Thesis assessment rubric BVG (YNH80312)

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User instructions

In the BSc-thesis assessment form, a number of criteria for the assessment of the BSc-thesis are mentioned. The *rubric* can be used as a tool to determine the appropriate mark for each criterion. In the rubric, which has the form of a table, each line discusses one *criterion* for assessment, each column gives a *level* for the grading, and each cell contains the *descriptor* of the level for that criterion. The criteria in the rubric follow the order of the criteria in the assessment form for the BSc thesis of BPW, BBI, BBT and BML. For more information on the analytic rubric, see e.g. Andrade (2005), Reynolds *et al.* (2009), URL1, URL2.

The main intention of using a rubric is to enhance the homogeneity of assessments and the ability to communicate about assessments both with students and with colleagues. Furthermore, it clarifies to students the expectations of the supervisor and helps the supervisor to structure feedback during the process of thesis research. However, it should be noted that even with the use of a rubric some arbitrariness will remain.

In a few cases the criteria were split into two or more parts because the description of the criteria clearly covered different subjects. The mark for the criterion should in such a case consist of the average mark for the different subjects or if one criteria is far more important for that particular thesis, that criteria should be should be weighted more.

When determining the mark of a certain criterion, always start at the lowest level and test if the student should be awarded the next higher mark. Note that in some cases achievements of a lower level are not repeated at the higher level because the lower level achievements are implicit in the higher levels. If a level has a range of marks, choose the most appropriate one (consider the description of the level of performance as a continuum, rather than a discrete description). Since the final marks of a thesis usually range between 6 and 9, individual levels have been established for the marks of 6, 7 and 8. When performance is at the 9-10 level, it is necessary to decide whether the student is on the low edge (9) or high edge (10) of this level. Descriptions at the 9-10 level tend to describe the ultimate performance (10). Hence, if a student performs well above 8, but below the description at the 9-10 level, a 9 would be the appropriate mark. Keep in mind that each line in the rubric should be read independently: it could be that a student scores a 1-3 on one criterion and a 9-10 on another.
The final mark of the thesis is determined using the BSc-thesis assessment form. The main categories (groups of criteria: research competence, research plan, execution research, report, presentation, examination) should have an assessment of 'sufficient' (>5.5) before the total thesis work can be considered as sufficient. So, no compensation between main categories is possible to obtain a final mark of 5.5.
Keep in mind that the difference between a BSc and MSc thesis is that a BSc thesis is more intensely supervised than an MSc thesis and/or a BSc thesis project is shorter and less complex project than an MSc thesis project.

Please report any positive or negative experiences and suggestions when using this rubric to assess the BSc-thesis Nutrition&Health to bvg@wur.nl (programme team Nutrition&Health).

References

- Andrade, H.G, 2005. Teaching With Rubrics: The Good, the Bad, and the Ugly. *College Teaching* **53**, p. 27-31.
- Reynolds, J., R. Smith, C. Moskovitz and A. Sayle, 2009. BioTAP: A Systematic Approach to Teaching Scientific Writing and Evaluating Undergraduate Theses. *Bioscience* **59**, p. 896-903.
- URL1: http://jonathan.mueller.faculty.noctrl.edu/toolbox/rubrics.htm Jon Mueller (2010) North Central College, Naperville, IL.
- URL2: http://en.wikipedia.org/wiki/Rubric_(academic) Wikipedia, 7-11-2010.

