A Novel Use of the Qualtrics Offline App to Collect Comprehensive Student Performance Data for Candidate Assessment and Program Improvement

Dr. Chris Nicholas Boosalis
College of Education
Sacramento State
Sacramento, USA
chris.boosalis@csus.edu

Dr. Oddmund Myhre
College of Education, Kinesiology & Social Work
Stanislaus State
Turlock, USA
omyhre@csustan.edu

***Abstract*—New credentialing standards that were issued by the California Commission on Teacher Credentialing require that program administrators maintain a great deal assessment data during field work to include supervision activities, hours, training, and teaching performance expectation evaluations. These data, particularly the evaluation elements, are to be used for candidate assessment and program improvement. The challenge for programs is not only to archive these data points, but also to make the best use of the data as possible. Program leadership must also document that university supervisors and cooperating teachers have received appropriate training prior to conducting visits or hosting students. The Qualtrics Offline App provides a simple way for all stakeholders who are involved with supervising fieldwork experiences can maintain compliance with these new requirements, while also providing meaningful candidate assessment and data-informed program improvement.**

Keywords—Qualtrics; Qualtrics App; evaluation; assessment; program assessment

I. INTRODUCTION

In California, recently revised teaching credential program requirements present a higher degree of new bureaucratic challenges than in the past [1]. While documenting candidates' placement hours, conditions, and interactions represent part of the challenge are not new, the demand to collect, aggregate, disaggregate, analyze, and report all of the data from disparate sources does present a formidable barrier. In the first place, internet access in classrooms is often restricted to shield K12 pupils from inappropriate content. While this limitation is certainly understandable, it does have a negative impact on program managers' ability to move to a purely electronic form of observation and assessment.

An additional challenge lies with reporting results to candidates, programs, and to accreditors. Because much of the information currently lives on word documents or paper forms, the information is often inaccessible and difficult to scrape. Some solutions, such as TaskStream, LiveText, or TK20, offer some degree of electronic data management and assessment, but those types of solutions are still hampered by the technological limitations of K12 classrooms. Put simply, the permissions required to ensure a consistent connection are often too consuming and complicated (many platforms require a live internet connection for use). Finally, any amount of a "learning curve" ensures that students, supervisors, and cooperating teachers will have difficulty completing their assessments in a timely manner and much data become lost and unavailable as separate data collection systems proliferate (e.g., Dropbox, email, etc.) and ultimately subvert the solutions when they become too "difficult" to manage and troubleshoot.

To ensure the viability of any given solution, there are several criteria that must be met. First, the solution must work offline, because of the unreliable nature of internet connections and other restrictions in classrooms. Second, the solution must work on a wide variety of mobile devices, such as iPads, iPhones, Android devices (including Chromebooks), laptops, etc. Third, the interface must be simple and straightforward to use – in other words, there must be no learning curve associated with the use of the solution.

This article presents a very nimble solution that meets these criteria: the Qualtrics offline survey app. The app was designed specifically to work in environments where internet access is unreliable, extremely limited, or simply unavailable. Because supervision forms are easily replicated as survey that run in the app, there is virtually no learning curve involved when completing an observation record. Finally, the app is available for a wide variety mobile devices and configuration is simple [2].

II. QUALTRICS APP

The Qualtrics app can be downloaded from Google Play or iTunes, and configuration involves entering a code that is associated with a standard Qualtrics account. Also iPads that are maintained via configurator can be automatically updated simultaneously. Because these apps are meant to work offline, an internet connection is arbitrary. Students, supervisors, and cooperating teachers can complete self- and performance-based observation while offline and then upload the results when online.

All of the information that is collected in this manner resides in a centralized Qualtrics repository. Preconfigured reports make parsing the data easy, and custom reports can be developed to run tailored reports for a variety of stakeholders. Complete datasets can be exported to .csv and then imported into statistical software packages to run more sophisticated analytics. In this paper, pseudo-data will be parsed in R and

displayed in Shiny to illustrate how the app can integrate easily into a data-informed process for candidate assessment and program improvement.

This article describes how the Qualtrics App can be used by a university supervisor during an offline field observation. In addition, with how supervisor training can be conducted in the same manner. The reader is invited to imagine how the app might be implemented and adapted to virtually any other field or discipline that requires field observations.

