



Assessment Advisory Committee Recommendations Report

December 6, 2017

Introduction: Charge to the Committee and Background

The Minnesota Department of Education (MDE) convened the Assessment Advisory Committee to collaboratively develop a comprehensive plan to implement recommendations from several reports and work groups. The Office of the Legislative Auditor's (OLA)¹ findings and recommendations provided much of the foundation for the work. Additionally, recommendations from the Assessment Future Design Working Group² and the Test Policies and Procedures Committee³ were discussed. The committee's goal was to align assessment recommendations to respond to the OLA Report, while still considering the wide variety of topics in the assessment space. The committee took into consideration during discussion that the development, administration, and reporting of statewide assessments is complex and time consuming. Annual assessment requirements are specified in both federal and state legislation.

MDE staff provided information to the committee on current state standards, Elementary and Secondary Education Act federal requirements, current testing requirements, and the state accountability system. Additionally, MDE staff facilitated the conversation examining the reports mentioned above.

Members of the committee included parents, school officials, educators, business representatives, and the public.

See Appendix A for the committee membership roster.

The committee held four meetings beginning on August 7, 2017. The final meeting took place on October 4, 2017, and the recommendations included with this report were adopted.

Assessment Advisory Committee Recommendations

The Assessment Advisory Committee recommends and submits them for consideration to the commissioner of education. These recommendations represent majority consensus and not unanimous opinions.

Features of the Accountability Assessment System

The accountability assessment system should be:

- **Transparent:** MDE will provide information regarding the method of test development, the personnel involved in the development of the assessments, how the assessments are aligned to the standards, and purpose and validity of results. The intent is to build trust and buy-in around the accountability system.
- **Informative:** The results are clear and concise for teachers, district administrative staff, students, parents and the public.
- **Actionable:** Results provide annual evidence to support system-level decisions.

These guiding principles provide the foundation for the recommendations.

¹ [Standardized Student Testing 2017 Evaluation Report](#)

² [Future Assessment Design Working Group Recommendations Report](#)

³ [Test Policies and Procedures Committee Recommendations and Final Report July 2015](#)

Recommendation 1: Revisions to State Legislation

Minnesota state legislation should be revised to eliminate the specificity requiring:

- Career and College readiness trajectory reporting for grades 3-8 (Consistent with OLA Report, pages 70-71).
- Above and below grade level additional items (See OLA Report, pages 80-81).
- Growth formula details (See OLA Report, pages 68-69).

A mark-up of legislation is provided in Appendix B.

Recommendation 2: Increase Outreach and Support

MDE Statewide Testing and Academic Standards will improve educator support by:

- Improving communication with districts in a variety of modes (including, but not limited to face-to-face trainings, webinars, online videos, data review protocols).
 - This recommendation is consistent with a recommendation from both the OLA Report and Future Assessment Design Working Group Report. Communication between MDE and the District Assessment Coordinators (DACs) has historically been the focus of MDE's Division of Statewide Testing; the outreach should continue and be expanded. This includes providing more face-to-face trainings, especially outside of the metro area and continuing to expand the offerings of training modules.
- Increasing access to assessment resources aligned to Minnesota Academic Standards available to educators highlighting the connection between assessment and standards (including, but not limited to websites, concise user guides, online videos).
 - This recommendation is consistent with a recommendation from both the OLA Report and Future Assessment Design Working Group Report. Educators are the primary audience of this outreach and support. As noted in the OLA Report, some work has already been started by MDE through a federal grant. The demand is greater than the grant provides funding for and that position's funding will be available only through the 2020-2021 school year.
- Providing a resource bank, aligned to content/subject, benchmark and Depth of Knowledge (DOK).
 - Classroom activities and projects will be included.
 - Questions will match the Minnesota Comprehensive Assessments (MCA) format and style.
 - Educators will have open online access to the resources.
 - MDE will not be responsible for grading or scoring.
 - MDE will facilitate development of the resources and rubrics to ensure quality.
 - Volunteer districts can share results to MDE to be used to guide edits to the item bank.
 - This recommendation is consistent with the Future Assessment Design Working Group's recommendation. The objective is to provide a resource bank aimed to improve educator support in order to challenge students appropriately. The resource bank would provide all districts access to resources aligned to the Minnesota Academic Standards in English Language Arts, Mathematics, and Science. The resources would also demonstrate the range of mastery needed for the different Achievement Level Descriptors (e.g., partially meets, meets, exceeds) and the full depth and breadth of benchmarks (e.g., Depth of Knowledge). Currently there is no support developed for this purpose.

