**Overview of Item Review Results & Development Recommendations**

By: R. Noah Padgett, Shan Jiang, Laura Shero, & Todd Kettler

**General Feedback to Consider**

Below are some general points for us to consider that will help in revising the subscales. The feedback below is in no particular order and some feedback was omitted due to being irrelevant and off topic. We have already started to incorporate some of the points below to help with development and to make the instrument more user understandable.

1. Define/operationalize the constructs
2. Ask about readiness to use technology (already included in demographics covariates)
3. There's an assumption that instructors who are good in-person also have the innate or transferable knowledge and capacity to be effective online. If this construct were added to the instrument, it may yield some interesting results.
4. The respondents may answer these questions differently dependent on the tool that they use, i.e., Zoom=very interactive, Google Classroom with Meets= not so much. (may need to add a demographic covariate to help capture this).
5. A common item level feedback was that the SME’s respond “it depends” or “it can be” and that the “depends” is whether we are measuring online learning or online learning relative to face-to-face learning. This is great feedback as this is what we had in might: that the answer should depend on the perception relative to traditional learning (face-to-face).
6. Distinction between what the platform itself is able to do innately by nature of the platform (e.g. build autonomy, require time commitment, etc.) and what is POSSIBLE to do online but not a given on any platform (e.g. build collaboration, have meaningful engagement, be interesting) will really strengthen the instrument.

**Item-Construct Coherence**

We asked subject matter experts whether they agreed or disagreed that an item measured the reported construct. Below we have broken down the results as the proportion of experts who agreed with each statement. You will notice that some experts did not agree or disagree to some items, and in a few cases the expert gave qualitative information as to why. We will dive into this information later. But, for now, we present the coarse overview of how did expert think the items mapped onto the constructs of perceptions of online learning. All items with agreement less than 75% is marked with (!) for possible removal or major revision.

*Construct: Effectiveness of Learning*

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Item | Question | Agree | Total | Flag |
| 1 | Online learning allows students to acquire content knowledge | 100.00% | 8 |  |
| 2 | Online learning allows students to develop conceptual understanding | 100.00% | 7 |  |
| 3 | Online learning is effective for learning about the topics in the curriculum | 87.50% | 8 |  |
| 4 | Online learning is effective for building knowledge and understanding | 87.50% | 8 |  |
| 5 | Online learning supports student achievement | 75.00% | 8 |  |
| 6 | Online learning provides effective learning resources | 85.71% | 7 |  |
| 7 | Online learning supports achievement with multi-media content | 75.00% | 8 |  |
| 8 | Online learning prepares students for high stakes assessments | 50.00% | 6 | (!) |
| 9 | Online learning prepares students for work and/or further education | 100.00% | 7 |  |
| 10 | Online learning accomplishes the goals of the curriculum | 66.67% | 6 | (!) |
| 11 | Online learning promotes higher-order thinking skills as analysis, synthesis, and evaluation | 87.50% | 8 |  |
| 12 | Online learning builds student communication skills | 28.57% | 7 | (!) |
| 13 | Online learning builds student social skills | 28.57% | 7 | (!) |
| 14 | Online learning includes focused assessment and feedback | 71.42% | 7 | (!) |
| 15 | Online learning effectively assesses student performance | 75.00% | 6 |  |
| 16 | Online learning assessments provide teachers with reliable information on student progress | 57.14% | 7 | (!) |
| 17 | Online learning encourages academic integrity and adherence to intellectual property standards | 28.57% | 7 | (!) |

Items to remember as possibly needing to be removed or revised: 8, 10, 12, 13, 14, 16, 17.

*Construct: Student Centeredness*

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Item | Question | Agree | Total | Flag |
| 1 | Online learning is student-centered | 66.67% | 6 | (!) |
| 2 | Online learning offers students choices | 100.00% | 6 |  |
| 3 | Online learning allows for differentiation based on student needs | 66.67% | 6 | (!) |
| 4 | Online learning supports flexible pacing for students | 100.00% | 7 |  |
| 5 | Online learning supports learner-customized pacing | 87.71% | 7 |  |
| 6 | Online learning aligns instruction to individual learning goals | 80.00% | 5 |  |
| 7 | Online learning encourages diverse student perspectives | 50.00% | 6 | (!) |
| 8 | Online learning is personalized and adaptive | 66.67% | 6 | (!) |
| 9 | Online learning is responsive to students | 80.00% | 5 |  |
| 10 | Online learning is culturally responsive | 40.00% | 5 | (!) |

Items to remember as possibly needing to be removed or revised: 1, 3, 7, 8, 10.