A1) Research competence (30-40%)					
1. Initiative, pro-activity and creativity					
1-3	4-5	6	7	8	9-10
Student shows no initiative or ideas at all.	Student picks up some initiatives and/or ideas suggested by others (e.g. supervisor), but the selection is not motivated.	Student shows some initiative and/or together with the supervisor develops one or two ideas on minor parts of the research.	Student initiates discussions on ideas with supervisor and develops one or two own ideas on minor parts of the research.	Student has his own creative ideas on hypothesis formulation, design or data processing.	Student develops innovative hypotheses, research methods and/or data-analysis methods.
2. Commitment and perseverance					
1-3	4-5	6	7	8	9-10
Student is not motivated. Student escapes work and gives up regularly.	Student has little motivation. Tends to be distracted easily. Has given up once or twice.	Student is motivated at times, but often, sees the work as a compulsory task. Is distracted from thesis work now and then.	The student is motivated. Overcomes an occasional setback with help of the supervisor.	The student is motivated and/or overcomes an occasional setback on his own and considers the work as his "own" project.	The student is very motivated, goes at length to get the most out of the project.
3. Time management					
1-3	4-5	6	7	8	9-10
No planning is made.	Planning is without any detail, not feasible and backup strategies are lacking.	Planning is somewhat concrete but not feasible and backup strategies are lacking.	Planning is quite concrete, but some aspects of the planning are not feasible and backup strategies are insufficient.	Planning is quite concrete and feasible, but backup strategies are insufficient.	Planning is concrete and feasible and backup strategies are sufficient.
Final version of BSc-thesis or presentation hugely overdue (without a valid reason).	Final version of BSc-thesis or oral presentation at one-two months overdue (without a valid reason).	Final version of BSc-thesis or oral presentation at most a month overdue (without valid reason).	Final version of BSc-thesis or oral presentation at most two weeks overdue (without valid reasons).	Final version of BSc-thesis or oral presentation at most one week overdue (without valid reasons).	Final version of BSc-thesis or oral presentation finished within planned period.
4. Critical and self-reflective capacity					
1-3	4-5	6	7	8	9-10
Student doesn't realize the occurrence of strengths and weaknesses of the research (plan).	Student is not able to point out strengths and weaknesses of the research (plan).	Student is able to point out some strengths and weaknesses of the research (plan).	Student is able to point out many of the strengths and weaknesses of the research (plan).	Student is able to point out most of the strengths and weaknesses of the research (plan).	Student is able to point out most of the strengths and weaknesses of the research (plan) and is able to give some constructive suggestions for improvement.

5. Handling supervisor's comments					
1-3	4-5	6	7	8	9-10
Student does not pick up suggestions and ideas of the supervisor.	The supervisor needs to act as an instructor and constantly needs to suggest solutions for problems.	Student incorporates some of the comments of the supervisor, but ignores others without arguments.	Student incorporates most or all of the supervisor's comments.	Supervisor's comments are weighed by the student and asked for when needed.	Supervisor's comments are critically weighed by the student and asked for when needed, also from other staff members or students.
6. Analysis and processing (literature) data: a) experimental work, b) data analysis, c) model development, d) literature analysis. Only assess those criteria that are relevant for the BSc-thesis of the student.					
1-3	4-5	6	7	8	9-10
a) Experimental work Student is not able to setup and/or execute an experiment.	Student is able to execute detailed instructions to some extent, but errors are made often, invalidating (part of) the experiment. Every single step has to be supervised.	Student is able to execute an experiment that has been designed by someone else (without critical assessment of sources of error and uncertainty). Check of supervisor is necessary.	Student is able to execute an experiment that has been designed by someone else. Takes sources of error and uncertainty into account in a qualitative sense.	Student is able to judge the setup of an existing experiment and to include modifications if needed. Takes into account sources of error and uncertainty quantitatively.	Student is able to setup or modify an experiment exactly tailored to answering the research questions. Quantitative consideration of sources of error and uncertainty. Execution of the experiment is flawless.
b) Data analysis Student is lost when using data. Is not able to use a spreadsheet program or any other appropriate data-processing program.	Student is able to organize the data, but is not able to perform checks and/or simple analyses.	Student is able to organize data and perform some simple checks; but the way the data are used does not clearly contribute to answering of the research questions and/or he is unable to analyse the data independently.	Student is able to organize the data, perform some basic checks and perform basic analyses that contribute to the research question.	Student is able to organize the data, perform commonly used checks and perform some advanced analyses on the data.	Student is able to organize the data, perform thorough checks and perform advanced and original analyses on the data.
c) Model development Student is not able to make any modification/addition to an existing model.	Student is able to make minor modifications to an existing model, but errors occur and persist. No validation.	Student is able to make minor modifications (e.g. a single formula) to an existing model. Superficial validation.	Student is able to make major modifications to an existing model, based on literature. Validation using some basic measures of quality.	Student is able to make major modifications to an existing model, based on literature or own analyses. Validation using appropriate statistical measures.	Student is able to develop a model from scratch, or add an important new part to an existing model. Excellent theoretical basis for modeling as well as use of advanced validation methods.

d) Literature analysis Student is not able to organize literature and come to a synthesis.	Student is able to organize the literature, but is not able come to a synthesis that results in own insights, hypotheses or conclusions independently.	Student is able to organize literature and comes to a synthesis that results in own insights, hypotheses or conclusions; but the way the literature is used does not clearly contribute to answering of the research questions	Student is able to organize literature and comes to a synthesis that results in own insights, hypotheses or conclusions which contribute to the research question.	Student is able to organize literature and critically evaluates the quality of his literature sources. He comes to a synthesis that results in own insights, hypotheses or conclusions which contribute to the research question.	Student is able to organize literature and critically evaluates the quality of his literature sources. He comes to an original synthesis that results in own original insights, hypotheses or conclusions which contribute to the research question.

