

Process Analysis for a Student Grading Process

Name: Francesca Macasinag

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Part 1: Introduction

Purpose

The purpose of this document is to provide an analysis for the Grade Student process of an Arts College. This process is enacted for every course offered at the college. The College uses a software application called Grade Centre to record and track assignment grades and final marks. Professors record grades in Grade Centre and Grade Centre calculates the final marks. Please refer to the *GradeStudent_CurrentProcess.vsd* document included in the folder for a diagram of the process.

Document Overview

Process Profile

This section shows the As-is Process Profile created for the Grade Student Process. Comments were added in blue to analyze the current documentation and to make recommendations for improvement.

Process Analysis

This section shows the issues identified for the current process based on interviews conducted with stakeholders. Recommendations are also provided for each issue, and the proposed process profile.

Part 2: Process Profile

As-is Process Profile for Grade Student

Process Name	Process Owner
Grade Student	Chief Information Officer Grade Student is a grading/academic process, not a computer process. The process owner should be someone authorized to make changes for the grading process. The person authorized to make changes to the grading process is the VP Academic, so the process owner should be the said VP or in the same department.
Description	
This is the process of recording assignment grades and awarding final grades. This section can be more descriptive by adding the process units to give a better overview of what happens in the process.	

Triggers	
<p>First day of class</p> <p>This is an incorrect trigger because the first day of class does not start the Grade Student process. Grading may happen at the beginning of the term but it doesn't actually start unless the first assignment is submitted.</p>	
Input – Items and Sources	
<p>Student assignment grades (source: professor)</p> <p>This list is incomplete, additional inputs are also required for this process to happen. These are the Grade Centre, Moodle, and spreadsheet instances. Moodle and the spreadsheet setup are not required to be used by all professors, but Grade Centre must be used since this is the official record used by decision makers such as deans and counsellors.</p>	
Output – Items and Customers	
<p>Final grade (customers: student and the RO)</p> <p>The process objectives provided by the client does not include the final grade being returned to the student since that grade will be in the transcript that the Registrar's office will be producing. Therefore, the student is not a customer of this output. For purposes of clarity, "Final grade" can also be changed to "Final mark" since the client confirmed that the grade usually refers to the individual assignment grade, while mark refers to the sum of the calculated grades.</p>	
Process Units	Process Unit Owners
<p>Set Up Grade Center Instance</p> <p>This process is not in the map and happens a long time before grading students. However, the setup of Moodle and Grade Centre is still required for the process because an instance of these need to be setup before any grades can be recorded. This would therefore be more appropriate as an input to the process.</p>	<p>Chief Information Officer</p> <p>This should be corrected for all process units, see Process Owner notes.</p>
Enter Assignment Grades	Chief Information Officer
Calculate Final Grade	Chief Information Officer
Submit Grades to RO	Chief Information Officer

Business Objectives	Measures of Success
<p>Grade all students</p> <p>This can be improved by specifying that only enrolled students are being considered as part of this objective. Based on client feedback, this should also specify that students should have final calculated grades (or the final mark). Stating “Grade all students” only would seem like the process objective is to grade students for individual assignments, but not add them all up to get a final grade.</p>	<p>All students will be assigned a final grade no later than one week after the last day of class.</p> <p>This is not an accurate measure for the objective, and instead should be a separate objective for the process.</p>
<p>Student final grades are accurate</p>	<p>The Program Administrator in conjunction with the Professor will check all grades prior to submitting them to the RO.</p> <p>This measure is time consuming and would require an extra step that is currently not documented on the process maps provided by the client. Doing this will also affect the objective to submit the grades on time to the Registrar’s office.</p>
Business Risks	Key Controls
<p>Professors make a mistake when calculating or recording assignment grades.</p>	<p>Professors should double-check their work.</p> <p>This control can be done but is not the most effective.</p>
<p>A student may fail to submit an assignment.</p> <p>This is not a relevant risk because the objective is just for students to have a final and accurate grade. The objectives for this process do not include student success.</p>	<p>The Professor will enter a grade of zero for any missed assignment.</p>

Part 3: Process Analysis

Issues and Recommendations

ID	Problem	Solution	Justification
P1	Grade Centre is unable to tally points for each assignment submitted so some professors need to use spreadsheets to get the total for each assignment.	Grade Centre can have a feature where points for each assignment can be tallied directly into the system. The system will then also calculate the total grade for the assignment based on the points earned. However, if this feature is too costly for the stakeholders due to the very specific customization required for each assignment, an alternative is for Grade Centre to import the points or the grade from the spreadsheet to avoid manual input from professors.	These solutions were recommended to avoid the manual input of individual assignment grades from the spreadsheet to Grade Centre. This reduces the risk of input error for each assignment grade being entered to Grade Centre. A drawback of the first recommendation is its high cost due to increased customization. The spreadsheet import option on the other hand may require more spreadsheet preparation from professors to make sure that the system can read it. However, this extra work will only need to be done at the beginning, afterwards, the time saved and accuracy achieved from not inputting manually will be greater than the effort required to set it up.

