised learning in the fast-paced video game development sector. Prior to this programme, students have typically had their studies guided by curriculums or the needs of a whole team, and the programme provides the opportunity to dive deep into one topic with the aid of individual mentoring and academic research support. Students on the programme have the opportunity to become specialists in their fields. According to the programme it allows students to specialize and excel in an area of their own choice in order to address or instigate technological developments and other opportunities that arise.

Professionals in the industry expect graduates to be able to research, analyse, compare, and make rigorously reasoned decisions. The graduate profile is of a specialist that will be able to communicate what should be done, but also understand and discuss the rationale behind solutions. In these ways, students on the programme operate in the field of Research and Development (R&D), where their educational outcomes emerge from combining practical skills and academic research methods.

The next seven competencies are used as intended learning outcomes of the programme:

- Researcher
  Is able to identify market opportunities, trends and developments for an international market, describe information needs (with an academic approach) and can brief a researcher based on these insights and is able to interpret research results critically.
- Innovator
  Is able to operate as an innovator in a production environment, prepare a product and/or market development plan which is targeted at the future and which anticipates and responds to the wishes of the target group and the possibilities of new technologies, using scientific theory.
- ProjectManager
  Is able to manage the creation, development and production of interactive media products and services, understanding technological backgrounds.
- Organizer
  Is able to identify if narrowing or broadening the scope is necessary in order to be able to have a publishable piece of work at the end of the programme.
- Polisher
  Is able to critical look at one's own work and identify the points that need polishing before it is ready for publication. Knows who to ask for feedback in order reach this goal.
- Communicator
  Is able to present the end product in a manner that shows structure and creativity. One communicates appealing for both a public with and without the in depth background knowledge.

- Craftsman
  Is able to apply and convert previous knowledge, skills and attitude into a game oriented artifact of excellent standard. The product (practice or research oriented) is ready for public.

The backbone to the programme is to ensure a student acquires competent research skills in the international field of game development which supports the Researcher competency. The Innovator competency encourages student to identify an innovative aspect in their project which can benefit, influence or move the active game development community further. Professional skills to plan, control project scope and maintain project focus along with stakeholder input and expectations are reflected in the competencies Project Manager and Organizer. To ensure the successful dissemination of the project to industry and research communities the importance of effective communication skills and the ability to connect to a wider audience and development committee is embodied in the Communicator competency. The release of research artefacts and publications requires that a student obtains an aimed level of quality through informed craftsmanship and iterative development captured in competencies Craftsman and Polisher respectively. Obtaining a level quality and clarity in research artefacts consumes a significant amount of time and plays a decisive factor in the success of the work.

The intended learning outcomes and the project results are regularly presented to industry as part of the Industry Advisory Board and recently in a set of Industry Roundtables at Force Field, Guerrilla Games, and Ubisoft Paris. The roundtables confirmed that with regard to game development Master graduates should understand their craft and be knowledgeable in their area of research. Graduates are expected to be open-minded, creative and critical thinkers making well-informed decisions and able to clearly and objectively communicate their ideas and decisions.

Considerations

The committee established that the master's programme is a logical next step for students that want to continue their study after finishing the bachelor's programme as well as other bachelor's programmes in the Creative Technologies Domain. The programme allows students to hone their craftsmanship while deepening their academic research skills. The committee appreciates the focus on training the best employees for the games industry not only in the bachelor's programme, but even in this master's programme. It is clear to the committee that the programme sees itself as a programme on top of the bachelor's programme. This is also how bachelor and master students describe the programme. However, the profile of the programme is not totally clear to the committee. Is it focussed on learning how to perform research, or is it also about diving deep into one topic to specialise? The committee agrees with the statement that the management made during the site visit that they need to build their profile further. This should coincide with stronger marketing to create more (international) awareness of the programme.

The programme uses seven competences as its intended learning outcomes. According to the committee, these intended learning outcomes are well described in terms of master's level and orientation and are in line with the domain-specific requirements for the domain of creative technologies. However, the committee feels that the competence framework needs to be brushed up a bit. For example, project management as a competence is not really a typical feature of the graduates and the committee questions if it should be. Together with the repositioning and reshaping the profile of the programme, the committee recommends to evaluate the competences. The programme is already considering alignment with the bachelor's competencies which would embed the master's competences better in the national profile of Creative Technologies and other international research institutes. If the programme decides to pursue this further, it needs to investigate

whether the competencies still match the profile of the master's programme.

The committee established that the industry has an important role in the programme, among others in the yearly industry advisory board. The committee appreciates the look-out of the programme for intensified cooperation and collaborations with other international programmes in the field of game development and technology, as well as related fields, including possible international partnerships.

Based on the interviews and examination of the underlying documentation, the assessment committee qualifies the intended learning outcomes as **satisfactory**.

Curriculum

The committee qualifies the curriculum as **satisfactory**. The programme uses a project-based approach in which students enter the programme with their own proposal and a portfolio showing their expertise, knowledge, and skills in the area they want to research and master. The project-based approach allows students to define the content and context of their research independent from a fixed set of offered classes which is focussed on research skills, research methodology, academic writing, and development practices in the games industry. The graduation project is planned across the full year providing substantial time and opportunity to explore the research topic at hand. The committee considers there is a connection between the aims and objectives of the programme and the objectives in the blocks, which are described in clear project briefs.

