Motivation, SRL Strategies and the Special Case of Help Seeking

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to be presented...

• Briefly review “classical model” of motivation and SRL, with a focus on EVT and the introduction of cost
• Introduce “strategy motivation”
• Propose a Dual Model that combines domain/task and strategy motivation
• Focus on help seeking
  o Focus on sources of help
  o Technology and social influences
  o Reframing as a resource management/regulation strategy
• Conclusions, suggestion and next steps

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Extent of Motivational Influences on SRL

• Zimmerman’s “Motivational Precursors” — at the person level (Zimmerman, 2008; Zimmerman & Schunk, 2012)
  - Goal orientation
  - Interest
  - Self-efficacy
  - Outcome expectancy
  - Future time perspective
  - Task values
  - Volition
  - Intrinsic motivation
  - Causal attributions
  - Goal setting and self-reactions
  - Social motivation
  - Gender identity
  - Cultural identity
Motivation in SRL

- Person Level of Efklides MASRL* Model
  - Self-concept
  - Ability
  - Control beliefs
  - Affect
- Boekaerts —Motivational Self-Regulation
  - Capacity beliefs
  - Goal orientation
  - Attitudes and values related to tasks within a domain
  - Negative emotions
  - Effort avoidance
- Winne & Hadwin COPES model
  - Motivational factors and orientations during the task

*Metacognitive and Affective Model of Self-regulated Learning
Motivation and the MSLQ
“Skill and the Will”

Table 1
Summary Statistics and Zero-Order Correlations for Motivation and Self-Regulated Learning Variables

<table>
<thead>
<tr>
<th>Variable</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Intrinsic value</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>2. Self-efficacy</td>
<td>.48*</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>3. Test anxiety</td>
<td>—</td>
<td>—</td>
<td>.34*</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>4. Strategy use</td>
<td>.63*</td>
<td>.33*</td>
<td>.04</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>5. Self-regulation</td>
<td>.73*</td>
<td>.44*</td>
<td>.13</td>
<td>.83*</td>
<td>—</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>$M$</th>
<th></th>
<th></th>
<th>$SD$</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>5.44</td>
<td>5.47</td>
<td>3.58</td>
<td>5.20</td>
<td>5.03</td>
</tr>
<tr>
<td>$SD$</td>
<td>0.89</td>
<td>1.00</td>
<td>1.67</td>
<td>0.77</td>
<td>0.83</td>
</tr>
</tbody>
</table>

Pintrich & De Groot (1990)
Over 6500 citations
MSLQ: Motivation Scales

- **Value Components**
  - Intrinsic Goal Orientation
  - Extrinsic Goal Orientation
  - Task Value

- **Expectancy Components**
  - Control Beliefs
  - Self-Efficacy for Learning and Performance

- **Affective Components**
  - Test Anxiety
MSLQ: Learning Strategy Scales

• Cognitive
  o Low value/shallow
    • Rehearsal/memorization
    • Organization
  o High value/deep
    • Critical Thinking
    • Elaboration

• Resource management
  o Help seeking
  o Effort regulation
  o Time & Study environment
  o Peer learning

• Metacognition
  o Planning
  o Monitoring
  o Regulating
Classical Model: Domain/Task Motivation and SRL Strategy Use

- Domain/Task Motivation
- SRL Strategy Use
- Outcome
AGT Example: Goal Orientation and Strategy Use

Mastery


Perf. Avoid

Wolters (2004) • Middle school students in math
SDT Example: Academic Self-regulation & Strategy Use

de Bilde, Vansteenkiste & Lens (2011) • High school & university students
EVT: Components & Strategy Use

Zusho, Pintrich & Cappola (2003) • Intro chem. university students
Even Effects of Psychopathology

Brackney & Karabenick (1995)
Adding EVT Cost

Expectancy
/Efficacy
Value
Cost

- Cognitive
  (e.g., rehearsal)
- Metacognitive
  (e.g., planning)
- Resource
  (e.g., help seeking)
Math and SRL: EVT Components & the Inclusion of Cost

- Motivation for Math (MSLQ; Eccles & Wigfield, 1995)
  - Expectancy/efficacy
  - Value (interest, utility, attainment)
  - Cost (opportunity)
- 9th grade (beginning high school)
- N = 306
- End of term self-report
- MSLQ strategies (revised and adapted for math)

Berger & Karabenick JLI (2011)
Relation of Math Efficacy to Strategy Use

- Elaboration
- Metacognition
- Time/study
- Help seeking
- Rehearsal
- Organization

