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Design Project
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Motivational Intervention Plan for Nina

Motivational Case

Nina is in her first semester of the dental hygiene program at a community college. She is in her early twenties, lives alone, and does not have a significant other or children. She is struggling financially and is having a difficult time making ends meet. Nina is not forming the close relationships that often spring up in the program. She is of a different ethnicity than the other students, which may make it difficult for her to approach them. She spends a lot of time alone, including during breaks. Nina is very quiet and does not volunteer to answer questions often. When she does answer a question directed to the group, she is often so quiet as to barely be heard. Sometimes she answers correctly, other times she is incorrect.

In addition, Nina appears to become quite anxious before and during tests. She is always the last to finish and often erases and changes answers. This can be to her detriment as her initial response is sometimes correct. Her written work is often confused, disconnected, and difficult to read. She seems to have trouble writing a full, cohesive answer to a question. Nina exhibits the same type of anxiety when responding to questions during discussions. She has difficulty collecting and expressing her thoughts. Upon reviewing her transcripts prior to program entry, I noticed a history of failed and re-attempted courses while Nina was working on her prerequisites. It may be surmised that this history of academic difficulty has caused Nina to lose (or to never gain) confidence in her abilities as a learner. In addition, it seems that she has almost no support system at home. She does not have much family and those that she does

have do not seem to be offering much support, help, or encouragement. It is impressive that she has accomplished what she has thus far.

Nina wants very badly to become a dental hygienist. In conversation, she mentioned how hard she has worked thus far to make it into the program. She is extremely fearful of not succeeding, especially after the work she has put into her prerequisites over the last several years, and is willing to do what is necessary in order to pass. She stays late at the college, in the library or other study areas, and has turned off her cable at home to decrease distraction as much as possible. Recently, she has begun to seek out other students in an attempt to form study groups prior to exams.

Motivational Assessment

Learner

Nina is a first year dental hygiene student, struggling academically in the program. She is quite shy, anxious, and wants very badly to succeed in the program. She appears to have low confidence and often experiences anxiety when taking tests, doing lab work, or participating in discussions. She seems afraid to answer questions or speak up in fear that she will be wrong.

Learning Setting

Nina is enrolled in the dental hygiene program of a community college. The course for this case is an introductory one, Dental Radiology. The purpose of Dental Radiology is to instruct the students in radiation biology and physics, techniques, and patient consideration for radiographic exposure. This course takes place in a community college classroom and an x-ray lab where the students work with and expose radiographs. The classroom is composed of two long lab tables, each of which seats 9 students, in a vertical orientation that face a chalkboard

and projector. Most presentations are on PowerPoint and viewed on the projector. Nina sits at the front of one of the tables and has a good view of the material presented, as opposed to some of the other seats in the class. The room, being a college classroom used by other instructors, is sparsely decorated. It is in a quiet section of the building, so there are not often distractions from the hallway or other rooms.

Learning Activity

Nina will be guided through several activities designed to help build her confidence and ability as a dental hygienist, including enhanced self-efficacy when being evaluated and in the skills required for practice through lab activities. *The specific task for this design project is learning to correctly interpret radiographs.* This is one of the main goals of dental radiology. Students must be able to correctly identify normal and abnormal conditions on radiographs. Without this skill, the exposed radiographs are essentially useless. Interpretation is the culmination of all the material taught in the course, and requires that the preparatory initial work is mastered. Students must be able to select appropriate exposure variables, choose the types of radiographs needed, properly position the film, and successfully process and mount the radiographs in order to interpret them. Interpretation requires a thorough understanding of normal anatomy and a long list of potential deviations from normal. It also requires communication skills, as the information garnered must be discussed with the supervising dentist and the patient during patient education.