D) Report (50-65%)					
1. Problem definition & research set-up					
1-3	4-5	6	7	8	9-10
There is no researchable research question and the delineation of the research is absent.	Most research questions are unclear, or not researchable and the delineation of the research is weak..	The research questions are mostly clear but could have been defined sharper at some points.	The research questions and the delineation are mostly clear but could have been defined sharper at some points.	The research questions are clear and researchable and the delineation is clear..	The research questions are clear and formulated to-the-point and limits of the research are well-defined.
No link is made to existing research on the topic. No research context is described.	The context of the topic at hand is described in broad terms but there is no link between what is known and what will be researched.	The link between the thesis research and existing research does not go beyond the information provided by the supervisor.	Context of the research is defined well, with input from the student. There is a link between the context and research questions.	Context of the research is defined sharply and to-the-point. Research questions emerge directly from the described context.	Research is positioned sharply in the relevant scientific field. Student is able to indicate the novelty and innovation of the research.
2. Theoretical underpinning and use of literature					
1-3	4-5	6	7	8	9-10
No discussion of underlying theories.	There is some discussion of underlying theories, but the description shows serious errors.	Student has found the relevant theories, but the description has not been tailored to the project at hand or shows occasional errors.	Student has found the relevant theories, and has been partially successful in tailoring the description to the project at hand. Few errors occur.	Student has found the relevant theories, makes a synthesis of those, and has been successful in tailoring the description to the project at hand.	Clear, complete and coherent overview of relevant theories. Exactly tailored to the project at hand.
No peer-reviewed/primary scientific papers in reference list except for those already suggested by the supervisor	Only a couple of peer-reviewed papers in reference list.	Some peer-reviewed papers in reference list but also a significant body of gray literature.	Relevant peer-reviewed papers in reference list but also some gray literature or text books. Some included references less relevant.	Mostly peer-reviewed papers or specialized monographs in reference list. An occasional reference may be less relevant.	Almost exclusively peer-reviewed papers in reference list or specialized monographs All papers included are relevant.

3. Description methods and analysis (literature) data					
1-3	4-5	6	7	8	9-10
No description of methods and analysis of the information/data.	Insufficient information on methods and insufficient analysis of the information.	Some aspects of the project regarding methods and analysis of information are described insufficiently. Used methods and analysis of data/information are not always appropriate.	Description of methods and analysis of information/data is lacking in a number of places. Used methods and analysis of data/information mostly appropriate.	Description of methods and analysis of information/data is mostly complete, but there are lacking some details. Used methods and analysis of data/information are appropriate.	Description of methods used and analysis of the information is appropriate, complete and clear.
4. Clarity of argumentation and conclusions					
1-3	4-5	6	7	8	9-10
No link between research questions, results and conclusions.	Conclusions are drawn, but in many cases these are only partial answers to the research question. Conclusions merely repeat results or conclusions are not substantiated by results.	Conclusions are linked to the research questions, but not all questions are addressed. Some conclusions are not substantiated by results or merely repeat results.	Most conclusions well-linked to research questions and substantiated by results. Conclusions mostly formulated clearly but some vagueness in wording.	Clear link between research questions and conclusions. All conclusions substantiated by results. Conclusions are formulated exact.	Clear link between research questions and conclusions. Conclusions substantiated by results. Conclusions are formulated exact and concise. Conclusions are grouped/ordered in a logical way.
No recommendations given.	Recommendations are absent or trivial.	Some recommendations are given, but the link of those to the conclusions is not always clear.	Recommendations are well-linked to the conclusions.	Recommendations are to-the-point, well-linked to the conclusions and original.	Recommendations are to-the-point, well-linked to the conclusions, original and are extensive enough to serve as project description for a new thesis project.
5. Critical discussion					
1-3	4-5	6	7	8	9-10
No discussion and/or reflection on the research. Discussion only touches trivial or very general points of criticism.	Student identifies only some possible weaknesses and/or points at weaknesses which are in reality irrelevant or non-existent.	Student indicates most weaknesses in the research, but does not weigh their impact on the main results relative to each other.	Student indicates most weaknesses in the research and is able to weigh their impact on the main results relative to each other.	Student indicates all weaknesses in the research and weighs them relative to each other. Furthermore, (better) alternatives for the methods used are indicated.	Student is able to identify all possible weaknesses in the research and to indicate which weaknesses affect the conclusions most.