Students receive expert supervision during the full duration of their project by the assignment of a supervisor. The supervisor also acts as a central point of contact for matters relating to the study process. The structure provides students to learn actively and take responsibility for their learning processes themselves and studying independently.

The programme has a very thorough selection process in place and the qualifications of the incoming students are in line with the structure and contents of the intended curriculum.

Orientation

Standard 2: The curriculum enables the students to master appropriate (professional or academic) research and professional skills.

Findings

The goal in the programme is to prepare students for a role in R&D of any (large) game studio taking their skills further. The programme strongly promotes innovation, often in new or unfamiliar environments, and with an actual product or set of prototypes and proof of concept in mind. According to the programme, this can only be validated by the ability to make informed decisions and clear judgements based on objectively collected information which is well-communicated and presented taking the target audience (i.e. industry professionals) into account. With the year-long project students undertake, the programme believes these skills and knowledge are addressed in the curriculum.

Where practical development skills in either programming, design or art are strong when students join the programme, the programme noticed that academic research skills, like writing a clear research question and finding the right methodology, needed attention. For this reason the programme has maintained traditional classes and tutorials to teach students how to determine the right research question and subsequent research methodology in order to come to well-justified conclusions. Academic writing classes and support is provided to help students with writing their thesis. Research classes are facilitated by the ADE Research unit. ADE Research designs and studies engaging and playful experiences for their intrinsic capacity (entertainment and fun) and for their impact (learning and change).

In the bachelor's programme, the type of research students execute involves investigating existing research, data and tools. Often this research is comparative, finding the best method to achieve the intended goal most efficiently or to the best quality. In the master's programme, students take their research skills and application further, they will gather new data, develop new technology or workflows that can be used by other developers or can be taken further for future research. Master students take a game development challenge, construct a research question, develop a methodology that often includes a practical part and present their findings and conclusions to their target

audience. The problem they work on can be self-motivated, informed by the expertise of the staff, the ADE Research unit or industry.

In the upcoming years, the programme intends to include further integration of industry partners by inviting them to play a role in the selection of Master projects in order to check subject and the research area and relevance to the work field. This will also allow industry to take an active role in supervising student projects throughout the year to help ensure strong industry alignment and making it possible for the results to be taken forward in the production of future games.

Considerations
The committee considers that the programme enables its students to master appropriate research and professional skills, with a clear focus on preparing the students for a role in R&D of a game studio. The committee compliments the programme with tying in the research into the production process of game realisation. The programme can strengthen cooperation with the professional field further through finding research questions together.

According to the committee, the programme could be more clear upon its research profile and the preferred methodology. Also the marketing of the kind of research in the master's programme to the bachelors could be strengthened. It should be clear how the programme balances between craftsmanship and research. The committee agrees with the programme it should develop own standardized research methodologies and ways to present their results. The committee suggests that the role of research in the programme could be presented as bringing research into artefacts.

Based on the interviews and examination of the underlying documentation, the assessment committee qualifies this standard as **satisfactory**.

Contents
Standard 3: The contents of the curriculum enable students to achieve the intended learning outcomes.

Findings
The programme uses a project-based approach in which students enter the programme with their own proposal and a portfolio showing their expertise, knowledge, and skills in the area they want to research and master. The project-based approach allows students to define the content and context of their research independent from a fixed set of offered classes which is now focussed solely on research skills, research methodology, academic writing, and development practices in the games industry. The graduation project is planned across the full year providing substantial time and opportunity to explore the research topic at hand.

The year is divided according to four phases that each coincides with a ten week block. The programme acknowledges four phases in a full project carried out from an initial idea to a polished end product: concept, pre-production, production, and release. The programme projects common research stages to fit each phase to provide every student a uniform working methodology and shared expectations. The phases need to be subsequently addressed and each passed sufficiently; all phases contribute to a successful graduation with an equal weight.

Although the setup for all personal projects is equal with similar expectations each block, the different nature of the projects the programme accepts will require different research methodologies and can result in different types of end products. This is primarily apparent in the second and third phase. All students are required to present their work through a written document (thesis) and a final publication of their work that is aimed and ready to be shared with fellow researchers or developers in their field of study.

Each project phase contains a set of intended learning outcomes that are derived from the

competences. intended learning outcomes can be specific for a phase of the project while some are more generic in nature and persist throughout the whole year. The intended learning outcomes are equal for all projects the programme, independent from the actual content or research question that is addressed. This allows for shared expectations and a formalised research curriculum. The intended learning outcomes are broken down into assessment indicators which are useful for students in setting their goals as well as for self-assessment throughout the block. The intended learning outcomes are used in the assessment tool used for summative assessment.