Motivational Problem

Nina does not have the self-confidence to believe she can succeed in class. She is very quiet, often looks down, and seems to get quite down on herself when she does poorly on

assessments. She gets nervous when called upon, whether in a group or individually, because she thinks she cannot answer the questions. This lack of self-confidence will make it extremely difficult to confidently interpret dental radiographs, a major component of dental hygiene practice, when working with patients and dentists. Because this is such an important skill, Nina not only needs confidence in her ability to do it accurately, she needs to be motivated to want to correctly interpret throughout her career as a student and clinician.

Motivational Analysis

Preconditions:

There are several preconditions in place. From the beginning, it has been established that students may ask questions whenever they need to and that I, as their instructor, am willing to meet whenever necessary to help with any difficulties students may have. I am at the college at least an hour before and after the actual class period. Students have been encouraged to bring forth questions during class or outside of class, as necessary, through private conferences or email. Questions and open dialogue are always encouraged by discussing points of interest during slide presentations and garnering student responses to new concepts. I am careful not to rush students through questions, lecture materials, or lab activities. I strongly attempt to model my behavior in the way Brophy describes, by being cheerful, friendly, and positive and to demonstrate sincerity when the students struggle with something, whether school related or not. It is my goal to continue to establish this environment as we progress through the semester. The social climate, for the most part, is welcoming. The other students are not alienating Nina, she just seems to be too shy or to lack the confidence to approach others. Students are provided with clear expectations. Objectives and rationale are provided for course

materials and lab activities, in particular. Student learning is monitored through quiz scores, lab activities, hand-in sheets, case studies, and discussion.

Approaches:

The current motivational approaches are a combination of behavioral, cognitive, and intrinsic approaches through extrinsic rewards, positive feedback, a supportive environment, and opportunities for discussion. Students regularly receive grades for quizzes, lecture activities, and lab assignments. I try to provide positive feedback regularly when students do well in discussion, ask thoughtful questions, or perform well in lab. When I see a student is frustrated, I attempt to find some positive side to the situation and emphasize that. The environment is supportive in that students can dialogue and ask questions whenever needed. I am always available before and after class, as well as by phone or email if students need extra help. I try to incorporate discussion whenever possible to try to motivate students to make connections between the material and their own lives, as well as their future roles as dental hygiene practitioners.

TARGET Model Assessment:

(T) Tasks

The tasks routinely used are lectures (PowerPoint), student outlines, small group discussions, lecture and lab activities, peer collaboration, in-class hands-on activities, visual aids/demonstrations, quizzes, lab worksheets. Activities, worksheets, and quizzes provide traditional extrinsic rewards. Discussions allow some connection with students' personal background and experience.

(A) Authority

Authority is currently demonstrated in the more traditional method discussed in the TARGET method. As the instructor, I dictate the rules of the classroom and make decisions on the curriculum, text, and learning opportunities. However, I have begun to implement outside meeting times to help students who are struggling or just want extra help. In these sessions, students can bring their own questions and learning needs to the meeting.

(R) Recognition

Obvious, external recognition is not typically showcased in this course. Recognition and feedback are typically offered spontaneously and individually throughout lecture or lab.

(G) Grouping

The purpose of grouping in the TARGET model is to promote cooperative learning while decreasing competition social comparison (Brophy, p. 88). In general, this is being met. During lab, students frequently work in small groups or pairs and most lab work is done collaboratively. Many lecture activities are done through small group format as well, such as case studies, discussions, practicing patient education, and mounting radiographs.

(E) Evaluation

Evaluation methods follow traditional practices, such as quiz and assignment grades. Students are able to show what they have learned in different ways, however, with lab assignments. They are evaluated on both process and product. Other evaluation methods are not currently in place.

(T) Time

Class time is fixed and determined by the program director and college. There is, however, flexibility with the actual lab and lecture times. At times, lectures have been extended when important concepts needed more time for thorough understanding.