III. App for Supervisors and Cooperating Teachers

When a cooperating teacher or university supervisor logs in and selects their role, they will complete questions related to their particular student teacher. The student demographic information, placement type (traditional or bilingual) and whether they are receiving a grant or are in a special program is maintained separately. This is helpful so that the classroom and personal characteristic information does not have to be entered manually. The supervisor can then document the type of interaction (dyad, triad, small group, whole group). Students can then be rated on the required performance expectations, and these data can be monitored for changes over time (see Examples 1 and 2).

IV. App for Student Teachers

Students can complete self-assessment of their progress on the performance expectations over time. This information can be very useful to see how students perceive their abilities at key transition points in their learning cycle (e.g., at entry, mid-point, and end). The student self-assessment results can be paired with the supervisors' evaluation and plotted in very interesting ways that inform both candidates, supervisors, and program faculty and administrators (see Example 3).

V. App for Supervisor Training

New regulations in California require that district supervisors (e.g., cooperating teachers) receive ten hours of training prior to hosting student teachers, and program administrators must document that this training has occurred. It is possible to use an app do deliver this training, document completion, and even email a certificate of completion. Because the training app can accept offline submissions and archive completion, an individual can complete the training over a course of several days or weeks – and then the responses can be uploaded at once (see Example 4).

VI. Data Reporting in Qualtrics

A major benefit with collecting fieldwork data through the Qualtrics App is that the data are centralized and linked together with the student demographic information. This enables reports to be generated and filtered automatically. Using the filters option, reports can be configured to disaggregate groups based on a variety of personal and programmatic characteristics. Archiving responses overtime also allow for the long-term tracking of student progress (see Examples 5–13).

VII. Advanced Analyses

A major benefit to using the Qualtrics App to collect ratings from cooperating teachers, university supervisors, and students is that doing so enable program administrators to run more complicated analyses of student progress. A live demo is here: https://distanceprep.shinyapps.io/boosalisDashboard/.

While the data must be exported to conduct these analyses, Qualtrics support all major formats, including .csv, .tab, and .spss.

Fig. 1 below shows a plot of students' self-evaluations (y-axis) against supervisor assessments (x-axis) on a hypothetical performance expectation. In this example, it is clear that both students and supervisors rate performance in a similar manner and that they do so positively.

Fig. 2 below reflects the converse of Fig. 1, where both students' self-ratings and supervisor performance evaluations are low. These plots are easy to understand, but there are more complicated results that need deeper analysis.

Fig. 1. A plot of student self-perception and supervisor performance assessment: high achievement.

Fig. 2. A plot of student self-perception and supervisor performance assessment: low achievement.

The next figures show more perplexing findings, where student self-assessment and supervisor ratings are not in alignment. In Fig. 3, students rate themselves as low performers while their supervisors rate them highly capable.

In contrast, Fig. 4 below reflects students who may rate their skills very highly while their supervisors rate those same abilities as low. The challenge with interpreting the results from Fig. 3 and 4 is that there is no clear indication of which observations are accurate.

Using the Qualtrics App, more complex analyses are possible, because all of the data are centralized. Fig. 5 below shows an analysis using a combination of R and Shiny to generate a 3D plot of supervisor, student, and cooperating teacher ratings. The example is based on PCA, 3D visualization, and clustering in *R* [3]. Program administrators have a better chance to make meaningful changes to programs and curricula when they can see where agreement among multiple raters emerges or diverges through triangulation. Note that the code is available here: https://github.com/cboosalis.

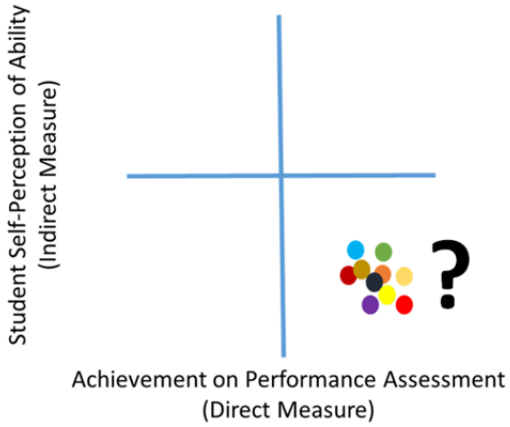


Fig. 3. A plot of student self-perception and supervisor performance assessment: low student self-rating and high supervisor evaluation.