The programme puts a strong focus on self-directed learning. Students take the lead in planning and scheduling their time and effort. They carry out their own research, find their own sources and gain or expand their skills and knowledge as needed for the project they undertake. Emphasis will be made on exploration, critical thinking, and well-tested ideas; all leading to informed decisions being evidenced, using clear examples and/or rigorous argumentation. There is a weekly day scheduled for lectures, workshops and tutorials on a variety of subjects and taught at levels varying from beginner to advanced. These are available to both CMGT Bachelor and MGT students; each individual can choose the activities that will meet their needs the most. Here, self-directed learning is essential for students to obtain the knowledge and skills specific to their area of research.

Each student is matched with a dedicated supervisor relevant to the field. The personal supervisor supports the research and development process and guides the student to relevant sources, new developments and making connections with other (external) experts in the field.

The research classes are supplemented with guest lectures that elaborate on the daily research practice in game studios as well as academia. The curriculum has set sessions for comprehensive discussions and debates in which students present their project progress and question their peer's decisions and approaches. Every block students present their work at least once in a workshop open to all bachelor and master students.

Considerations
The committee considers that the contents of the curriculum are very individual and enable students to achieve their personal intended learning outcomes, that are embedded in the learning outcomes of the programme. Each project phase contains a set of intended learning outcomes that are recognisable and demonstrably derived from the competences. The switch to a project-based approach allowed students to focus on a relevant topic of their own choice. The committee appreciates the possibility for students to dive deep into their subject. The committee supports the intention of the programme to find industry mentors for students on topics the staff does not have expertise on.

Based on the interviews and examination of the underlying documentation, the assessment committee qualifies this standard as **satisfactory**.

Structure
Standard 4: The structure of the curriculum encourages study and enables students to achieve the intended learning outcomes.

Findings
Every block has a specific project brief document that sets the expectations for the current phase, the intended learning outcomes and assessment indicators, a link to relevant resources and a timeline for the block which the student can use to plan their own activities. All phases are standardized to adhere to the same project cycle, which consists of a loop that happens once a block, a subloop that happens once a week, and another subloop that happens on a daily basis. The project loop is rooted in Project Based Learning, agile development, and relies heavily on feedback. The evidence of this is stored in an artefact called the 'Learning Log', which can be seen as an extended portfolio method of tracking evidence.

Students receive expert supervision during the full duration of their project by the assignment of a supervisor. The supervisor also acts as a central point of contact for matters relating to the study process. The supervisors guide students to relevant sources, including industry resources and contacts, offer new ideas and insights, set standards, and safeguard the educational process.

Students schedule meetings on a weekly or fortnightly basis with their supervisors to discuss issues and obtain feedback on progress. This working methodology enables the creation of a master/apprentice relationship between a student and a supervisor.

In the student chapter, students are positive about the personal supervision they get: 'The supervision I'm getting is very good. I feel like my supervisor and I are on the same page regarding what the project should look like. If I bump into issues, which I already had a lot of, he is able to help or at least point me in the direction where the mistake could possibly be. I haven't really been contacting a lot of other staff yet because I didn't have to since my supervisor is able to help me with pretty much everything up until this point.' Supervisors are not always expert on the research topic of the student: 'It is difficult to get feedback on an oddly specific topic such as fur simulation. The reason I'm researching fur simulation is because not a lot of people do it, and I want to make it more accessible for others. This also means that my supervisors are not always able to give intricate feedback on something this complex. To this end, they are reaching out to industry contacts to answer my questions.'

The lab day is a fixed scheduled day in the week where students meet and attend classes and workshops on a variety of research and development topics. This day is mandatory for all students and it focuses on subjects relevant to all students like research and writing skills, offers opportunities for feedback and sharing project progress with fellow students, and is the physical point for

communication about the programme, its expectations and criteria.

For both bachelor and master students there is a weekly day scheduled for lectures, workshops and tutorials on a variety of subjects and taught at levels varying from beginner to advanced. Each individual can choose the activities that will enrich their studies the most. This system also allows students to request or propose topics for the lectures and workshops. Guest lectures by industry experts and leading companies ensure there is relevant industry-led content, alongside the Everything Procedural Conference and other networking events.

Expert groups are the implementation of educational learning communities. Each learning community can be considered a special interest group that consists of students, teachers, supervisors, experts in the field and industry that share knowledge and skills in a specialist area. They regularly meet, have their own communication channels and undertake (extra-curricular) activities. For instance, going on field trips to companies or museums, or visiting conferences. The programme wants to make sure that master-students start playing a more significant role in the expert groups. This could either be a more leading or senior role that fits their future career; sharing and showing their skills and research and helping solve problems junior students face. Similarly, the programme wants to connect more to other international research institutes through contributing to a shared research library and with plans for publishing its own applied research journal.

A student agrees with the extension of the research groups in the student chapter: 'I definitely feel the inclusion of the Master's students in the teaching of the Bachelors and involvement with the expert groups should be kept and developed more. Both presenting and teaching are important skills to have and will help you in your further career. It is also very nice to have access to the Bachelor students for some initial test runs of

your research or to get some validation of your methodology.'

Across 2014-2018 the programme had a total of five students quit and eight delayed students, of which four are still enrolled. The programme identified two main reasons; personal circumstances and professional aspirations.