Data

As I progressed through the text materials, I felt it was important to collect data specific to Nina in order to best help motivate her. The following questionnaires were given to Nina at several points throughout the semester:

TABLE 1

Adapted from Stipek's (p. 67, 2002) *Measure of Attributions for Performance on Academic Tasks*

Rate the importance of each explanation	Not at all a reason		An important reason		
<i>When you do well in school, it is usually because:</i>					
You studied hard?	1	2	3	4	5
You studied the right things?	1	2	3	4	5
You are smart?	1	2	3	4	5
The teacher explained things well?	1	2	3	4	5
The task was easy?	1	2	3	4	5
The work was easy?	1	2	3	4	5
<i>When you do poorly in school, it is usually because:</i>					
You didn't study much?	1	2	3	4	5
You didn't study the right things?	1	2	3	4	5
You are not smart?	1	2	3	4	5
The teacher didn't explain things well?	1	2	3	4	5
You weren't helped by anyone?	1	2	3	4	5
The work was hard?	1	2	3	4	5

TABLE 2Adapted from Stipek's (p. 145, 2002) *Academic Self-Regulatory Style Questionnaire*

<i>Why do you study for or put effort into this course?</i>	Not at all True (1)	Not very True (2)	Sort of True (3)	Very True (4)
External (rule following; avoidance of punishment)*				
Because I'll get in trouble if I don't	1	2	3	4
Because that's what I'm supposed to do	1	2	3	4
So that the teacher won't reprimand me	1	2	3	4
Because that's the rule	1	2	3	4
So others won't get mad at me	1	2	3	4
Introjection (self- and other approval; avoidance of disapproval)*				
Because I want the teacher to think I'm a good student	1	2	3	4
Because I will feel bad about myself if I don't	1	2	3	4
Because I'll feel ashamed of myself if I don't	1	2	3	4
Because I want the other students to think I'm smart	1	2	3	4
Because it bothers me when I don't	1	2	3	4
Because I want people to like me	1	2	3	4
Identification (self-valued goal, personal importance)*				
Because I want to understand the subject	1	2	3	4
Because I want to learn new things	1	2	3	4
To find out if I'm right or wrong	1	2	3	4
Because I think it's important to	1	2	3	4
Intrinsic (enjoyment; fun)*				
Because it's fun	1	2	3	4
Because I enjoy it	1	2	3	4

*questionnaire was distributed without explanatory headlines

TABLE 3Adapted from Stipek's (p. 137, 2002) *Teacher-Developed Measure of Students' Intrinsic Motivation*

Activity	Not at All			A Lot	
Listening to instructor lecture	1	2	3	4	5
	(Nina did not answer first line)				
Taking notes on outline	1	2	3	4	5
Coloring & labeling diagrams	1	2	3	4	5
Participating in small group discussions	1	2	3	4	5
Participating in small group activities (ie mounting radiographs)	1	2	3	4	5
Watching videos	1	2	3	4	5
In class demonstrations with students	1	2	3	4	5
Taking radiographs in lab	1	2	3	4	5
Viewing & interpreting radiographs	1	2	3	4	5
Working on case studies	1	2	3	4	5
Practicing placement on student partner	1	2	3	4	5
	(Nina did not answer last line)				

TABLE 4

Form distributed for one-on-one or small group discussions:

Name: _____

I would prefer to: meet alone meet w/ other student(s) no preference

The area(s) I need help in is:

Identifying slides

Which activities would you like to do? (circle all that apply)

View slides **Discussion** Game-like Activity Flashcards Q&A Session

Worksheet Videos Demonstrations Case Study Diagrams

Other: _____

Days you are available (circle all that apply): **Mon** Tues Weds **Thurs** Fri Sat

Times (circle all that apply): morning **afternoon** **evening**

Motivational Intervention

In addition to the data gathered through questionnaires, I reviewed Nina's transcripts prior to entering the program and interviewed other dental hygiene teachers working with her this semester. Her GPA was a 2.68, which is barely enough to get into the program. In addition, she had repeated many courses in order to achieve the needed B or C requirement for program entry. The other faculty members were noticing the same things I was. She seemed quiet, anxious, and was having difficulties in both lecture and lab activities. I collected data in order to determine Nina's cognitive and intrinsic needs. In light of my findings, I determined:

- Nina seemed to lean more toward Brophy's (2010) concept of an "entity view" of her ability, meaning that it was fixed and often out of her control, demonstrated by her attributing success at times to easy assignments and teacher explanations; when considering whether she was smart, she only gave herself a "2". Nina notes failures often occur when work is hard or not explained well. Notably, however, she does indicate that when she studies hard and studies the right things, she can succeed.
- Nina scored high in both identification and intrinsic regulation, meaning she valued learning for its self-value, personal importance, and enjoyment.
- Nina enjoys small group activities, discussions, and working with radiographs. She is less enthusiastic about watching videos or practicing case studies.

Based on Nina's responses, I felt it was important to address her cognitive needs by helping her build the skills needed to succeed in class, which in turn, would help build her self-confidence. In addition, I wanted to enhance her intrinsic motivation by helping her to realize her own autonomy, competence, and relatedness. By working on these two areas, I feel I can

motivate Nina to feel confident in successfully interpreting the radiographs she exposes. *Specifically, I want her be able to interpret dental radiographs for normal and abnormal conditions with 90% accuracy.* This will be assessed through discussion, slide viewing, examinations, and lab activities.

The strategy in this plan is two-fold. First, Nina's confidence needs to be built up so she sees herself as capable of learning. Next, as Nina begins to see she is capable, she needs to be intrinsically motivated to want to correctly interpret radiographs not only in this class, but in the future as a clinician.

To enhance Nina's self-efficacy as a learner, I focused on three areas: improving metacognitive skills, improving self-regulations skills, and viewing her ability as incremental. Self-efficacy is defined by both Stipek (2002), who relates self-efficacy as pertaining to "a person's judgments of his or her performance capability on a particular type of task at a particular point in time" (p. 42), and Brophy (2010), who further conceptualizes self-efficacy as "beliefs in one's capabilities to organize and execute the courses of action required to produce given attainment" (p. 51). To be successful, Nina needs to know how to approach learning; that is she needs to become aware of the capabilities, strategies, and resources required to perform tasks effectively. In order to achieve self-regulation, Nina must be able to plan and manage her time, evaluate her own efficacy of study habits, and know when and where to get help. Lastly, to view her ability as incremental, Nina needs to attributes to both successes and failures to her own efforts, not an idea of pre-determined ability. As she experiences success based on her own efforts, she should begin to see she can enhance her own abilities.

As self-efficacy is built, I can then focus on fostering intrinsic motivation to get Nina excited about developing the skill of interpretation. Again, I will focus on three areas: autonomy, competence, and relatedness. A range of tasks, using different skill levels will enhance autonomy (Brophy, 2010, p. 168). Competence needs will be met by allowing Nina to participate in activities that are enjoyable, yet challenging. Scaffolding and immediate feedback will help Nina know when she is ready to progress to the next level. Relatedness needs can be served by creating a supportive learning community and helping Nina to see both immediate and future implications for what she is learning through task significance.

As I work with Nina cognitively and intrinsically, I am hoping to build in her motivation to learn. I think she has preliminary work to get through, as outlined in the strategy below, but I hope to introduce some broader themes to induce her own motivation to learn, beyond just this one course. I have included a few of these ideas in the TARGET framework when they apply to Nina, and I plan to model several of the strategies myself including sharing my personal experiences, modeling curiosity, and showing enthusiasm for learning. As Nina progresses through the program, I hope to include more motivation to learn strategies in my courses with her.