ID	Problem	Solution	Justification
P2	In the Record Grades sub process, multiple manual data entry points for assignment grades have to be done in Moodle and Grade Centre if Moodle is being used. Multiple data entry points increase the risk of incorrect entry and is an inefficient use of labor hours.	Professors must be able to enter individual assignment grades directly to Grade Centre, and the system should be able to connect to Moodle so that whatever is in Grade Centre will reflect on Moodle. This eliminates the need to enter the grade in two places.	Minimizing the different systems that the professors are using will eliminate the need to reconcile grades since there is only one source for it. This would also result in a time savings and a reduction of transcription errors, which are the problems caused by multiple data entry points.
P3	Grade Centre was not built to accommodate certain methods of calculating grades such as pro rations. Due to the difficulty of using it, some professors are forced to alter their way of grading just to submit grades. Altering grading methods to suit system needs, rather than the other way around, also increases the risk of incorrect grading.	Grade Centre should be modified in such a way that the system would accommodate the grading structure of all professors. Depending on the type of grading structure, this can be done through system modifications or through process modifications such as setting up the Grade Centre instance in such a way that accommodates the instructor. For the latter recommendation, more feedback from the subject matter expert is needed since that activity is not in scope of the Grade Student process.	Spreadsheet instances of calculating the final mark can be eliminated by doing these modifications. As a result of this, time can be saved and professor satisfaction can be improved.

ID	Problem	Solution	Justification
P4	Grades are still calculated separately on the spreadsheet and Moodle after it is calculated from Grade Centre.	Similar to P2, this problem could be eliminated by having all calculations made by Grade Centre and using it as the main source for grades and having Moodle connect to it. Moodle calculations will be unnecessary if it just shows the calculated grade from Grade Centre. Moodle's built in calculation feature based on entered grades can be disabled, however if it is already a sunk cost, configurations can be made instead so that its calculation reflects the same way that Grade Centre calculates so that there is no mismatch.	There will only be one source for the calculated grade so no more reconciling of grades and manual entry to different systems will be required.
P5	The Program Administrator is doing their own manual data entry to a separate system which increases the risk of transcription errors.	Connect Grade Centre to the RO's system so that there will be no more manual entry required to be done by the Program Administrator.	This solution eliminates the work of the Program Administrator in this process which results in a faster upload of grades and the elimination of proofing final marks task. This automatic transfer can also reduce the risk of transcription errors.

Suggested To-be Process Profile for Grade Student

Process Name	Process Owner
Grade Student	VP Academic, or someone assigned from the department that is authorized to change the grading process
Description	
This process starts when an assignment is submitted by a student. For each assignment, the professor will record the grades. The final mark will then be calculated based on the grades recorded for each student. Once the final marks are calculated, this will be submitted to the Registrar's office.	
Triggers	
When an assignment is submitted by a student.	
Input – Items and Sources	
Student assignment grades – Professor Moodle instance – Designated instructor for the department Grade Centre instance – Designated instructor for the department Spreadsheet instance – Designated instructor for the department	
Output – Items and Customers	
Final grade – Registrar's Office	
Process Units	Process Unit Owners
Enter Assignment Grades	VP Academic
Calculate Final Grade	VP Academic
Submit Grades to RO	VP Academic
Business Objectives	Measures of Success
Every student enrolled should have a final mark	Check if there are students with no final mark.
Final mark must be accurate	The college can get a sample of students and recalculate their grades. The final mark must match what is in Grade Centre.
Marks must be submitted to the Registrar's Office no later than 1 week after the end of class	No marks are submitted late to the Registrar's office.
Instructors should be satisfied by the workload the system requires	Release a survey form to the instructors and get feedback on the system. Target results on user satisfaction and types of questions to be asked in the survey will be confirmed with the necessary stakeholder or subject matter expert.

Business Risks	Key Controls
Risk of professors making a mistake when calculating or recording assignment grades	This risk is minimized by reducing the manual data points of entry through the solutions recommended.
Risk of professors not using the new system	The system changes recommended were devised based on minimizing the workload of the professors when grading. The college can also try to identify if there are any nonfunctional requirements that professors want to make sure that using the system is as easy or pleasant as possible.
Risk of professors spending more time on the new system	The new system should already be built based on reducing the time grading, but additional controls can be done through training the end users and making easy to use training materials if still required.
Risk of privacy breach due to one system that multiple groups can access	Roles and accesses will be identified for the system upgrades so that only the users with a “need to know” have access to certain parts of the system.
Risk of stalling all grading processes if Grade Centre goes down	Backups can be made for grading in the event this happens. A spreadsheet instance can be created for grading and calculating although it will only be used if the system goes down.
Risk of the system calculating grades incorrectly	This can be controlled by setting up the Grade Centre instance properly. A review can be made by the department on how the Grade Centre instance will be set up before the designated instructor does it.
Risk of having a final mark for students that have incomplete grades	The system can have a check to ensure that final marks are not produced when there are still missing assignment grades.
Risk of dissatisfaction due to extra work being created for other stakeholders outside this process because of solutions recommended. (For example: the designated instructor who will set up Grade Centre)	A review will be made to identify all possible stakeholders affected based on the changes that will be made to the system. Any extra work must be balanced out by the time savings for the overall process. Management support can also be garnered to help other stakeholders understand that it is necessary to do the changes to the system.