Considerations

The committee considers that the structure of the curriculum with the four blocks enables students to achieve the intended learning outcomes. The committee appreciates the fact that students are working closely together with their supervisor. The structure provides students to learn actively and take responsibility for their learning processes themselves and studying independently. Because of the small-scale nature of the programme, the weekly MGT Lab day, and strong supervisor-student relationship there is a strong community feeling amongst the MGT students. However, the committee agrees with the programme that the expert groups could be elaborated further to strengthen the learning community and to help students sharing their findings and skills. Without a well developed learning community the programme is rather divided into separate individual programmes for the students.

Based on the interviews and examination of the underlying documentation, the assessment committee qualifies this standard as **satisfactory**.

Incoming students

Standard 5: The curriculum ties in with the qualifications of the incoming students.

Findings

The programme puts a strong focus on the intake which is considered the initial phase of the study programme. The complete intake procedure for the programme consists of five mandatory components: a motivation letter (online), resume and diploma(s) (online), a portfolio (online), a research proposal (online) and a selection interview (on-site). Four of the components are completed digitally after applicants sign up for the course. The final component is a personal selection interview for which the applicant is invited when the research proposal meets the requirements.

In order to guarantee a strong fit to the programme applicants complete a research proposal template in which they describe the project, subject, and the specifics of the research question they want to work on. They also need to provide evidence of having sufficient skills and understanding of the subject they have chosen. This can be done by showing portfolio materials, previous research documentation, or relevant industry experience.

Research proposals are assessed according fixed criteria. As a tool the research proposal helps the programme decide the suitability of applicants for the programme, which relies heavily on the supervision and expertise the programme can offer to match both their aims and the programmes' expectations.

During the selection interview the applicant discusses their project proposal, previous experience regarding the topic they want to research and expectations of the programme with two MGT staff members. Each applicant will get a score based on their proposal and interview which is translated into a 100-point scale. Applicants that score a minimum of 60 points total or more are considered within the number of places available.

In 2017 and 2018 the programme had 25 and 24 applicants. Of these applicants, 35% are from the bachelor's programme, and 60% are international students. In 2017, 10 students were accepted of which 8 from the bachelor's programme and a total of 3 international students. For 2018, these numbers are 9 students in total, of which 4 from the bachelor's programme and again 3 international students.

Considerations

The committee examined the admission requirements for the programme and concluded that the qualifications of the incoming students are in line with the structure and contents of the intended curriculum. The committee is of the opinion there is a very thorough intake procedure in place, which enables the programme to find the right applicants with appropriate game development skills for this unique programme with a strong focus on self-directed learning and research.

Based on the interviews and examination of the underlying documentation, the assessment committee qualifies this standard as **good**.

Staff

The committee qualifies the staff as **good**. There are forty teachers, available for the bachelor's and master's programme. Over 50% of these staff members is international and most of them have games industry experience. The committee establishes that the staff team is highly qualified for the realisation of the curriculum in terms of content and educational expertise. They are very motivated to work with this specific group of students.

Standard 6: The staff team is qualified for the realisation of the curriculum in terms of content and educational expertise. The team size is sufficient.

Findings
There are forty teachers (27 fte) available, for both the bachelor's and the master's programme. The teaching team has significant and diverse games industry experience. Over 50% of the staff is international.

Given the number of staff coming from industry, the programme has ensured they also receive the essential educational support and training: didactics and BKE (Basic University Examiner Qualification), along with relevant Master studies for those who did not already have them. Of the staff body 20 have or are currently completing a Master level study, and 5 have completed a PhD. 75% have been BKE certified. Due to the games industry background staff generally possess a strong intrinsic motivation to keep up-to-date with latest industry developments. The programme also ensures staff have opportunities to attend industry relevant conferences such as the Game Developers Conference and GamesCom.

The option of placing staff back in industry for a set period of time is being actively pursued. Having good industry partners allows the programme the possibility for them to welcome a staff member to temporarily join their team. Given this, one of the future goals of the programme is to see at least two staff members making use of this option each academic year.
Professors and researchers of the ADE Research unit are strongly involved with teaching and supervision in the programme. They have time allotted for educational activities, allowing them to promote, develop, and support research development with the educational staff and students.

With regard to staff skills and knowledge, staying relevant and up to date with a rapidly evolving and highly competitive industry has forced us to think of more substantial ways to deal with content supervision. In recent industry roundtables focused on the masters programme and its future development the programme started to investigate possible collaboration on research topics as well as possible industry mentorship which could take the form of regular meetings, joining project presentations, discussions, or poster sessions. Industry interest is very positive leading to start this in 2018-2019, with further implementation (including intake) in following academic years.

Considerations
The committee establishes that the staff are highly qualified for the realisation of the curriculum in terms of content and educational expertise. They are very motivated to work -mostly individually- with these dedicated students. The staff are recognized within the games industry. If the research of the specific student gets very specialised, the network of BUas is being used to find appropriate specialised guidance. The committee welcomes the intended industry involvement in guiding the students.

Based on the interviews and examination of the underlying documentation, the assessment committee qualifies this standard as **good**.