I knew it would difficult to carry out all of my strategy within the confines of my class time, so I decided to include an individual and small group approach in addition to our set meeting times. I met with Nina privately and set up small group times that included her, both of which were outside of class. My strategies for these sessions are organized under the following TARGET framework:

(T) Tasks

A variety of tasks will continue to be offered, however the following changes will be introduced:

- Task objectives will be clear and challenging so Nina will know exactly what is needed to be successful (*Metacognitive Skills*)
- Frequent opportunities for success will be offered during tasks so Nina can see her skill levels increase (*Metacognitive Skills & Competence Needs*)
- Modeling and scaffolding during demonstrations will be offered, such as how I approach interpretation personally (*Metacognitive & Self-Regulation Skills*)
- Discussions to connect personal experience with radiographs to material learned (*Relatedness Needs*)
- Experimentation in lab to allow students to predict what will happen based on what has been learned (*Motivation to Learn*)
- Explaining value of tasks (*Motivation to Learn, Relatedness Needs*)

Rationale

Providing clear and appropriately challenging objectives will help Nina see exactly what she needs to do to perform tasks successfully, building metacognitive skills. Carefully matching tasks to Nina's skill levels and then scaffolding these tasks will begin to meet her competence needs. Rationale for tasks will be provided in an attempt to help Nina make connections between the material and their future application to serve her relatedness needs. Real world significance will be emphasized to further enhance motivation to learn (Stipek, 2002, p. 174).

(A) Authority

Because of the way the class is currently structured, it is difficult to stray much from the traditional way I have been teaching. However, I can introduce allow more autonomy for Nina in the following ways:

- Allow choice of tasks in radiographic interpretation during our one-on-one and small group sessions (*Autonomy Needs*)
- Solicit suggestions from Nina on the direction of our small group sessions (*Autonomy Needs*)

Rationale

Allowing Nina choice in activities will help meet her autonomy needs. People tend to enjoy tasks that allow for different skills to be used and that allow them to complete a product from start to finish (Brophy, 2010, p. 168). Choosing between videos, demonstrations, viewing slides, discussions, and demonstrations on interpretation techniques should help meet Nina's autonomy needs.

(R) Recognition

Private recognition and feedback will continued to be offered, with the following modifications:

- Recognition of success incrementally during process procedure during labs
(*Metacognitive Skills, Ability as Incremental*)
- Specific, informative, immediate feedback on Nina's efforts to help guide her to the next level (*Metacognitive & Self-Regulation Skills, Ability as Incremental, Competence Needs*)

- Minimize comparisons with other students by eliminating statistics from online gradebook
- Continue to foster learning community in class so Nina feels supported not just as a student, but also as a person (*Relatedness Needs*)

Rationale

Recognizing efforts incrementally will help Nina attribute her successes to her own efforts (Brophy, 2010, p. 50), which in turn will help her see her ability as incremental. Recognition of effective strategies will help build metacognitive and self-regulation skills. Informative and immediate feedback can also help to build autonomy and competence needs.

(G) Grouping

Small group activities will continue to be used.

- Group study sessions with me will be initiated to get Nina acquainted and comfortable with her classmates, as well as allow for interaction and discussion of material (*Self-Regulation Skills, Competence Needs, Relatedness Needs*)
- Discussion of radiographic interpretation findings will be utilized during small groups (*Self-Regulations Skills, Competence Needs, Relatedness Needs*)
- Discussions shaped around powerful themes (*Motivation to Learn*)

Rationale

Allowing Nina to discuss her findings will help meet competence needs. It will be important to create a safe environment in which mistakes are ok, in order for Nina to feel comfortable during discussion. Discussing how the material affects members of the group now

and in the future will help with relatedness needs. Learning how other students manage their time and study habits may help Nina build her own self-regulations skills.

(E) Evaluation

More evaluative options will be explored, such as:

- Evaluating the process of interpretation, ie the thought processes in puzzling out and discussing interpretation, instead of just focusing on the correct answers (*Metacognitive Skills, Ability as Incremental, Competence Needs*)
- Allowing discussion and correction of missed answers on tests in order to achieve a better score (*Metacognitive Skills, Ability as Incremental*)
- Focus on how new material will enhance practice as a dental hygienist, through lab activities and increased skill levels in radiograph exposure, due to de-emphasize value of learning solely to pass a test (*Ability as Incremental, Relatedness Needs*)

Rationale

Scaffolding and providing informative feedback during the process will provide opportunities for success, which will help Nina see her ability as incremental. Further, as Nina begins to become aware of the capabilities and resources needed for interpretation, she will build metacognitive skills. The opportunity for score improvement will take some pressure off during testing. Focusing on how material will help in the future can help meet relatedness needs.