Recommendation 3: High School Assessment

At this time, the state legislation requires districts to offer a college entrance exam to all students during the school day. However, current Minnesota state legislation specifies reimbursement of college entrance exams will be provided only for students eligible for free or reduced-price lunch or students unable to pay. Minnesota state legislation should be revised to reimburse districts for the administration of college entrance exams for **all** students, therefore reverting back to the 2016 legislation. A mark-up of legislation is provided in Appendix B.

The Assessment Advisory Committee would like to use the ACT for the statewide high school assessment, short of allowing the ACT then they recommend the full cost reimbursement. This is particularly critical in the era of opt-out. Appendix C provides a letter of additional perspective received from one committee member related to this recommendation.

Recommendation 4: Reduce Length of the Academic Assessments

Reduce the length of the adaptive academic assessments to the minimum length to meet the federal requirement. MDE should request a waiver from the U.S. Department of Education to no longer provide individual student strand/sub-strand scores. Depending on the simulations and details of the reduced test, MDE should continue to provide district and school-level sub-strand and benchmark reports that are technically valid.

This recommendation originated with the Future Assessment Design Working Group and the intent is to provide information at the system level, for all schools and districts, while decreasing the test length. Appendix C provides a letter of additional perspective received from one committee member related to this recommendation.

Recommendation 5: Implementation

In order to ensure implementation of this committee's recommendations consistent with conversations, as well as other working groups' efforts, MDE should ensure technical assessment staff, educators, and stakeholders are involved with implementation. MDE should broaden the distribution for participation in the existing Local Assessment Advisory Committee (LAAC).

Recommendation 6: Evaluate the needs of DACs and other educators to provide instruction aligned to standards, administer statewide assessments, and effectively and efficiently utilize results.

MDE should conduct a needs assessment of DACs and educators. The purpose of the needs assessment would be to determine the additional resources needed by users across the state. This is an effort to describe the difference between where DACs and educators currently feel supported and where they need additional resources. The department could utilize surveys, focus groups, interviews, document review, etc., for the needs assessment. The LAAC will provide guidance to MDE to ensure the format is respectful of staff time.

Appendix A

Assessment Advisory Committee Member List

Last Name	First Name	Organization
Adney	Dave	Minnesota Association of Secondary School Principals (MASSP)
Baisch	Marsha	Minnesota Association of School Administrators (MASA)
Bartholomew	Jim	Minnesota Business Partnerships (MBP)
Chilkott	Gretchen	TPPC - Test Policy Procedures Committee
Christ	Ted	Center for Applied Research and Education Improvement (CAREI)
Davis	Sue	Minnesota Rural Education Association (MREA)
Esdal	Lars	Education Evolving
Keliher	Grace	Minnesota School Boards Association (MSBA)
Levine	Stephanie	Association of Metropolitan School Districts (AMSD)
Millerhagen	Jon	Minnesota Elementary School Principal's Association (MESPA)
Schneidawind	Kirk	Minnesota School Boards Association (MSBA)
Videen	Cheryl	Future Design Working Group / Robbinsdale Area Schools
Walker	Michelle	Generation Next
Winkelaar	Paul	Education Minnesota

Appendix B

Proposed Changes to Legislation

Eliminate the specificity requiring Career and College readiness trajectory reporting for grades 3-8.

120B.30 STATEWIDE TESTING AND REPORTING SYSTEM.

Subdivision 1. Statewide testing.

(m) The 3rd through 8th grade computer-adaptive assessment results and high school test results shall be available to districts for diagnostic purposes affecting student learning and district instruction and curriculum, and for establishing educational accountability. ~~The commissioner must establish empirically derived benchmarks on adaptive assessments in grades 3 through 8.~~ The commissioner, in consultation with the chancellor of the Minnesota State Colleges and Universities, must establish empirically derived benchmarks on the high school tests that reveal a trajectory toward career and college readiness consistent with section [136F.302](#), subdivision 1a. The commissioner must disseminate to the public the ~~computer-adaptive assessments and~~ high school test results upon receiving those results.