Services and facilities

The committee qualifies the services and facilities as **good**. The infrastructure such as accommodation and facilities is sufficient for the realisation of the curriculum. The programme is well accommodated by. The committee is enthusiastic about the extensive individual supervising of the students. The supervisors, the study career coach and the student counsellor complement each other and the tutoring is an integral part of the education.

Accommodation and infrastructure

Standard 7: The accommodation and material facilities (infrastructure) are sufficient for the realisation of the curriculum.

Findings

Currently BUas is in the middle of two building relocations. In September 2018 the programme started at a temporary building for just one year. After this the programme will relocate to the main location again, which is currently in development towards a state-of-the-art campus. The new campus will bring together all study programmes of BUas which are currently spread across the city of Breda, in one location. The campus will be fully operational at the end of 2019.

The programme has a dedicated room (MGT Lab) scheduled one day every week. This room is used for teaching but can also be used as a silent study or meeting room when there are no classes. In addition students have access to all shared facilities with the bachelor's programme. These include:
1. Gamelabs - the work simulated environments are the four main areas where students experience full day contact time on at least two days of the week,
2. Technical Drawing Room - specialist space for the technical drawing skills and knowledge,
3. Life Drawing Room - specialist space for the practise of foundational art skills and knowledge,
4. Play Space and VR/AR Testing Room - research, play-testing and Virtual Reality development,
5. Library of Books and Games - collection of game development related books, board and video games.

Through the library and the ADE Research unit students have access to journals and research papers from different recognized sources, including Sage Online Journals, Springer Journals, ScienceDirect (Elsevier), and Taylor and Francis. On request students can get access to papers and publications for the ACM Digital Library.

Besides consumer hardware, the programme also gives students access to video game console development kits from Sony, Microsoft, and Nintendo.

The MGT Lab is currently only available for one day a week. The programme is investigating the need and availability for this room for the next Academic year. The programme is also investigating how the physical environment can help increase visibility of the programme and collaboration between the master and bachelor students.

Considerations

The committee considers that the infrastructure such as accommodation and facilities is sufficient for the realisation of the curriculum. According to the committee, the programme is able to create an inspiring, international meeting place for students, staff and industry – filled with activities and dynamism. Students have access to state-of-the-art gaming facilities. Supporting elements like Cradle Lab are good for students that need it.

This year, the facilities are a challenge for the programme, mainly because the building has less capacity then desired. The committee believes the new building will facilitate the infrastructure that will fit the programme very well. The new campus will facilitate innovative education and business practices.

Based on the interviews and examination of the underlying documentation, the assessment committee qualifies this standard as **good**.

Tutoring and student information
Standard 8: The tutoring of and provision of information to students are conducive to study progress and tie in with the needs of students.

Findings
The programme provides a student handbook that explains year and block procedures, including competencies and assessment. For each phase the programme provides a project brief that describes goals, intended learning outcomes, additional requirements, deliverables and a timeline. The handbook and project briefs are published on Cum Laude which also includes the official Teaching and Examination Regulations.

Every block starts with a kick-off in which the new project brief is presented for all students to attend. The kick-off is the starting point for a new phase in which all important requirements for the next steps in research and development are carefully explained and elaborated upon.

Communication between teaching staff, supervisors and students is regular and direct through the weekly classes or personal supervision. Any questions on project requirements or feedback on project progress can be easily addressed and promptly answered.

MGT has an study career coach who advises students on study skills and study career management through individual meetings. The study career coach helps to monitor the student's professional and personal growth in the educational context. Support is offered in the area of personal development, setting and reaching personal goals, how to avoid procrastination, planning and time management.

In the case of medical or personal circumstances that influence their study, the student can turn to the student counsellor. Conversations between student and counsellor are confidential. In situations that relate to exceptional personal circumstances of students, the counsellor also acts as an advisor to the Board of Examiners.

Considerations
The tutoring of and provision of information to students are conducive to study progress and tie in with the needs of the students, according to the committee. The committee is enthusiastic about the extensive individual supervising of the students. The supervisors, the study career coach and the student counsellor complement each other and the tutoring is an integral part of the education.

Based on the interviews and examination of the underlying documentation, the assessment committee qualifies this standard as **good**.

Quality assurance

The committee qualifies the quality assurance as **good**. The programme has an explicit and widely supported quality assurance system in place which is embedded in the agile development practices. The several committees act as checks and balances in the organization and development of the education.

Standard 9: The programme has an explicit and widely supported quality assurance system in place. It promotes the quality culture and has a focus on development.

Findings
Most of the processes are organized in cycles where things are planned, executed, and evaluated, as is outlined in the Quality Assurance Policy of BUas.

A core team is in place that is responsible for the development of the programme. Together they write and create the project brief, ILOs and assessment tool for each phase and reviewed by the full team to secure validity. In case changes are proposed or improvements can be made the core team will evaluate and discuss implications and if needed take these forward. The team typically meets twice every block; at the start of the block to discuss current affairs and action points for the block ahead, and towards the end of the block to finalize open action points and finish preparations for the next block.