Fig. 4. A plot of student self-perception and supervisor performance assessment: high student self-rating and low supervisor evaluation.

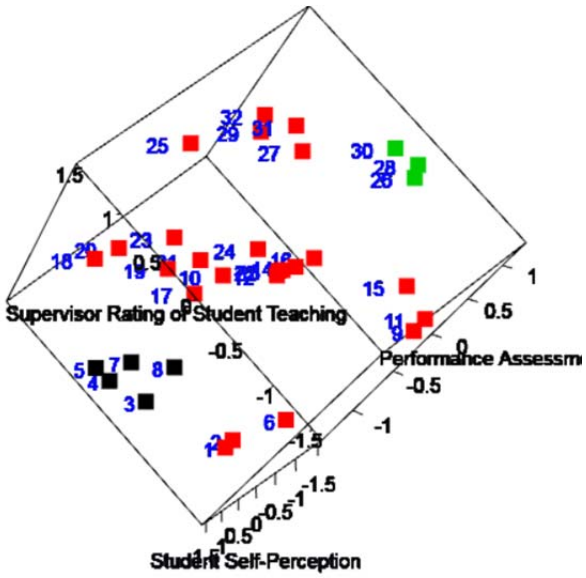


Fig. 5. A 3D plot of supervisor, cooperating teacher, and student self-perception.

VIII. Conclusion

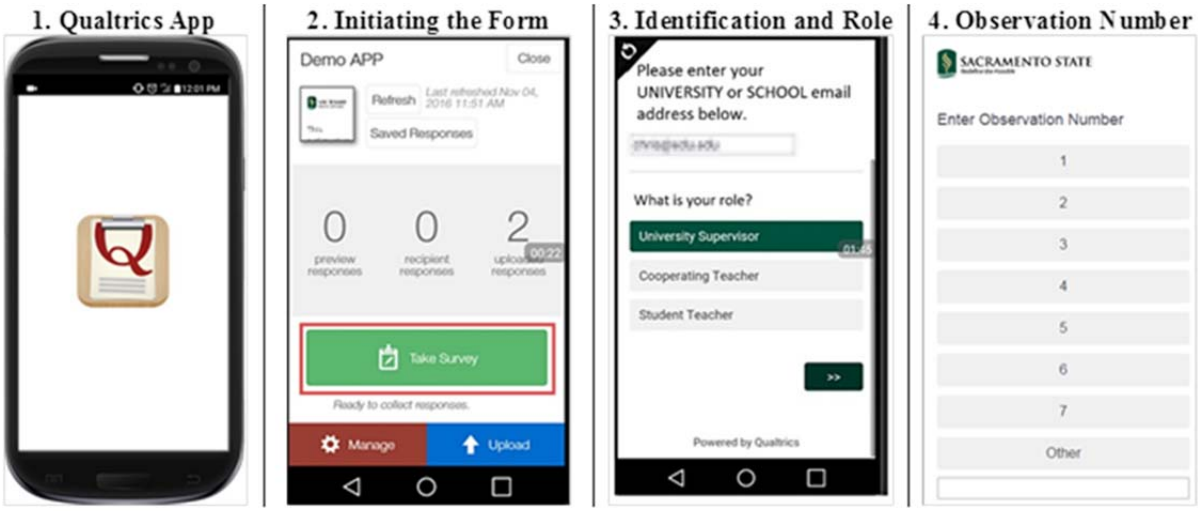
The Qualtrics Offline App provides program administrators a ready solution to nearly all the obstacles that new credentialing standards present. Documenting multiple elements, such as field work hours, demographic traits, and self-assessments and performance assessments, is managed easily whether one is online or offline. Finally, because results are completely centralized, new directions and candidate assessment can commence and better data-informed decisions about programmatic and curricular changes are possible. A demonstration of the Qualtrics App is available on YouTube at the following link: https://goo.gl/BfztJ2. A live example of the 3D plots is available here: https://goo.gl/4Rvlsy.