Eliminate the specificity requiring above and below grade level additional items.

120B.30 STATEWIDE TESTING AND REPORTING SYSTEM.

Subd. 1a. Statewide and local assessments; results.

~~(a) For purposes of this section, the following definitions have the meanings given them.~~

~~(1) "Computer adaptive assessments" means fully adaptive assessments.~~

~~(2) "Fully adaptive assessments" include test items that are on-grade level and items that may be above or below a student's grade level.~~

~~(3) "On grade level" test items contain subject area content that is aligned to state academic standards for the grade level of the student taking the assessment.~~

~~(4) "Above grade level" test items contain subject area content that is above the grade level of the student taking the assessment and is considered aligned with state academic standards to the extent it is aligned with content represented in state academic standards above the grade level of the student taking the assessment. Notwithstanding the student's grade level, administering above grade level test items to a student does not violate the requirement that state assessments must be aligned with state standards.~~

~~(5) "Below grade level" test items contain subject area content that is below the grade level of the student taking the test and is considered aligned with state academic standards to the extent it is aligned with content represented in state academic standards below the student's current grade level. Notwithstanding the student's grade level, administering below grade level test items to a student does not violate the requirement that state assessments must be aligned with state standards.~~

~~(b) The commissioner must use fully adaptive mathematics and reading assessments for grades 3 through 8.~~

Eliminate the specificity requiring growth formula details.

120B.299 DEFINITIONS.

Subdivision 1. Definitions.

The definitions in this section apply to this chapter.

Subd. 2. Growth

"Growth" compares the difference in a student's achievement score at two or more distinct points in time.

~~Subd. 3. Value added.~~

~~"Value added" is the amount of achievement a student demonstrates above an established baseline. The difference between the student's score and the baseline defines value added.~~

~~Subd. 4. Value added growth.~~

~~"Value added growth" is based on a student's growth score. In a value added growth system, the student's first test is the baseline, and the difference between the student's first and next test scores within a defined period is the measure of value added. Value added growth models use student-level data to measure what portion of a student's growth can be explained by inputs related to the educational environment.~~

Subd. 5. Adequate yearly progress.

A school or district makes "adequate yearly progress" if, for every student subgroup under the federal 2001 No Child Left Behind Act in the school or district, its proficiency index or other approved adjustments for performance, based on statewide assessment scores, meets or exceeds federal expectations. To make adequate yearly progress, the school or district also must satisfy applicable federal requirements related to student attendance, graduation, and test participation rates.

~~Subd. 6. State growth target.~~

- ~~(a) "State growth target" is the average year two assessment scores for students with similar year one assessment scores.~~
- ~~(b) The state growth targets for each grade and subject are benchmarked as follows until the assessment scale changes:~~
- ~~(1) beginning in the 2008-2009 school year, the state growth target for grades 3 through 8 is benchmarked to 2006-2007 and 2007-2008 school year data;~~
 - ~~(2) beginning in the 2008-2009 school year the state growth target for grade 10 is benchmarked to 2005-2006 and 2006-2007 school year data;~~
 - ~~(3) for the 2008-2009 school year, the state growth target for grade 11 is benchmarked to 2005-2006 school year data; and~~
 - ~~(4) beginning in the 2009-2010 school year, the state growth target for grade 11 is benchmarked to 2005-2006 and 2006-2007 school year data.~~
- ~~(c) Each time before the assessment scale changes, a stakeholder group that includes assessment and evaluation directors and staff and researchers must recommend a new state growth target that the commissioner must consider when revising standards under section [120B.021, subdivision 4](#).~~

Subd. 7. Low growth.

"Low growth" is an assessment score one-half standard deviation below the state growth target.

Subd. 8. Medium growth.

"Medium growth" is an assessment score within one-half standard deviation above or below the state growth target.

Subd. 9. High growth.

"High growth" is an assessment score one-half standard deviation or more above the state growth target.

Subd. 10. Proficiency.

"Proficiency" for purposes of reporting growth on school performance report cards under section [120B.36, subdivision 1](#), means those students who, in the previous school year, scored at or above "meets standards" on the statewide assessments under section [120B.30](#). Each year, school performance report cards must separately display: (1) the numbers and percentages of students who achieved low growth, medium growth, and high growth and achieved proficiency in the previous school year; and (2) the numbers and percentages of students who achieved low growth, medium growth, and high growth and did not achieve proficiency in the previous school year.