*Construct: Interactiveness (or Interactivity) of Learning*

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Item | Question | Agree | Total | Flag |
| 1 | Online learning supports student-to-student interaction | 85.71% | 7 |  |
| 2 | Online learning allows students to collaborate on learning tasks | 100.00% | 7 |  |
| 3 | Online learning encourages student-to-student discussions | 40.00% | 5 | (!) |
| 4 | Online learning provides a space for students to work in teams | 100.00% | 7 |  |
| 5 | Online learning allows one-on-one student interaction with the teacher | 85.71% | 7 |  |
| 6 | Online learning builds community among students | 60.00% | 5 | (!) |
| 7 | Online learning encourages academic dialogue | 60.00% | 5 | (!) |
| 8 | Online learning is collaborative | 60.00% | 5 | (!) |
| 9 | Online learning requires active participation | 50.00% | 6 | (!) |
| 10 | Online learning allows teachers to provide timely responses | 71.42% | 7 | (!) |

Items to remember as possibly needing to be removed or revised: 3, 6, 7, 8, 9, 10.

*Construct: Enagedness of Learning*

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Item | Question | Agree | Total | Flag |
| 1 | Online learning engages students in meaningful ways | 66.67% | 6 | (!) |
| 2 | Online learning connects learning to real world situations | 66.67% | 6 | (!) |
| 3 | Online learning builds self-directed learning skills | 66.67% | 6 | (!) |
| 4 | Online learning supports project-based learning | 100.00% | 6 |  |
| 5 | Online learning supports creative thinking and innovation | 100.00% | 6 |  |
| 6 | Online learning engages student agency | 85.71% | 7 |  |
| 7 | Online learning engages student self-directed learning | 100.00% | 7 |  |
| 8 | Online learning helps students transfer learning to novel situations | 16.17% | 6 | (!) |
| 9 | Online learning is interesting | 66.67% | 6 | (!) |
| 10 | Online learning motivates students to learn | 60.00% | 5 | (!) |
| 11 | Online learning makes content applicable to real-world contexts | 50.00% | 6 | (!) |
| 12 | Online learning builds time management skills | 66.67% | 6 | (!) |
| 13 | Online learning requires time commitment | 83.33% | 6 |  |
| 14 | Online learning engages student autonomy | 83.33% | 6 |  |

Items to remember as possibly needing to be removed or revised: 1, 2, 3, 8, 9, 10, 11, 12

**Subscale Feedback and Suggestions**

For each subscale below, we outline some of the specific feedback given. Here, we are looking for general information about whether the SME had specific advice or comments that we would consider for each construct. When given, we incorporate feedback at the item level.

*Effectiveness of Learning*

General comments related to the *Effectiveness of Learning* subscale:

1. Online learning is very broad, maybe more specific examples of learning management platforms, types of online assessments, specific study tools used online, etc..
2. My thought here was should this construct be named Effectiveness of Digital Platform or something similar instead? It seems to include items that go beyond student-centered items (learning). Some of the items I disagreed on, I was more in the middle (and going back to my first question... would some of these items more closely align with the effectiveness of mode of instruction instead? For the panel feedback stage, it would also be helpful to include how you define the construct.
3. Be more specific in statements. For example, the item “Online learning builds student communication skills” is vague in that the type of communication skills built may be easily misinterpreted by respondents.
4. The big issue I see here is that the verbiage seems to imply that the platform itself makes training effective or ineffective. I am a passionate proponent of online learning done well, but to be effective it has to be built with the learner experience in mind. So to measure someone's receptivity to online learning, I think you need to add a version of "can be" into every item. The only items that do this are the first two. This small change would enable a more realistic reflection of people's openness to online instruction/training as a viable learning platform
5. This is a timely instrument - with the right tweaks it could be incredibly useful in nearly every industry right now.