References

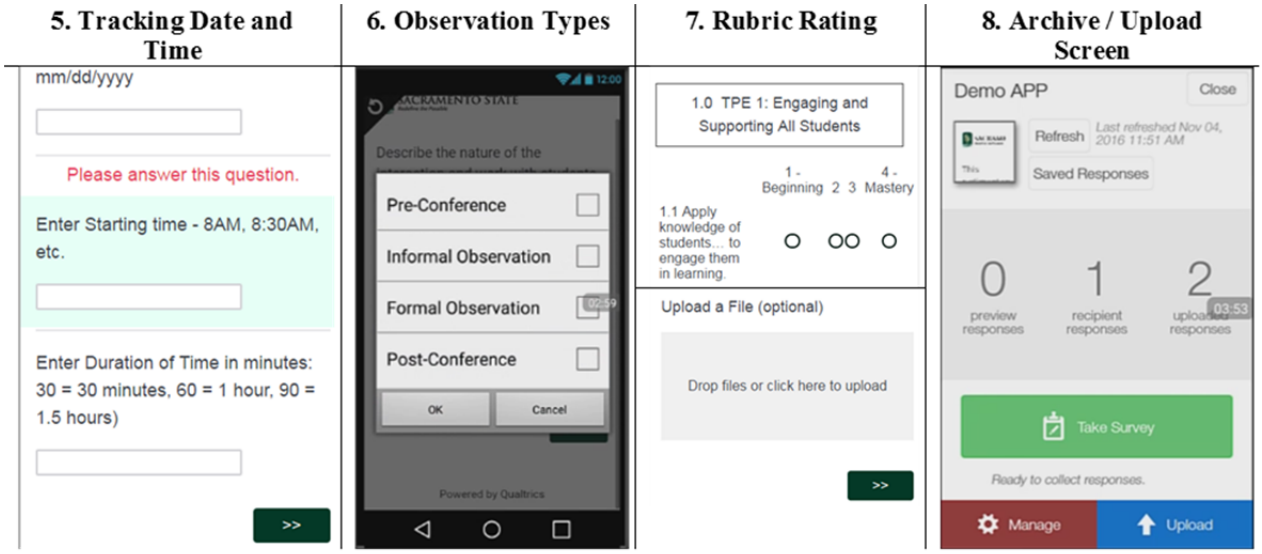
[1] California Commission on Teacher Credentialing, "Preliminary multiple and single subject credential program standards – adopted December 2015 teaching performance expectations (TPEs) – preliminary multiple subject and single subject credential program standards commission on teacher Credentialing", 2016.

[2] Qualtrics, "Survey platform - setting up the Offline App," April 2017.

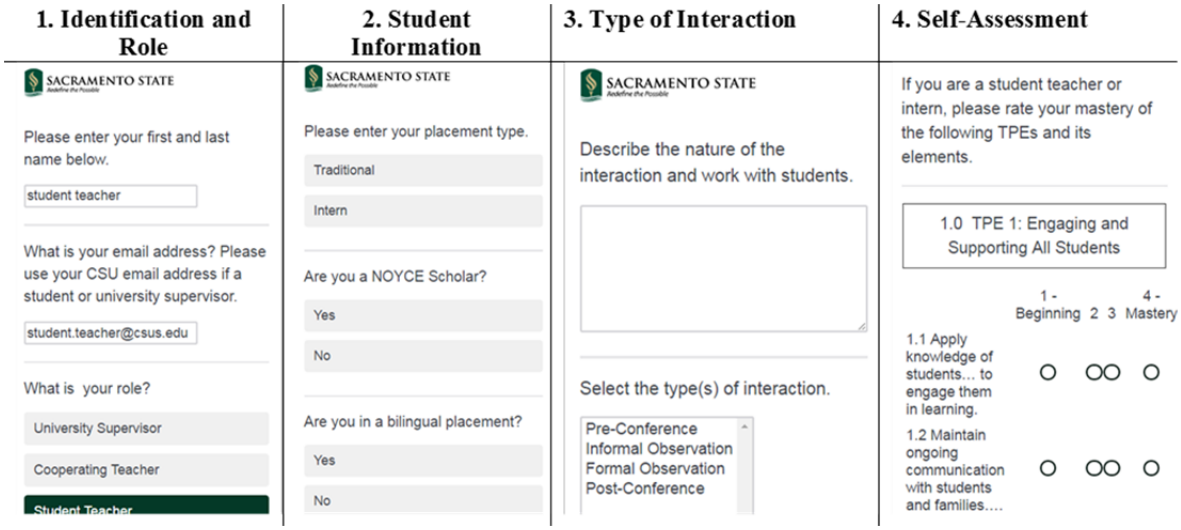
[3] S. Aaron, "PCA, 3D Visualization, and Clustering in R," PCA, 3D Visualization, and Clustering in R. [Online]. Available: http://planspace.org/2013/02/03/pca-3d-visualization-and-clustering-in-r/. [Accessed: 25-Jul-2017].