Subd. 11. Growth and progress toward proficiency.

The categories of low growth, medium growth, and high growth shall be used to indicate both (1) growth and (2) progress toward grade-level proficiency that is consistent with subdivision 10.

120B.36 SCHOOL ACCOUNTABILITY.

Subdivision 1. School performance reports and public reporting.

- (a) The commissioner shall report student academic performance data under section [120B.35, subdivisions 2](#) and 3; the percentages of students showing low, medium, and high growth under section [120B.35, subdivision 3, paragraph \(b\)](#) **academic progress**; school safety and student engagement and connection under section [120B.35, subdivision 3, paragraph \(d\)](#); rigorous coursework under section [120B.35, subdivision 3, paragraph \(c\)](#); the percentage of students under section [120B.35, subdivision 3, paragraph \(b\), clause \(2\)](#), whose progress and performance levels are meeting career and college readiness benchmarks under sections [120B.30, subdivision 1](#), and [120B.35, subdivision 3, paragraph \(e\)](#); longitudinal data on the progress of eligible districts in reducing disparities in students' academic achievement and realizing racial and economic integration under section [124D.861](#); the acquisition of English, and where practicable, native language academic literacy, including oral academic language, and the academic progress of all English learners enrolled in a Minnesota public school course or program who are currently or were previously counted as English learners under section [124D.59](#); two separate student-to-teacher ratios that clearly indicate the definition of teacher consistent with sections [122A.06](#) and [122A.15](#) for purposes of determining these ratios; staff characteristics excluding salaries; student enrollment demographics; foster care status, including all students enrolled in a Minnesota public school course or program who are currently or were previously in foster care, student homelessness, and district mobility; and extracurricular activities.

- (b) The school performance report for a school site and a school district must include school performance reporting information and calculate proficiency rates as required by the most recently reauthorized Elementary and Secondary Education Act.
- (c) The commissioner shall develop, annually update, and post on the department Web site school performance reports consistent with paragraph (a) and section [120B.11](#).
- (d) The commissioner must make available performance reports by the beginning of each school year.
- (e) A school or district may appeal its results in a form and manner determined by the commissioner and consistent with federal law. The commissioner's decision to uphold or deny an appeal is final.
- (f) School performance data are nonpublic data under section [13.02, subdivision 9](#), until the commissioner publicly releases the data. The commissioner shall annually post school performance reports to the department's public Web site no later than September 1, except that in years when the reports reflect new performance standards, the commissioner shall post the school performance reports no later than October 1.

Subd. 2. Student progress and other data.

- (a) All data the department receives, collects, or creates under section [120B.11](#), governing the world's best workforce, or uses to determine federal expectations under the most recently reauthorized Elementary and Secondary Education Act, ~~set state growth targets,~~ and determine student growth, learning, and outcomes under section [120B.35](#) are nonpublic data under section [13.02, subdivision 9](#), until the commissioner publicly releases the data.
- (b) Districts must provide parents sufficiently detailed summary data to permit parents to appeal under the most recently reauthorized federal Elementary and Secondary Education Act. The commissioner shall annually post federal expectations ~~and state~~ student growth, learning, and outcome data to the department's public Web site no later than September 1, except that in years when data or federal expectations reflect new performance standards, the commissioner shall post data on federal expectations and ~~state~~ student growth data no later than October 1.

124D.98 LITERACY INCENTIVE AID.

Subdivision 1. Literacy incentive aid.

A district's literacy incentive aid equals the sum of the proficiency aid under subdivision 2, and the growth aid under subdivision 3.

Subd. 2. Proficiency aid.

The proficiency aid for each school in a district that has submitted to the commissioner its local literacy plan under section [120B.12, subdivision 4a](#), is equal to the product of the school's proficiency allowance times the number of third grade pupils at the school on October 1 of the previous fiscal year. A school's proficiency allowance is equal to the percentage of students in each building that meet or exceed proficiency on the third grade reading Minnesota Comprehensive Assessment, averaged across the previous three test administrations, times \$530.

Subd. 3. Growth aid.