Item level feedback:

Respondent 3; Respondent 4; Respondent 5; Respondent 7; Respondent 8

Items that we previously flagged are 8, 12, 13, 16, 17.

|  |  |  |
| --- | --- | --- |
| Item | Question | Feedback |
| 1 | Online learning allows students to acquire content knowledge |  |
| 2 | Online learning allows students to develop conceptual understanding |  |
| 3 | Online learning is effective for learning about the topics in the curriculum | * I'd say it can be effective, but isn't a given. It depends on how the engagement is developed. |
| 4 | Online learning is effective for building knowledge and understanding | * I'd prefer "can be" effective - no platform (including in-person) is innately effective for building knowledge and understanding. If you stick with the verbiage of your first two questions "allows" or "allows for effective building..." it would be a natural "agree." |
| 5 | Online learning supports student achievement | * Is student achievement always associated with learning? * I answered "agree" because of the verb "supports" * maybe I'm splitting hairs, but I can't agree with a carte blanche "supports" but if it said "online learning can support" or "is able to support" I could agree. |
| 6 | Online learning provides effective learning resources | * I'm not sure what this question is asking. Resources? * being online or in-person does not determine the degree to which effective learning resources are provided. It "is able to" or "can effectively provide meaningful learning resources." |
| 7 | Online learning supports achievement with multi-media content | * can support, but does not innately support. In many cases, it does not support. It depends on how well the training/designed student experience is built. |
| 8 | Online learning prepares students for high stakes assessments | * not sure what 'high stakes' means * I'm not sure * if it said "can" I'd have room to agree |
| 9 | Online learning prepares students for work and/or further education | * I think I'd split these |
| 10 | Online learning accomplishes the goals of the curriculum | * this item is more looking at curriculum alignment rather than student learning * depends on the goals * I'm not sure. If the goals are transfer of information over transformation of lived experiences, possibly. * Not innately - it all depends on how it's developed. the key term missing is "can" |
| 11 | Online learning promotes higher-order thinking skills as analysis, synthesis, and evaluation | * I'm answering "agree" because of the verb "promotes." |
| 12 | Online learning builds student communication skills | * define 'skills' – different skills require different methods * it's able to, but doesn't automatically |
| 13 | Online learning builds student social skills | * define 'social skills' * it can be the best or worst at this, depending on design. "can build" = I could agree. |
| 14 | Online learning includes focused assessment and feedback | * It could. I'll answer "agree". I have some questions about "focused". * for me to agree, this one needs either "To be effective, online learning..." or "Online learning can effectively include..." |
| 15 | Online learning effectively assesses student performance | * depends on what is meant by 'performance' * Effectively" hmmm.. * to agree, I'd need "can effectively assess" |
| 16 | Online learning assessments provide teachers with reliable information on student progress | * "Reliable"...hmmm. * I'd need "can" - it depends on how it's built, not the platform alone. |
| 17 | Online learning encourages academic integrity and adherence to intellectual property standards | * no more than face-to-face * I do not know. * not innately |

*Construct: Student Centeredness*

General comments related to the *Student Centeredness* subscale:

* None.

Item level feedback:

Respondent 3; Respondent 4; Respondent 5; Respondent 7; Respondent 8

Items that we previously flagged are 1, 3, 7, 10.

|  |  |  |
| --- | --- | --- |
| Item | Question | Feedback |
| 1 | Online learning is student-centered |  |
| 2 | Online learning offers students choices | * no more or less than face-to-face |
| 3 | Online learning allows for differentiation based on student needs | * not clear enough to respond |
| 4 | Online learning supports flexible pacing for students |  |
| 5 | Online learning supports learner-customized pacing | * to some degree |
| 6 | Online learning aligns instruction to individual learning goals | * depends on the goals * I'm not sure. * "can align" = agree |
| 7 | Online learning encourages diverse student perspectives | * no more so than face-to-face * "is able to encourage" = agree |
| 8 | Online learning is personalized and adaptive | * can be, but not in all cases * personalizations comes from the teacher, not to the platform * "can be" = agree |
| 9 | Online learning is responsive to students | * can be * It can be. The human application of the OLL is the key. * "is able to be"=agree; the platform itself doesn't make it responsive to students. Some online platforms are correspondence courses in the cloud, with no capacity to respond to students. |
| 10 | Online learning is culturally responsive | * no more so than face-to-face * If the culture has access to tech * The jury is out. * "can be" = agree |

*Construct: Interactiveness (or Interactivity) of Learning*

General comments related to the *Interactiveness (or Interactivity) or Learning* subscale:

* I suggest you think about the use of 'allows' versus 'permits -- consider if you seeing online learning as different than face-to-face or equivalent to -- if the goal is measure online learning then the outcome should not be the same as for face-to-face learning
* The interactive tool choice is critical to its effectiveness as well as the instructor's familiarity with designing for collaboration

Item level feedback:

Respondent 3; Respondent 4; Respondent 5; Respondent 7; Respondent 8

Items that we previously flagged are 3, 9, 10.