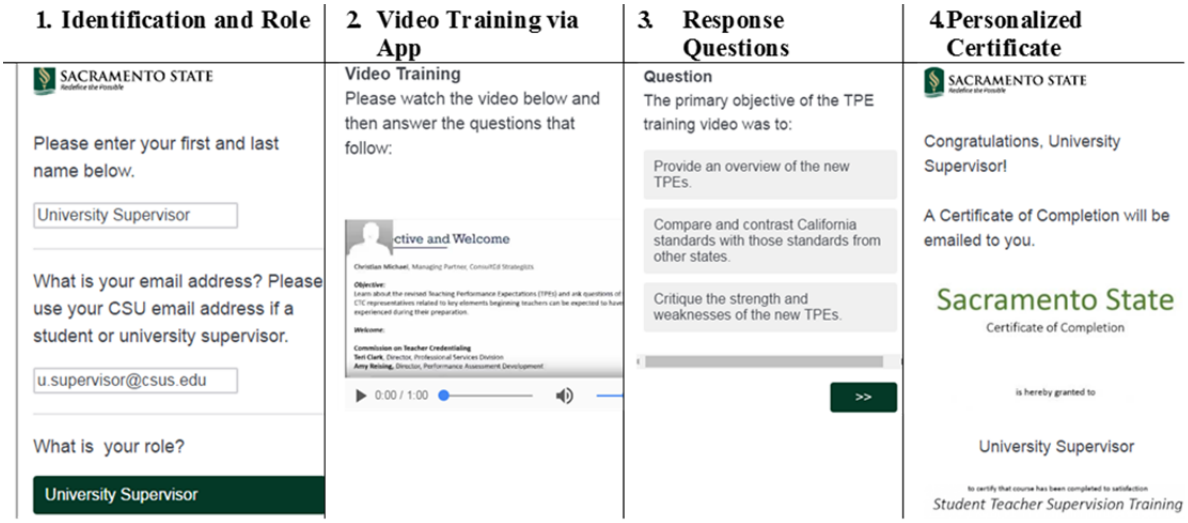
Example 1. Initiating the App.



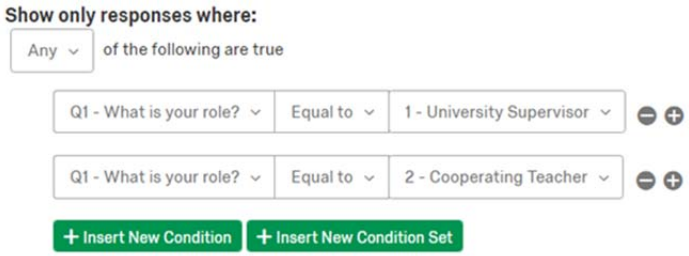
Example 2. Completing an observation.



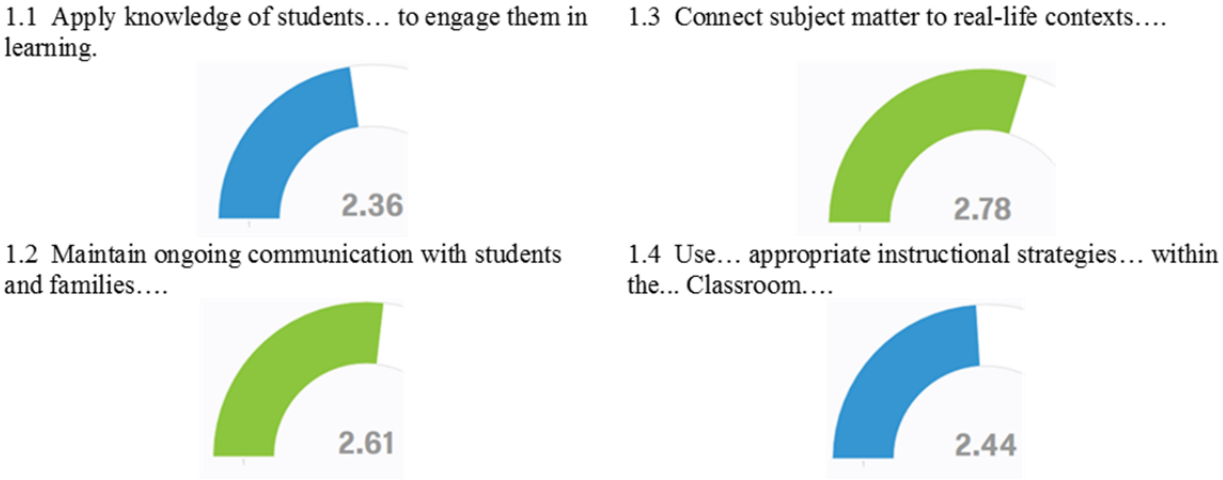
Example 3. Student self-assessment.