The full team also meets at the start of the block to make sure every supervisor is aligned and aware of what is expected. In case needed the team meets during the block, although in between communication is often more informal. The full team also meets before the grades for each block are published to discuss results and align assessment.

Next to these collaborative team efforts the end of block evaluations are crucial to improving processes and projects every block. The end of block evaluations consists of multiple parts. Firstly, the programme organizes roundtable discussions for which all students are invited. These roundtable discussions are fed by data gathered by the student representative of the programme or among the student group throughout and at the end of the block. In a meeting with multiple teachers and students the programme discusses issues and are able to ask for clarifications or explain its intentions. The meeting is concluded with a number of action points going forward. Secondly, the full team evaluates the block in a one-hour retrospective discussion. Improvement points are shared on different levels ranging from information clarifications to students, practical impediments, or issues regarding supervision. Thirdly, a number of analyses are run on the project's data, both at the level of formative and summative assessment which allows the programme to see grade averages and variation of grades, and check the number of documented feedback from teachers.

The programme has a number of committees in place. The academy's Participation Council ('Deelraad') has a connection with the academy's director. They meet every eight weeks and discuss ongoing matters such as facilities, vacancies for management positions, and the management contract. Furthermore, in aiming to create a more transparent culture budget results and yearly management contracts are also shared with the Participation Council. The Participation Council is also connected to the Participation Council ('medezeggenschapsraad') of BUas through which they are able to stay connected to university-wide developments. The programme also has a Degree Programme Committee who has the role to advise and monitor quality and the TER and curriculum changes.

The programme also has the Degree Programme Committee (DPC) who has the role to advise and monitor quality and the TER and curriculum changes. The committee consists of 3 teachers and students, they convene 4 times a year.

Considerations
The committee considers that the programme has an explicit and widely supported quality assurance system in place which is embedded in the agile development practices. The system promotes the strong quality culture of striving for excellence. The committee appreciates the extensive end of block evaluation that approaches the quality measurement from different sides. The several committees act as checks and balances in the organization and development of the education.

Based on the interviews and examination of the underlying documentation, the assessment committee qualifies this standard as **good**.

Assessment

The committee qualifies the assessment as **good**. The programme has a thoroughly worked out and adequate assessment system with four assignments that allow students to focus their time and effort on the development of their research project. The intended learning outcomes and assessment criteria fit the different projects of the students. The committee is positive about the continuous feedback, which is pivotal in learning. The assessment procedures are well worked out and are clear to the students. The Board of Examiners and the Assessment Committee perform thoroughly and pro-actively their tasks to control the quality of the exams, the assessment procedures and graduation research projects.

Standard 10: The programme has an adequate student assessment system in place.

Findings

Assessment system
Each of the four blocks of the programme is worth 15 EC. Credits are awarded when the intended learning outcomes are assessed through sufficient provision of evidence. All four blocks need to be passed subsequently, where for each phase a student gets two opportunities. The last phase sets the final grade for the project. All projects have a fixed set of deliverables that together should evidence the achievement of the learning outcomes. Students work on these deliverables during the full year, where the focus can shift between phases.

Because of the nature, duration and scale of the project, students have to create a Project Plan in the first block that needs to be maintained and updated in the following blocks. Each block students keep a learning log in which they keep track of their progress and development. All projects require a written report; the thesis. The thesis presents the research project according to common research components that include literature review, methodology, data collection and conclusions. The thesis identifies a valid research question, shows an appropriate methodology, sufficient data, and a well-argued analysis of the data. The thesis concludes with an evidence-based answer to the research question. Overall, the thesis forms an argument that the research question has

been answered and that the answer is credible and reliable by current standards.

All students create artefacts to inform their research. Depending on the type of research and project the forms these artefacts can take show a wide variety. They range from surveys, interviews, prototypes, playtest recordings, renders, character rigs, tools, software, etcetera. All products relevant to the project need to be delivered as appendices to the thesis or as separate evidence, including supporting documentation (e.g. tool or product manual) if required.

Each block features several occasions where students need to present the progress made or current state of their project. During these presentations they share their successes and obstacles with fellow students and supervisors and defend their findings through debate.

In addition to the internal presentation(s), students need to prepare a final 'publication' of their work that is aimed and ready to be shared with fellow researchers or developers in their field of study. The publication can take many forms, like a slide-deck, poster session, conference presentation, research paper, video (e.g. two minute papers), online or magazine article.

Feedback can take many forms of which most notable is the supervisor-student relationship. They maintain a constant conversation, in person or through the learning log, on the progress and development of the student and the project. This is

supplemented with opportunities provided for feedback on academic research and writing from the research lecturers as well as in-class from peers through presentations, discussions and debate.

The assessment of the first three phases is done 'behind closed doors' by the supervisor and selected teaching staff on both research and content. Summative assessment is always a team effort ensuring the four-eye principle. To ensure reliability each assessment is carried out by a team that minimally consists of the supervisor, a second examiner and an expert on (academic) research. In addition the full team meets before the grades are published to discuss progress and assessment of each individual student and the students as a group, to ensure calibration and alignment of expectations and grading across all MGT projects.