|  |  |  |
| --- | --- | --- |
| Item | Question | Feedback |
| 1 | Online learning supports student-to-student interaction | * It can be. The teacher's pedagogical philosophy, knowledge, and skill are the dependent variables. |
| 2 | Online learning allows students to collaborate on learning tasks |  |
| 3 | Online learning encourages student-to-student discussions | * no more than face-to-face * It can be. The teacher's pedagogical philosophy, knowledge, and skill are the dependent variables. * "can encourage" = agree |
| 4 | Online learning provides a space for students to work in teams | * virtual teams? |
| 5 | Online learning allows one-on-one student interaction with the teacher |  |
| 6 | Online learning builds community among students | * online learning by itself would not, but the required communication might * "is able to build" = agree. But the instructor/course has to be intentionally developed to do so. |
| 7 | Online learning encourages academic dialogue | * in general or with one another in the online classroom environment (the other items are phrased more specifically) * same as above. The required actions might. * "Encourages" I'm not sure. It can be. The teacher's pedagogical philosophy, knowledge, and skill are the dependent variables. * "can encourage" = agree |
| 8 | Online learning is collaborative | * Maybe something like online learning promotes collaboration. * It can be. The teacher's pedagogical philosophy, knowledge, and skill are the dependent variables. * "allows for collaboration" = agree |
| 9 | Online learning requires active participation | * it might if the actions are designed appropriately * "is able to require" = agree |
| 10 | Online learning allows teachers to provide timely responses | * My experiences from the last two years have led me to believe that OLL platforms allow too many students to populate a course which increases the amount of work a faculty member must manage and thus a slower turn around on feedback to students. |

*Construct: Enagedness of Learning*

General comments related to the *Engagedness of Learning* subscale:

* Online learning connects to “real-world” situations is not a simple yes/no. Some online environments do and some don’t. Same for many of these items.

Item level feedback:

Respondent 3; Respondent 4; Respondent 5; Respondent 7; Respondent 8

Items that we previously flagged are 3, 8, 10, 11, 12

|  |  |  |
| --- | --- | --- |
| Item | Question | Feedback |
| 1 | Online learning engages students in meaningful ways | * It can be. The teacher's pedagogical philosophy, knowledge, and skill are the dependent variables. * "is able to engage" = agree. Meaningful engagement is not a given, in person or online |
| 2 | Online learning connects learning to real world situations | * Seem comment below for the other real-world item * It can be. The teacher's pedagogical philosophy, knowledge, and skill are the dependent variables. * "can connect" = agree |
| 3 | Online learning builds self-directed learning skills | * maybe encourages instead of builds here * it might - but the actions have to be designed to do so |
| 4 | Online learning supports project-based learning | * It can be. The teacher's pedagogical philosophy, knowledge, and skill are the dependent variables. |
| 5 | Online learning supports creative thinking and innovation | * It can be. The teacher's pedagogical philosophy, knowledge, and skill are the dependent variables. |
| 6 | Online learning engages student agency |  |
| 7 | Online learning engages student self-directed learning | * Not sure how this item is very different from the one above, but like the phrasing better in this one |
| 8 | Online learning helps students transfer learning to novel situations | * not per se. The required applications might. * "is able to help" = agree |
| 9 | Online learning is interesting | * You might be careful about whether asking teachers about online learning for their students or themselves. Some teachers may respond to this differently depending on "who" they're applying this item to. * it is not clear what is meant by 'interesting' -- the use of online learning or the study of online learning? * "Interesting" as in the transition to OLL as a primary modality for learning and instruction is a curious phenomenon worth more research. * "can be" = agree. Platform itself does not determine something's degree of being "Interesting" |
| 10 | Online learning motivates students to learn | * the method does not motivate. * "can motivate" = agree |
| 11 | Online learning makes content applicable to real-world contexts | * I'm wondering if some of the items that touch on real-world contexts is measuring something other than engagement? Maybe it's actually measuring applicability of online learning instead. * the method does not do this -- the structure of the curriculum might * "can" = agree |
| 12 | Online learning builds time management skills | * Is this really measuring engagement? Or more EF skills? * no more so than face-to-face although research has shown that students with good time management skills do better at online than students without good time management skills |
| 13 | Online learning requires time commitment | * no more so that face-to-face |
| 14 | Online learning engages student autonomy | * "Autonomy" I'm not sure. More study is required. |

**Subscale Revisions and Scale Formatting Added**

Perceptions of Online Learning Scale (POOLS) V1

Start of Block: Block 1

Q1 We appreciate your willingness to take this survey to gauge your perceptions of online learning. For each of the following items, rate your perceptions about online or blended learning compared to traditional learning environments.