The growth aid for each school in a district that has submitted to the commissioner its local literacy plan under section [120B.12, subdivision 4a](#), is equal to the product of the school's growth allowance times the number of fourth grade pupils enrolled at the school on October 1 of the previous fiscal year. A school's growth allowance is equal to the percentage of students at that school making ~~progress~~ ~~medium or high growth~~, under section [120B.299](#), on the fourth grade reading Minnesota Comprehensive Assessment, averaged across the previous three test administrations, times \$530.

College Entrance Exam Reimbursement for All Students

120B.30 STATEWIDE TESTING AND REPORTING SYSTEM.

Subdivision 1. Statewide testing.

(e) Though not a high school graduation requirement, students are encouraged to participate in a nationally recognized college entrance exam. With funding provided by the state, a district must pay the cost, one time, for an interested student in grade 11 or 12 to take a nationally recognized college entrance exam before graduating. A student must be able to take the exam under this paragraph at the student's high school during the school day and at any one of the multiple exam administrations available to students in the district.

College Entrance Exam test reimbursement (In appropriations portion)

To reimburse districts for students who qualify under Minnesota Statutes, section 120B.30, subdivision 1, paragraph (e), for onetime payment of their college entrance examination fee.

FY19 \$5,000,000

Any test reimbursement balance in the first year does not cancel but is available in the second year. Any test reimbursement balance in the second year does not cancel and may be carried forward until the year students who are eligible for reimbursement reach age 21.

Appendix C

Letter of Additional Information

October 30, 2017

Jennifer Dugan, Director
Statewide Testing
Minnesota Department of Education
1500 Highway 36 West
Roseville, Minnesota 55113

Dear Director Dugan:

We are writing for two purposes. First, we're submitting this letter as a minority report to some of the Assessment Advisory Committee's recommendations. Second, we'd like to thank you for your leadership in coordinating the Committee and responding to our requests for additional information.

When considering state student assessment policies, and the Minnesota Comprehensive Assessments (MCAs) in particular, it's important to recognize that Minnesota has developed some of the nation's best career and college-readiness standards. These standards, like the MCAs, have been developed with Minnesota educators, and students who are able to meet our standards are more likely to pursue a post-secondary education, without need for remedial coursework⁴.

The role of the MCAs then, is to measure student learning relative to our standards, and provide information about student progress to students, families, educators and the public.

Are the MCAs meeting the goal of providing useful information?

Clearly, the answer is "yes" - given 87 percent of principals and 81 percent of teachers reported that MCA scores are useful in determining if students are meeting our standards⁵. One area for improvement, however, is providing more professional development for teachers so they are better able to take the next step in helping students by interpreting MCA results and adjusting instructional practices – only 57% of teachers feel prepared to interpret MCA scores⁶.

With this as background, we'd like to express our concerns with two of the Committee's recommendations.

Committee recommendation #3. Replace the high school MCAs with the ACT.

The ACT is an inadequate summative assessment for measuring college readiness or high school proficiency.

Data presented at the University of Minnesota's December Board of Regents meeting indicated that the ACT is a poor predictor of college readiness showing that a score of 28 is not statistically different from a score of 22 when predicting student achievement in their corresponding college course, yet all students, especially students of color, are less likely to score a 28 or higher on the test than a 22.⁷ Additionally, students who are deemed

⁴ Minnesota Office of Higher Education, Getting Prepared 2016 Report, page 40.

⁵ Office of the Legislative Auditor, 2017 report on standardized student testing, page 77.

⁶ Office of the Legislative Auditor, 2017 report on standardized student testing, page 83.

⁷ Katz, Robert. "How test scores can block black students from the University of Minnesota." *The StarTribune* 19 Oct. 2017.

college-ready by the ACT have a 25 percent chance of receiving a D or F in their corresponding college course, compared to Minnesota's 22 percent college remediation rate.⁸

We know the ACT is a poor predictor of college readiness, and the ACT does not claim to measure intelligence, student achievement, or hard work in high school.⁹ The ACT is not a Minnesota standards-aligned assessment, nor does it claim to be. It does, however, claim to be a college readiness assessment, yet fails to adequately predict college success. This is reason alone to abandon the test, let alone prevent it from replacing our Minnesota-designed, standards-aligned assessment, the MCA.

Furthermore, use of the current ACT is against both federal and state law. Federal testing law requires assessments be accessible to all students, including students with disabilities. Because the ACT is a timed test without needed accommodations, many students, including students with disabilities, have less access to do well on the ACT. Likewise, state law requires schools adopt only state-designed and standards-aligned assessments to measure student progress, which the ACT is neither.