Berger & Karabenick (2011)
Relation of Math Value to Strategy Use

Berger & Karabenick (2011)
Relation of Math Cost to Strategy Use

Berger & Karabenick (2011)
No question that domain/task motivation is related to strategy use

- Yes, motivation influences SRL strategies, but a more fine grained analysis is clearly necessary since the relation depends on the
  - specific strategy (rehearsal, elaboration)
  - theoretical frame (AGT, SDT, EVT)
  - specific component of the theoretical frame (e.g., expectancy, interest, extrinsic, cost)

- Grain size of the task/outcome also matters (e.g., math achievement, understanding algebra, or solving simultaneous equations)
Other Motivational Influences?

• What about motivational influences at the strategy level?

• Previous studies of “Strategy Value Information” — “information about the usefulness of a strategy as an aid to performance” (Paris, Lipson, & Wixson, 1983; Pressley et al., 1990; Paris, Newman, & McVey, 1982)

• How do learners view the relative benefits and cost of using different strategies, and how are those appraisals related to strategy use?

• E.g., generally assume that lower-level cognitive strategies (e.g., rehearsal) are easier to use (e.g., Zimmerman & Kitsantas, 2007) and less costly to use than are higher level strategies (e.g., elaboration)

• More cost with newly acquired strategies, which decreases with automaticity (e.g., Carr & Jessup, 1995)
Influence of **Strategy Motivation**

- Cognitive Strategy Motivation
- Metacognitive Strategy Motivation
- Resource Strategy Motivation

**Outcome**

Cognitive

Metacognitive

Resource Management
Some Evidence Using an EVT Approach to Strategy Motivation

- Same 9th grade math sample
- Compare utility, cost and use among strategies
  - Utility: “how much you believe each way of studying would be useful for doing well in math class” (Not at all = 1; Very = 5)
  - Cost: ”how much you believe studying in different ways takes time and effort” (Very little = 1; A lot = 5)
  - Used the strategy (Not at all true of me = 1; Very true of me = 5)

Karabenick & Berger (in prep)
Perceived Utility Value of Strategy

- Planning
- Organization
- Rehearsal
- Elaboration
- Monitoring
- Help Seeking
- Regulating

Karabenick & Berger (in prep)
Perceived Cost of Strategy

Karabenick & Berger (in prep)
Combined Perceived Benefit and Cost of SRL Strategies

Utility — Cost

Karabenick & Berger (in prep)
Perceived Benefit and Cost of SRL Strategies and Reported Use

Karabenick & Berger (in prep)
Perceived Benefit and Cost of SRL Strategies and Reported Use

Reported Use

Benefit – Cost

Karabenick & Berger (in prep)
Strategy Motivation and SRL

• Thus independent of domain/task motivation, evidence that the appraised utility and cost of using strategies themselves is related to their reported use — some surprises

• For example, rehearsal, often considered a “low level” or easy strategy to employ (e.g., Biggs, Kember, & Leung, 2001; Borkowski et al., 2000) was judged very costly (time/effort)

• Interesting that both help seeking and regulating — both of which involve activities contingent on monitoring judgments
  o Regulating — “If I get confused with something I’m studying in math, I go back and try to figure it out.”
  o Help Seeking (Instrumental/Adaptive) — “If I don’t understand something in math I ask for help to better understand general ideas or principles.”

• In general, there is something to learn by focusing on strategy motivation
Now, what about the combination of domain/task and strategy motivation?
Dual Domain/Task & Strategy Motivation Model

- Cognitive Strategy Motivation
- Metacognitive Strategy Motivation
- Resource Management Strategy Motivation
- Domain Expectancy / Efficacy Value Cost
- Cognitive Use
- Metacognitive Use
- Resource Management Use
- Outcome

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Consider a Model Using AGT

General Task Goal Orientation

Task-specific Involvement

Perceived Deep-Processing Strategy Value

Use of Deep Processing Strategies

Combined Domain/Task and Strategy Motivation – EVT Examples

Math
Value & Cost

Strategy
Value & Cost

Strategy Use

*From math study described previously
Math & Rehearsal Utility

- Domain Motivation
- Math Utility

- Perceived Rehearsal Utility

- Reported Rehearsal Use

Correlations:
- Perceived Rehearsal Utility to Domain Motivation: 0.240***
- Perceived Rehearsal Utility to Reported Rehearsal Use: 0.636***
- Domain Motivation to Reported Rehearsal Use: 0.084