For each statement, rate your perception as...

(1) Definitely less than face-to-face

(2) Somewhat less than face-to-face

(3) About the same as face-to-face

(4) Somewhat more than face-to-face

(5) Definitely more than face-to-face

We aim to gauge how you perceive different aspects of learning in an online environment versus learning in a traditional face-to-face environment.

End of Block: Block 1

Start of Block: Effective Learning

Q2 Compared to a traditional face-to-face learning environment, you perceive that online learning...

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | Definitely less than | Somewhat less than | About the same as | Somewhat more than | Definitely more than |
| permits students to acquire content knowledge |  |  |  |  |  |
| permits students to develop conceptual understanding |  |  |  |  |  |
| is effective for learning about the topics in the curriculum |  |  |  |  |  |
| is effective for building knowledge |  |  |  |  |  |
| supports student achievement |  |  |  |  |  |
| provides effective learning resources |  |  |  |  |  |
| supports achievement with multi-media content |  |  |  |  |  |
| prepares students for high stakes assessments |  |  |  |  |  |
| prepares students for work |  |  |  |  |  |
| accomplishes the goals of the curriculum |  |  |  |  |  |
| promotes higher-order thinking skills as analysis, synthesis, and evaluation |  |  |  |  |  |
| builds student communication skills |  |  |  |  |  |
| builds student social skills |  |  |  |  |  |
| includes focused assessment and feedback |  |  |  |  |  |
| effectively assesses student performance |  |  |  |  |  |
| assessments provide teachers with reliable information on student progress |  |  |  |  |  |
| encourages academic integrity and adherence to intellectual property standards |  |  |  |  |  |
| is effective for building understanding |  |  |  |  |  |
| prepares students for work further education |  |  |  |  |  |

End of Block: Effective Learning

Start of Block: Student Centered

Q3 Compared to a traditional face-to-face learning environment, you perceive that online learning...

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | Definitely less than | Somewhat less than | About the same as | Somewhat more than | Definitely more than |
| is student-centered |  |  |  |  |  |
| offers students choices |  |  |  |  |  |
| permits differentiation based on student needs |  |  |  |  |  |
| supports flexible pacing for students |  |  |  |  |  |
| supports learner-customized pacing |  |  |  |  |  |
| aligns instruction to individual learning goals |  |  |  |  |  |
| encourages diverse student perspectives |  |  |  |  |  |
| is personalized and adaptive |  |  |  |  |  |
| is responsive to students |  |  |  |  |  |
| is culturally responsive |  |  |  |  |  |

End of Block: Student Centered

Start of Block: Interactive

Q4 Compared to a traditional face-to-face learning environment, you perceive that online learning...

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | Definitely less than | Somewhat less than | About the same as | Somewhat more than | Definitely more than |
| supports student-to-student interaction |  |  |  |  |  |
| permits students to collaborate on learning tasks |  |  |  |  |  |
| encourages student-to-student discussions |  |  |  |  |  |
| provides a space for students to work in teams |  |  |  |  |  |
| permits one-on-one student interaction with the teacher |  |  |  |  |  |
| builds community among students |  |  |  |  |  |
| encourages academic dialogue |  |  |  |  |  |
| is collaborative |  |  |  |  |  |
| requires active participation |  |  |  |  |  |
| permits teachers to provide timely responses |  |  |  |  |  |

End of Block: Interactive

Start of Block: Engaging

Q5 Compared to a traditional face-to-face learning environment, you perceive that online learning...

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | Definitely less than | Somewhat less than | About the same as | Somewhat more than | Definitely more than |
| engages students in meaningful ways |  |  |  |  |  |
| connects learning to real world situations |  |  |  |  |  |
| builds self-directed learning skills |  |  |  |  |  |
| supports project-based learning |  |  |  |  |  |
| supports creative thinking and innovation |  |  |  |  |  |
| engages student agency |  |  |  |  |  |
| engages student self-directed learning |  |  |  |  |  |
| helps students transfer learning to novel situations |  |  |  |  |  |
| is interesting |  |  |  |  |  |
| motivates students to learn |  |  |  |  |  |
| makes content applicable to real-world contexts |  |  |  |  |  |
| builds time management skills |  |  |  |  |  |
| requires time commitment |  |  |  |  |  |
| engages student autonomy |  |  |  |  |  |

End of Block: Engaging

(End Survey)