For assessment staff uses an assessment tool that mentions the intended learning outcomes for that phase and the indicators used to score the work towards the intended learning outcomes. To ensure transparency on the grading criteria this tool is available for students from the beginning of the block, allowing for self-assessment and opportunities to discuss their progress with their supervisor. Preceding assessment students present their progress and work in a public presentation to supervisors, peers, Bachelor students, and possibly externals. This 10-15 minute presentation will be concluded with a Q&A.

Assessment of the final phase takes place in a panel format. In this oral defense the student presents (10-15 minutes) and defends (10-15 minutes) its project in front of the supervisor, a second examiner and an external advisor. The external advisor is not an assessor but their advice and feedback will be taken into account and recorded. The grade is finalised during a final calibration between assessors and external advisor, and the student will hear the result directly after it has been decided.

Students are positive about the assessment in the student chapter:
'The assessment process itself works reasonably well. Because of the variety of projects supported in the Master the competencies are quite broad which can make it difficult to quantify them exactly. This also applies to the assessment criteria, which makes it a bit difficult to instantly grasp them, ticking all the checkboxes feel very bureaucratic in a way leaving not a lot of room to take personal progress into account. Other than that I am quite happy the way assessment and competencies are handled.'
'We have access to the assessment tool that our supervisors use for grading our work, which is very useful. The only thing we provided as feedback was the fact that the value descriptions used for the checkboxes were not very clear. This has been improved for the next assessment.'
'The assessment we got I feel was pretty fair, or at least it was for me. We know who is grading our work and can always contact them to get some feedback before the actual grading start.'

Quality Assurance in Assessment
The assessments are based on the ADE Assessment Policy and the Testing Framework of BUas and described in the MGT Assessment Plan and TER. To assure the qualitative standards of the assessment processes the programme organizes staff trainings, and have the Assessment Committee and Board of Examiners in place. As for the staff training the programme continuously trains staff in both formative and summative assessments. This does not only include formal BKE training but also the consistent use of staff meetings and year teams meetings to refresh the team on the processes and standards.

The Assessment Committee is instrumental in laying monitoring assessment quality. The Assessment Committee systematically discusses the results through learning analytics and made queries in case of doubtful results on validity and reliability. They check project briefs, randomly check quality of feedback, and review project outcomes each block. The Board of Examiners' role is to

safeguard the quality of assessment of graduation projects. They oversee the graduation assessment, do randomised spot checks on graduate projects and take responsibility on the final steps of graduation.

The focus of the programme in the near future is on further improving staff and student's mutual understanding of formative assessment and working with feedback. A central challenge here is to balance hands-on mentoring at the development level with formal written feedback, which sometimes takes a lot of time to maintain. Finally, the programme is increasing its reliance on expert groups in giving feedback on work and processes, accepting even more external influences into the learning context.

Considerations
The committee has established that the programme has a very thoroughly worked out and adequate assessment system with four clear assignments that allow students to focus their time and effort on the development of their research project. The intended learning outcomes and assessment criteria fit the different projects of the students. The committee is positive about the continuous feedback, which is pivotal in learning. The committee is impressed by the assessment procedures. They are well worked out and very clear to the students. The policy ensures clear processes that are in line to the didactic philosophy.

Every project, student grade themselves. The own grades of the students are very close to the grades of the staff, which shows the committee there is a high level of self-awareness that is created with the assessment system throughout the learning process.

The Board of Examiners and the Assessment Committee perform thoroughly and pro-actively their tasks to control the quality of the exams, the assessment procedures and graduation research projects. The Board and Assessment Committee show good knowledge of the programme and its assessment.

Based on the interviews and examination of the underlying documentation, the assessment committee qualifies this standard as **good**.

Achieved learning outcomes

The committee qualifies the achieved learning outcomes as **sufficient**. The programme judges the level of achievement by assessing the thesis and artefacts of the students at the end of the year. The final work of the students illustrate that the students have achieved the competences as formulated. The skills, knowledge and attitude gained in the programme help students follow their career path as can be seen in data and examples provided.

Standard 11: The programme demonstrates that the intended learning outcomes are achieved.

Findings

Student products
The programme judges the level of achievement by assessing the thesis and artefacts of the students at the end of the year, as described in standard 10 (Assessment). The programme has 38 alumni from 2014-2018. Final grades range from 5.60 to 9.70, with an overall average of 7.76.

Working field
Of the alumni 68% is living and working in the Netherlands and 32% abroad of which Sweden, Canada and Germany make up the highest number. Looking at the disciplines, the programme has graduated 53% programmers, 15% designers and 32% visual artists. They find jobs in either game development (53%), IT (17%), games research (12%), education (12%) or as freelance artists (6%), company size ranges from 1 to 10.000+ (Ubisoft). Typical roles covered are; software/rendering engineer (18%), programmer (18%), lead (18%), specialist artist (18%), researcher (12%), specialist designer (8%), and lecturer (8%).

The programme is increasingly looking to harness the importance of the alumni for the programme. The programme is not satisfied yet with the use of the alumni network to its benefit. In this regard BUas has started an alumni project in 2016-2017. At this point the result is a database that will be used further to invest more in BUas alumni engagement.