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Math & Rehearsal Cost

Math Cost

Perceived Rehearsal Cost

Reported Rehearsal Use

.100

.226***

.061

Karabenick & Berger (in prep)
Math & Rehearsal Utility – Cost

Math Utility - Cost

Perceived Rehearsal Utility - Cost

Reported Rehearsal Use

= 0.084

= 0.473***

Karabenick & Berger (in prep)
Math & Metacognition Utility

Math Utility

Perceived Metacognition Utility

Reported Metacognition Use

.331***

.159**

.555***

Karabenick & Berger (in prep)
Math & Metacognition Cost

- Math Cost
- Perceived Metacognition Cost
- Reported Metacognition Use

Karabenick & Berger (in prep)
Math & Metacognition Utility – Cost

Karabenick & Berger (in prep)
Contribution of Dual Model to Study of Motivation and SRL

- Need for renewed focus on strategy motivation
- We are missing important motivational influences by not including both strategy and domain/task motivation
- Clear that direct and mediated effects of motivation on strategy use vary across strategies (e.g., rehearsal vs. metacognition)
- EVT’s framework a good fit to the value - cost approach
- Need for research across domains (math vs. social studies?)
The Special Case of Help Seeking
Why So Special?

- Research on Help Seeking already fits the Dual Motivation SRL model
- Help seeking is more likely to involve personal cost (e.g., embarrassment) as well as time/effort and opportunity cost
- Major focus on the negative as well as positive consequences of not seeking as well as seeking help — i.e., not using the strategy
- Complex internal structure/process components potentially influenced by motivation
- Often involves social interaction-related cost
- Different types help seeking
## Types of Help Seeking

<table>
<thead>
<tr>
<th>Less Desirable</th>
<th>More Desirable</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Executive</td>
<td>• Instrumental</td>
</tr>
<tr>
<td>• Convenient</td>
<td>• Necessary</td>
</tr>
<tr>
<td>• Dependent</td>
<td>• Appropriate</td>
</tr>
<tr>
<td>• Work-Avoidant</td>
<td>• Adaptive</td>
</tr>
<tr>
<td>• Excessive</td>
<td>• Strategic</td>
</tr>
<tr>
<td>• Expedient</td>
<td>• Autonomous</td>
</tr>
<tr>
<td>• Ability focused</td>
<td>• Goal is learning and understanding</td>
</tr>
<tr>
<td>• Avoidant</td>
<td>• Just enough help to overcome obstacles (e.g., hints)</td>
</tr>
<tr>
<td></td>
<td>• Necessary</td>
</tr>
<tr>
<td></td>
<td>• Less reliance subsequently</td>
</tr>
<tr>
<td></td>
<td>• Only after independent attempts</td>
</tr>
</tbody>
</table>

- Focused on the outcome (e.g., “Just give me the answers”)  
- Reduced effort  
- Not needed  
- Continued reliance on others  
- Less reliance subsequently (e.g., Arbreton, Butler, Karabenick, Nadler, Nelson-Le Gall, Newman, Ryan, Gross & McMullen)
Much of the Research on Personal Achievement Goals & Help Seeking

<table>
<thead>
<tr>
<th>Type of Help Seeking</th>
<th>Mastery</th>
<th>Performance (Avoid)</th>
<th>Work Avoidance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adaptive/Instrumental</td>
<td>+</td>
<td>−</td>
<td></td>
</tr>
<tr>
<td>Avoid</td>
<td>−</td>
<td>+</td>
<td></td>
</tr>
<tr>
<td>Executive/Expedient</td>
<td>+</td>
<td>+</td>
<td></td>
</tr>
</tbody>
</table>

(Barnett, Butler, Elliot, Kaplan, Karabenick, Midgley, Newman, Pintrich, Ryan, Hicks/Anderman, Urdan, Midgley, Skaalvik, Zusho)
Strategy Motivation and Help Seeking

Person

Situation

Perceived Benefits and Costs of Seeking and Not Seeking Help

Instrumental/Adaptive

Executive/Excessive

Avoidance

Autonomous

(R. Ames, Butler; Newman; Roussel, Nadler, Le Gall, Elliot, & Feltman; Ryan, Pintrich, Gonida, Makara, et al.)
Benefits & Costs of Seeking Help

• Benefits
  o Problem solved, goals accomplished
  o Acquire increased knowledge/skills (instrumental/appropriate/adaptive)
  o Less time and effort (executive/dependent)

• Costs
  o Time/effort (similar to other strategies)
  o Self-threat (ego cost)
  o Attainment cost — viewing self as dependent
  o Social cost (embarrassment)
  o Incurred helper indebtedness; need for reciprocity (e.g., more important for strangers than peers)
Benefits & Costs of Not Seeking Help

• Benefits
  o Skill/knowledge gained from persistence
  o Pride in autonomous accomplishment ("I did it myself!")