(T) Time

Class time is fixed and limited by the college, program director, and amount of material needed to be covered. Creative, flexible options are needed in order to give Nina the time she truly needs to be successful.

- Allowing more time for quizzes by starting class 15 minutes early for those who wish to start early, increased time should help Nina better gather her thoughts for essay/application questions (*Metacognitive Skills*)
- Creating one-on-one or small group sessions outside of class time (*Self-Regulation Skills, Autonomy Needs, Competence Needs, Relatedness Needs*)

Rationale

More time for quizzes should ease the pressure Nina feels during evaluations. As pressure is lessened, Nina may begin to learn what is needed to effectively answer test questions. Small group sessions allow for flexible scheduling and more individualized instruction in areas Nina is struggling with.

Expected Outcomes/ Results

I will assess change in motivation to learn by observing Nina's behaviors, evaluating her interpretation activities, discussing techniques during small group sessions, and scoring her quizzes. I hope to see her become more confident, demonstrated through willingness to answer questions and discuss material in class, making more eye contact with me, and creating friendships with classmates. I hope to see thoughtful discussion during interpretation activities, as she begins to apply what she has learned and to use appropriate terminology while viewing

radiographs. I hope to see better scores on quizzes, especially in interpretation areas. I will measure her accuracy specifically on interpretation labs and activities in class and in clinic. As Nina becomes more confident in herself and her abilities, I hope I will see her anxiety decrease overall.

As I have had the chance to apply this strategy, I have noted some positive changes. I feel that Nina and I have a better student-teacher relationship. She seems more willing to come to me with questions and concerns and to ask for help. She has approached several students in class and asked to study together. She has discussed with me some of the techniques she has learned from them and new things she has tried on her own, indicating a change in metacognitive skills. She has slowed down, better organized her notes, and begun to manipulate and discuss material in her own words, instead of just attempting to memorize it. She seems to enjoy the small group sessions and works to participate in discussion and to correctly interpret slides.

There is still room for improvement, however. Test scores are still low, although passing. I feel it is important to emphasize that while she needs grades to pass, she should look to her other areas of strengths, such as clinical skills. I want her to see what she can bring to the table as a dental hygienist, besides just scoring well on examinations. While there has been some noticeable change, she overall still has low self-confidence and displays some anxiety. I need to recognize that there may be other factors involved beyond schooling, such as relationships, family, upbringing, etc. Through this project, I have become more connected with Nina, and I hope to continue over the next year and a half with her to keep building her confidence as a

student and as a dental hygienist. I will continue to employ this motivational strategy into next semester, when I work with her in both in class and in clinic.

Ultimately, I hope to see Nina achieve true motivation to learn. This is defined by Brophy (2010) as a “tendency to find learning activities meaningful and worthwhile and to try to get intended benefits from them” (p. 208). I feel it is necessary to build the skills mentioned above while keeping this end goal in mind. Metacognitive awareness and self-regulation are important skills in motivation to learn (Brophy, 2010, p. 247-8). Thoughtful discourse is also important and will be encouraged in class discussions, as Nina continues to build her skills. I have begun to implement “Powerful Ideas” (Brophy, 2010, p. 241) to my units by structuring lessons and activities around big ideas. It is my intention to keep Nina focused on these larger themes (such as radiographic interpretation) to help her achieve true understanding. I think as I continue to work with Nina, who has so much at stake, I will continue to see enhanced motivation in the future.

References

Brophy, J. (2010). *Motivating students to learn* (3rd ed.). New York: Routledge.

Stipek, D. (2002). *Motivation to learn: Integrating theory and practice* (4th ed.). Boston: Allyn & Bacon.