We believe the MCA is a superior test. The MCA is designed by Minnesota educators, is aligned to Minnesota K-12 standards and is more accessible to all students including students with disabilities and English learners. The MCA is a better indicator of school achievement than the ACT, allowing students to show what they have learned in their years of schooling rather than what they have learned in a few weeks of a test preparation course. Although not designed as such, the MCA is also a strong indicator of college readiness with college remediation rates for proficient students well below the state average¹⁰. Lastly, the MCA is a test that students can pass when they are taught state standards, resulting in higher proficiency rates across the board compared to the ACT. For example:

- Just 21% of Black students are deemed ready for college-level reading on the ACT, compared to 31% of Black students deemed proficient based on the MCAs;
- 29% of Latino/Hispanic students are considered college-ready in reading on the ACT, compared to 37% based on the MCAs; and
- Only 12% of American Indian/Alaskan Native students are deemed ready for college-level science on the ACT, compared to 29.5% based on the MCAs.¹¹

Had Minnesota adopted the ACT in 2017, fewer students would be considered proficient even if they had a firm grasp on the state's standards, which means fewer educators and schools would be considered effective even when they teach to state standards. The state would have also been promoting an assessment that has been a barrier to college for many, especially our most underserved students.

Minnesota State institutions now exempt incoming students from remedial courses if they meet certain MCA scores, and student MCA results are part of the admissions process. Should the state replace the MCA with the ACT, more students will likely be required to take remediation coursework.

We are open to considering alternative assessments – if they can meet or exceed the same quality criteria as the MCAs. Any state-adopted assessment must be directly aligned with Minnesota standards, provide a broad range of accommodations for English language learners and special education students, and have a Minnesota-based bias review process for screening, approving, and changing test questions, if needed.

⁸ The ACT, 2017 Profile Report – Minnesota, page 3.

⁹ Katz, 2017.

¹⁰ Minnesota Office of Higher Education, Getting Prepared 2016 Report.

¹¹ Crosson, Joshua. "Minnesota, It's Time to Break Up With the ACT." 25 Sept. 2017.

If a national testing vendor can demonstrate their high school tests (e.g. ACT) meet or exceed these, and other quality criteria, then they can be considered.

Committee recommendation #5. Reduce the length of the MCAs – and the information they provide.

Reducing the amount of information students, families and educators get from MCA results is the last thing we should be doing.

When just over half of our teachers feel prepared to interpret and make better use of MCA results, it may be easier to disregard information that can help our students, but the real benefit comes from working with teachers (and families) to help them understand MCA results – and what we can do differently to support students.

We also question the need for this recommendation, if the concern is MCAs take too long for students to take. Students spend less time taking the MCAs than anticipated by the Minnesota Department of Education, and the medium time spent taking two MCA exams is just over three hours (e.g. fourth grade student, reading and math MCAs)¹².

Before the state considers reducing the information made available by the MCAs we should:

- i. understand how school districts have complied with the law limiting student time taking locally adopted tests (120B.301); and
- ii. understand how much time schools spend preparing students to take the MCAs, and why.

If schools spend too much time on “test prep” because the MCAs are part of Minnesota’s accountability system, the Committee’s recommendation doesn’t address this issue – the MCAs are still required, we’ll just get less information from them.

Rather than replacing the MCAs or minimizing the information they provide we recommend improving teacher professional development in the areas of:

- i. understanding the state’s academic standards and benchmarks and how teachers can incorporate them into their curriculum (only 16% of schools have fully implemented state English standards¹³; and
- ii. assessment literacy - understanding test results, how to adjust instruction based on test results and talking with families about MCA results and how they can help.

Minnesota has developed a strong framework of standards and assessments to guide students toward meeting career and college-readiness expectations. We look forward to working with the Department, legislators, educators and families to build our schools’ capacity around this framework to help all students succeed.

Thank you,

Jim Bartholomew
Minnesota Business Partnership

Joshua Crosson
Ed Allies

¹² Office of the Legislative Auditor, 2017 report on standardized student testing, pages 49 and 51.

¹³ MDE, 2016 Minnesota English Language Arts Standards & Multi-Tiered System of Supports Implementation Survey.