• Costs
  o Not accomplishing goals
  o Getting lost — real Greek men don’t ask for help
  o Yes, even Einstein — who persisted for years in pursuing an avenue of investigation that was based on an earlier mathematical error — almost scooped by not seeking assistance
EVT Strategy Level Predictors of Different Forms of Seeking and Not Seeking Help

(recent evidence: college students reporting EVT for components of help seeking in courses they found difficult)

<table>
<thead>
<tr>
<th>Strategy EVT Component</th>
<th>Seek Help</th>
<th>Not Seek Help</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Instrumental</td>
<td>Executive</td>
</tr>
<tr>
<td>HS Efficacy</td>
<td>+</td>
<td>0</td>
</tr>
<tr>
<td>HS Value</td>
<td>+</td>
<td>0</td>
</tr>
<tr>
<td>HS Cost</td>
<td>0</td>
<td>+++</td>
</tr>
</tbody>
</table>
Help Seeking Utility and Cost in the Dual Model
Help Seeking: Combined Math Class and Strategy Utility

Math Class Utility

Perceived HS Utility

Help Seeking

.307***

.070

.660***

Karabenick & Berger (in prep)
Help Seeking: Combined Math Class and Strategy Cost

Math Class Cost

Perceived Strategy Cost

Help Seeking

.131**

- .100

-.046

Karabenick & Berger (in prep)
Help Seeking: Combined Math Class and Strategy Utility - Cost

Math Class Utility - Cost

Perceived HS Utility-Cost

Help Seeking

\[
0.239^{***} \\
\]

\[
0.148^{**} \\
\]

\[
0.495^{***} \\
\]

Karabenick & Berger (in prep)
Help-Seeking Process and Focus on Sources
(potential cost implications)

- Determine that a problem exists
- Determine that help is needed
- Decide to seek help and type of help
- Scan potential sources of help
- Decide from whom/where to seek help
- Solicit help
- Obtain the requested help
- Process the help obtained
Sources of Help

• Pre-K: Parents, family, friends, other personal
• K-12: teachers, peers, parents, online
• University settings...
  o e.g., U of M has 88 sources of help listed on their academic support services website
    ...and ways to access them
  o Email
  o Course management systems
  o Web search
  o Online databases
  o Social networking sites
**Perceived Benefits and Costs of Help Seeking in a High School Setting**

“If you were having a problem understanding your schoolwork this year, how likely is it that you would seek help from the following people?”

<table>
<thead>
<tr>
<th>HS Beliefs</th>
<th>Friends</th>
<th>Non-friends</th>
<th>Class teacher</th>
<th>Other teachers</th>
<th>Parents</th>
</tr>
</thead>
<tbody>
<tr>
<td>Benefits of HS</td>
<td>.11**</td>
<td>.15**</td>
<td>.36***</td>
<td>.27***</td>
<td>.15***</td>
</tr>
<tr>
<td>Costs of HS</td>
<td>-.05</td>
<td>.03</td>
<td>-.14***</td>
<td>-.03</td>
<td>-.06</td>
</tr>
</tbody>
</table>

Makara & Karabenick (2014)
Rated Importance of Benefit- and Cost-related Source Characteristics in a University Setting

- Had the specific information or advice you needed
- Was likely to respond to your request for help
- Would adapt the help to respond to your specific needs
- Was approachable
- Would require a lot of time and effort to get the help you needed
- Was someone/something you were familiar with
- Would make you feel anxious or embarrassed asking for help

Not at all important
1
1.5
2
2.5
3
3.5
4
4.5
5
Very important

Karabenick et al. in prep
### Help Seeking Strategy Motivation (EVT) and Importance of Source Characteristics

(Chalk students)