No confrontation with existing literature.	Some confrontation with existing literature but incomplete and irrelevant.	Some confrontation with existing literature, some relevance.	Student identifies only most obvious conflicts and correspondences with existing literature. Student tries to describe the added value of his study but does not relate this to existing research.	Student shows minor and major conflicts and correspondences with literature and can identify the added value of his research relative to existing literature.	Student critically confronts results to existing literature and in case of conflicts is able to weigh own results relative to existing literature. Student is able to identify the contribution of his work to the development of scientific concepts
6. Writing skills including correct quoting					
1-3	4-5	6	7	8	9-10
BSc thesis badly structured. In many cases information appears in wrong locations. Level of detail is inappropriate throughout.	Main structure incorrect in some places, and placement of material in different chapters illogical in many places. Level of detail varies widely (information missing, or irrelevant information given).	Main structure is correct, but lower level hierarchy of sections is not logical in places. Some sections have overlapping functions leading to ambiguity in placement of information. Level of detail varies widely (information missing, or irrelevant information given).	Main structure correct, but placement of material in different chapters illogical in places. Level of detail inappropriate in a number of places (irrelevant information given).	Most sections have a clear and unique function. Hierarchy of sections is mostly correct. Ordering of sections is mostly logical. All information occurs at the correct place, with few exceptions. In most places level of detail is appropriate.	Well-structured: each section has a clear and unique function. Hierarchy of sections is correct. Ordering of sections is logical. All information occurs at the correct place. Level of detail is appropriate throughout.
Formulations in the text are often incorrect/inexact inhibiting a correct interpretation of the text.	Vagueness and/or inexactness in wording occurs regularly and it affects the interpretation of the text.	The text is ambiguous in some places but this does not always inhibit a correct interpretation of the text.	Formulations in text are predominantly clear and exact. BSc thesis report could have been written more concisely.	Formulations in text are clear and exact, as well as concise.	*Textual* quality of thesis is such that it could be acceptable for a peer-reviewed journal.
English incorrect and unreadable. Spelling and grammar errors too many to count.	English incorrect and very hard to read. Spelling and grammar errors so numerous that they make the thesis almost impossible to understand.	English somehow correct but not pleasant to read. Spelling and grammar errors numerous.	English basically correct and readable. Spelling and grammar errors present but at acceptable quantities.	English correct and pleasant to read. Some spelling and grammar errors.	English fluent and pleasant to read. Few spelling and grammar errors. English is (almost) at the level of what is written in peer-reviewed journals.
Student is often inconsequent in references in the text and/or reference list or often references are lacking.	Student is often inconsequent in references in the text and/or reference list or often references are lacking.	Student is sometimes inconsequent in references in the text and/or reference list or sometimes references are lacking.	Student is sometimes inconsequent in references in the text and/or reference list.	Student uses one format for references in the text and reference list.	Student uses one format for references in the text and reference list.

D) Final discussion (0-5%)					
1. Knowledge study domain					
1-3	4-5	6	7	8	9-10
Student does not master the most basic knowledge (even below the starting level for the thesis).	The student does not understand all of the subject matter discussed in the thesis.	The student understands the subject matter of the thesis on a textbook level.	The student understands the subject matter of the thesis on a textbook level and realizes the importance of literature without using it.	The student understands the subject matter of the thesis including the literature used in the thesis.	Student is well on top of subjects discussed in thesis: not only does he understand but he is also aware of current discussions in the literature related to the thesis topic.
2. Defence of thesis					
1-3	4-5	6	7	8	9-10
Student is not able to defend/discuss his thesis. He does not master the contents	The student has difficulty to explain the subject matter of the thesis.	Student is able to defend his thesis. He mostly masters the contents of what he wrote, but for a limited number of items he is not able to explain what he did, or why.	Student is able to defend his thesis. He masters the contents of what he wrote, but not beyond that. Is not able to place thesis in scientific or practical context.	Student is able to defend his thesis, including indications where the work could have been done better. Student is able to place thesis in either scientific or practical context.	Student is able to freely discuss the contents of the thesis and to place the thesis in the context of current scientific literature and practical contexts.