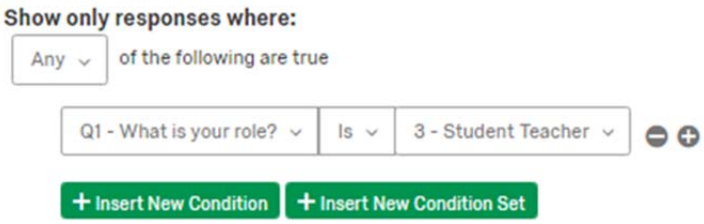
Example 4. Supervisor training.



Example 5. University supervisor and cooperating teacher reporting.



Example 6. TPE 1: Engaging and supporting all students in learning.



Example 7. Student teacher reporting.

Answer	Bar	Response	%
Traditional		5	31.25%
Intern		11	68.75%
Total		16	100.00%

Example 8. Placement filter.

Answer	Bar	Response	%
Yes		6	37.50%
No		10	62.50%
Total		16	100.00%

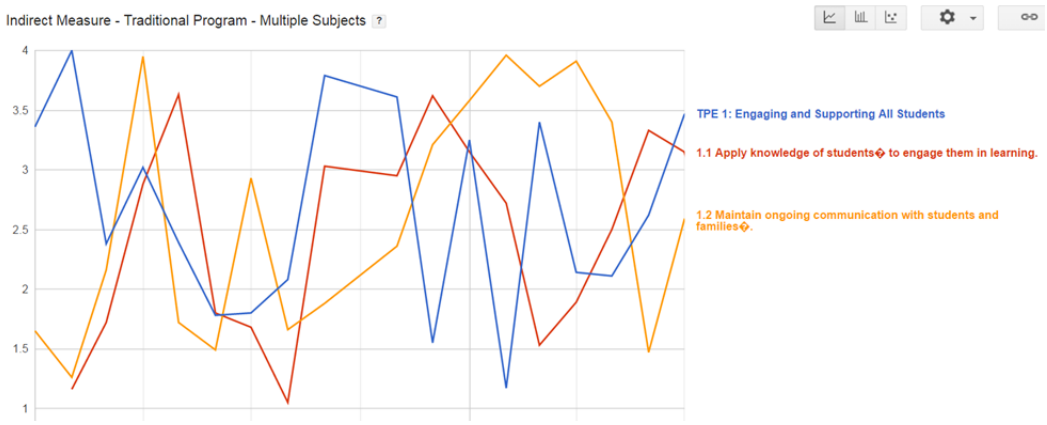
Example 9. Special programs filter.

Answer	Bar	Response	%
Yes		11	68.75%
No		5	31.25%
Total		16	100.00%

Example 10. Are you in a bilingual placement?

Answer	Bar	Response	%
Yes		8	50.00%
No		8	50.00%
Total		16	100.00%

Example 11. Have you received a TEACH Grant?



Example 12. A linear plot of student teach self-perceptions on TPE 1 and the Elements.

Question	1 - Beginning	2	3	4 - Mastery	Response	Average Value
1.1 Apply knowledge of students... to engage them in learning.	37.50%	37.50%	18.75%	6.25%	16	1.94
1.2 Maintain ongoing communication with students and families....	18.75%	18.75%	25.00%	37.50%	16	2.81
1.3 Connect subject matter to real-life contexts....	25.00%	31.25%	18.75%	25.00%	16	2.44
1.4 Use... appropriate instructional strategies... within the... Classroom....	25.00%	25.00%	12.50%	37.50%	16	2.63
1.5 Promote students' critical and creative thinking....	25.00%	31.25%	31.25%	12.50%	16	2.31

Example 13. TPE 1: Engaging and supporting all students.