<table>
<thead>
<tr>
<th>Source Characteristics</th>
<th>Expectancy</th>
<th>Value</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Would respond to your request for help</td>
<td>0</td>
<td>0</td>
<td>–</td>
</tr>
<tr>
<td>Had the specific information or advice you needed</td>
<td>0</td>
<td>+++</td>
<td>0</td>
</tr>
<tr>
<td>Would adapt the help to respond to your specific needs</td>
<td>0</td>
<td>+++</td>
<td>0</td>
</tr>
<tr>
<td>Would require a lot of time and effort to get the help you needed</td>
<td>0</td>
<td>0</td>
<td>+</td>
</tr>
<tr>
<td>Would make you feel anxious or embarrassed asking for help</td>
<td>– – –</td>
<td>0</td>
<td>+++</td>
</tr>
<tr>
<td>Was approachable</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Was someone/something you were familiar with</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>
Source Preferences

“Imagine that you were having a problem understanding something in one of your typical college classes. How likely would you be to do each of the following in order to get help?”

- Refer to class materials
- Use online search engine/encyclopedia
- Search class-specific online resources
- Communicate with classmates F2F
- Solve the problem on one’s own
- Communicate with instructor F2F
- Communicate with instructor online
- Communicate with classmates online
- Search through library website

Makara & Karabenick (2013)
Technology Can Reduce the Level of Social-Related Cost

“the actual, imagined or implied presence of other human beings” — G. Allport

Less Cost

Intelligent Learning Environments
HS Tutor (e.g., Aleven et al.)

Sync
Asynch
CMC
Skype
Facebook
Twitter

More Cost

Online Tutors
Classrooms
### Example: Effect of Source Privacy

<table>
<thead>
<tr>
<th>HS Consequences</th>
<th>Condition</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Computer Help</td>
</tr>
<tr>
<td>Students requesting help at least once</td>
<td>86%</td>
</tr>
<tr>
<td>Mean number of help requests</td>
<td>3.5</td>
</tr>
</tbody>
</table>

(Karabenick & Knapp, 1988)
## Seeking Help in Online Learning Environments: Examining Source Value and Cost in MOOCs

### Helper Badges*

<table>
<thead>
<tr>
<th>Helper Badges*</th>
<th>No Helper Badges</th>
</tr>
</thead>
<tbody>
<tr>
<td>Helper will vote on question</td>
<td>Helper will vote on question</td>
</tr>
<tr>
<td>Helper will not vote on question</td>
<td>Helper will not vote on question</td>
</tr>
</tbody>
</table>

*indicating propensity to give help

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Leveraging Educational Technology to Overcome Social Obstacles to Help Seeking

Iris Howley

Carnegie Mellon University, 2015
Badges and Voting in MOOCs

- Without badges, helper up-down voting decreases help seeking
- Badges moderate the negative effect of voting

Howley, 2015
Help Seeking Viewed as Resource Management?

- “What makes help-seeking unique is that, by definition, such behavior involves interpersonal interaction… (Bamberger, 2009).”
- However, many resources are barely or arguably non-social
- Better Classification: Obtaining external resources that an individual (or group of individuals) determines are needed to accomplish goals
- Perhaps seen less costly that way
What? You didn’t get help?

Found on a school website…

It’s OK to get help

- Is it possible that the plethora of available resources increases the cost of not seeking help? — The expectation that you should take advantage of help resources?
In sum...

- Reviewed classical approach to motivation and SRL
- Focused on EVT & introduced effects of cost
- (Re)introduced “strategy motivation” as a predictor of strategy use
- Presented a model that incorporates both domain/task and strategy motivation as predictors of strategy use
- Tested the model on specific strategies using EVT
- Focused on the special case of help seeking — specifically sources of help
- Briefly reviewed how technology can reduce source costs
Motivation Theories & SRL

- Suggest that AGT, SDT and Interest theory are more relevant at the domain level (e.g., math motivation)
- EVT is applicable both at the domain and strategy levels
- Reason is the cost-benefit specificity of EVT
- A topic of future study
Context

- Likely that the direct and indirect influences of motivation on SRL will vary depending both on the domain and the strategy.
- In fact, a strength of the dual model consists of detecting such differences — we want to know if motivation effects differ for math vs. social studies and that strategy motivation effects differ for elaboration vs. rehearsal.
- In other words — generalization is NOT the primary goal.
And finally

• Worth considering the implications of these ideas for current motivation interventions
• Is increasing the “will” sufficient or should interventions also focus on ensuring sufficient levels of “skill” as well?
• E.g., “Now that we have convinced you that math is more important, here are some strategies that will help you perform better.”
• Perhaps the model and evidence presented here will help to answer that question.
Interested in discussing these issues?

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