Considerations
The committee assessed fifteen recent graduation projects of the programme (appendix 5) and established that all met the requirements for graduation. These outcomes illustrate that the students have achieved the competences as formulated. On average the projects are of good quality. They represent the state of the art in the actual field. Most of the outcomes provide an original contribution to the development and application of ideas and their future use or development.

The broad focus of the programme is reflected in the student work; the work goes different directions, from very narrow to broad subjects and from prescriptive to descriptive. Prototypes, designs and experiments are seen. The committee determines that some students are deepening their knowledge and skills, for example by learning from others. This should not be seen as research, according to the committee. This way, the master's programme is more like a personal development year. In some works a critical reflection on the methodology (reliability, validity) is non-explicit. The committee advises the programme to sharpen its profile (as earlier stated) and redefine the requirements for the student work based on this profile.

The projects are graded similarly by the committee compared to the programme. The grading is not always clear to the committee; with some student works two marks are given, for product and report, which makes it unclear what they had to deliver. Also, the underpinning is limited. The committee believes that the programme will use

new assessment forms from now that prove to be better.

The committee established that the programme maintains an open dialogue with the Industry Advisory Board and alumni to ensure that the qualities of the graduates are aligned with the demands of the industry. According to evaluations and interviews with the working field, the committee finds that students are meeting their expectations. The skills, knowledge and attitude gained in the programme help students follow their career path as can be seen in data and examples provided.

Based on the interviews and examination of the underlying documentation, the assessment committee qualifies this standard as **satisfactory**.

Breda University of Applied Sciences

Attachments

Attachment 1 Assessment committee

Naam panellid (incl. titulatuur)	Korte functiebeschrijving van de panelleden (1-3 zinnen)
ir. René S. Kloosterman	René Kloosterman zit met regelmaat visitaties voor
prof. dr. B.A.M. (Ben) Schouten BA	Ben Schouten is hoogleraar Playful Interaction aan de faculteit Industrial Design van TU Eindhoven en Lector Design for Games and Play aan de Hogeschool van Amsterdam.
Menno Deen PhD	Menno Deen is onderzoeker, docent en award winning game ontwikkelaar. Internationaal spreker en jurylid
Benoit Martinez	Benoit Martinez is Lead Artist & Technical Art Director, Ubisoft; Paris, France
L. Limburg	Laurie Limburg is student Liberal Arts and Sciences aan de UU, tevens is zij voorzitter van de Studievereniging Atlas

Het panel is ondersteund door drs Linda van der Grijspaarde, secretaris

Attachment 2 Program of the assessment

Sibeliuslaan, Breda

26 February 2019: Exploration

10.30 – 11.00 **Welcome to the panel**
  Welcome and kickoff

11.00 – 13.00 **Internal meeting and lunch**

13.00 – 13.45 **Management**
Introduction, purpose and program of the assessment

14.00 – 15.30 **Showcase & Cradle visit**
Demonstration-possibility for the programmes

15.45 – 16.45 **Representatives of the professional field and alumni**
Connection between programme and professional field, examination and intended learning outcomes

17.00 – 17.30 **Feedback of preliminary findings**
Focus-points for the next assessment day

27 February 2019: In-depth Assessment
09.00 – 09.30 **Arrival of the panel and internal meeting**

09.30 – 10.30 **Teaching staff CMGT (including a member of the Degree Programme Committee)**
Intended learning outcomes, programme, testing, staff expertise, academic climate

10.45 – 11.45 **Teaching staff MGT (including the associate professor and a member of the Degree Programme Committee)**
Intended learning outcomes, programme, assessment, staff expertise, academic climate

11.45 – 12.45 **Lunch and document review**

12.45 – 13.30 **Board of Examiners (including a member of the Assessment Committee)**
  Assessments and assessment policy, graduation

13.45 – 14.15 **Showcase**
Demonstration-possibility for the programmes

14.30 – 15.30 **Students CMGT (including a member of the Degree Programme Committee)**
Programme, assessment, staff expertise, graduation

15.45 – 16.45 **Students MGT**
Programme, assessment, staff expertise, graduation

16.45 – 17.45 **Additional research, formulating conclusions**

17.45 – 18.00 **Feedback on findings and conclusions**

Attachment 3 Documents

- 2018-19 Assessment Plan Bachelor and Master
- CMGT Curriculum Map (Project Overview)
- MGT Curriculum Map
- Examples of Project Briefs Y1 ,Y2 and Y3 and assessment forms
- This is IGAD! (presentation)
- Body of Knowledge and Skills – Creative Media and Game Technologies
- Student Handbook IGAD
- MGT Student Handbook
- HBO Monitor Alumni
- TER HBO Bachelor Creative Media and Game Technologies (differentiation Architecture and Design) and Game Architecture and Design 2018-2019
- TER HBO Master's Programmes ADE Professional Master in Media Innovation, Master Game Technology
- Listing of research outputs: CMGT/MGT 2012-2018
- Assessment Policy 2018-2021 Academy for Digital Entertainment Domain Media/Domain Games
- Graduation Projects of 15 bachelor and 15 master students